Welcome message

Dear Colleagues

It is my pleasure to welcome you on behalf of the ESGE Days 2019 scientific committee to ESGE’s second congress in Prague, Czech Republic.

As we are still establishing the ESGE Days congress, we had hoped to match the success of last year’s abstract submissions of 760, and were extremely excited to receive 1081 abstract submissions from over 66 countries for our 2019 congress. Thank you to everyone for submitting their abstracts, and your interest in being part of ESGE Days 2019.

The scientific committee worked extremely hard within a very short timeframe to evaluate all the abstracts. I wish to extend my gratitude to all reviewers for working around the clock to meet our tight deadlines.

Due to the high quality of the submissions, we have extended our scientific programme in order for the authors to present their work at the congress and will again offer ePoster podium sessions where authors present their work at specially designed stations during the breaks.

This year we have decided to publish all the abstracts in digital format. It is my pleasure to present to you the selected abstracts in this on-line publication and again would like to thank the authors for their dedication to furthering scientific research in the field of endoscopy.

Best wishes

Rodrigo Jover,
ESGE Days 2019 scientific committee chair
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OP1 AUTOMATED POLYP DIFFERENTIATION ON COLOSCOPIC DATA USING SEMANTIC SEGMENTATION WITH CNNS

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Aims Interval carcinomas are a commonly known problem in endoscopic adenoma detection, especially when they follow negative index colonoscopy. To prevent patients from these carcinomas and support the endoscopist, we reach for a live assisted system in the future, which helps to remark polyps and increase adenoma detection rate. We present our first results of polyp recognition using a machine learning approach.

Methods We apply convolutional neuronal networks for semantic segmentation of colonicoscopic image data. In particular, we make use of fully-convolutional networks, which are a state-of-the-art technique for segmentation tasks. Furthermore, for the architecture we choose a modified ResNet18. As input, we feed pairs of images to the network, which contain the original image with the polyp and a corresponding binary map, where the spatial information of polyp and background is coded as two classes. After the training process, we observe how the network performs on unknown images. During this validation process we verify the segmentation accuracy of the network.

Results In our experimental results, we demonstrate the overall feasibility for the task at hand. We were able to show a meaningful polyp recognition performance rate. For our experiments, we ran three different setups where we optimized hyperparameters like learning rate, batch size and regularization function. In the quantitative analysis of the performed experiments we reached a pixel-wise validation accuracy of 79%.

Conclusions Due to the promising accuracy results we expect to achieve beneficial polyp detection rates.

In our ongoing research we try to implement a problem-oriented pipeline, which responds to the well-known clinical problem of very few annotated data. In our ongoing research we try to implement a problem-oriented pipeline, which helps to remark polyps and increase adenoma detection rate. We present our first results of polyp recognition using a machine learning approach.

OP2 COMPUTER-AIDED DIAGNOSIS (CAD) BASED ON CONVOLUTIONAL NEURAL NETWORK (CNN) SYSTEM USING ARTIFICIAL INTELLIGENCE (AI) FOR COLORECTAL POLYP CLASSIFICATION

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Aims Computer-aided diagnosis (CAD) is becoming a next-generation tool for the diagnosis of human disease. CAD for colon polyps has been suggested as a particularly useful tool for trainee colonoscopists, as the use of a CAD system avoids the complications associated with unnecessary endoscopic resections. In addition to conventional CAD, a convolutional neural network (CNN) system utilizing artificial intelligence (AI) has been developing rapidly over the past 5 years. We firstly reported to generate a unique CNN-CAD system with an AI function that studied endoscopic images extracted from movies obtained with colonoscopes used in routine examinations (Komeda Y, Handa H et al. Oncology 2017). Here, we attempted a pilot study of this novel CNN-CAD system for the diagnosis of colon polyps.

Methods A total of 92,571 images from cases of colonoscopy performed between January 2010 and December 2017 at Kindai University Hospital were used. These images were extracted from the video of actual endoscopic examinations. They were simply diagnosed as either an adenomatous or non-adenomatous polyp (hyperplastic polyp). The gold standard of endoscopic diagnosis is the pathological results. The number of images used by AI to learn to distinguish adenomatous polyp from non-adenomatous polyp (hyperplastic polyp) was 29,572: 62,999. The size of each image was adjusted to 256 × 256 pixels. A 10-fold cross-validation was carried out. We carried out a pilot study evaluating the 60 cases of colonic polyp that were not learned on AI function.

Results The rate of diagnosis of adenomatous polyps through white-light, NBI and chromoendoscopy observation were 97.5%, 94.8% and 90.1%, respectively. The rate of diagnosis of non-adenomatous polyp (hyperplastic polyps) through white light, NBI and chromoendoscopy observation were 97.9%, 96.5% and 99.5%, respectively.

Conclusions A CNN-CAD system using routine colonoscopy might be useful for the rapid diagnosis of colorectal polyp classification.

OP3 BLI AND LCI IMPROVE POLYP DETECTION RATE AND DELINEATION ACCURACY FOR DEEP LEARNING NETWORKS

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Aims Studies have suggested that polyp detection rates can be improved by using other modalities than white-light imaging (WLI) such as linked-color imaging (LCI) from Fujifilm. Our aim is to evaluate the influence of the modality on polyp detection rate and delineation accuracy of an artificial intelligence (AI) system.

Methods Colonoscopy videos from 120 patients are included with a total of 280 polyps. Shorter video clips containing the first apparition of each polyp are extracted and for each clip, a few frames are annotated by experts. These 758 manual annotations are automatically propagated over the entire clip. The resulting, much larger annotated dataset of 40887 images is then used to train a recurrent convolutional neural network (CNN). Frame-level sensitivity and specificity are reported for evaluation of the detection power of the network. For delineation accuracy, the dice score is used which is a measure for the amount of overlap between a delineation map and its ground truth. The analysis is done for WLI, BLI (blue light imaging) and LCI.

Results Table 1 shows that BLI significantly improves sensitivity, specificity and dice score. Similarly, LCI increases detection performance to a lesser extent, however the LCI Dice score decreases significantly compared to WLI. Pairwise t-tests show that all differences are significant with a p value < 0.00001 (significance level of 0.05).
The choice of modality has a significant impact on the detection and delineation performance of an AI system. We show that our network performs best for both tasks on BLI and that LC1 has a superior detection, but inferior delineation power compared to WLI.

**OP4 ACCURACY OF ARTIFICIAL INTELLIGENCE BASED DECISION SUPPORT SYSTEM COMBINED WITH BASIC CLASSIFICATION IN COLON POLYP DETERMINATION**

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**DOI** 10.1055/s-0039-1681183

**Aims** All colon polyps have to be removed for histological analysis due to regulatory reasons, causing real health care burden. Virtual-chromoendoscopy only in expert hands may be used for real-time diagnosis of polyp characteristics to support resect and discard strategy. In our present study, we aimed to develop an Artificial Intelligence-based Decision Support System (AI-DSS) that can assist the decision of endoscopist in the real-time determination of sub-centimetric polyp’s histology with high accuracy.

**Methods** We enrolled 334 histologically identified colon polyp, having at least one good quality, zoomed and non-zoomed HD image with Blue Light Imaging (BLI) virtual-chromoendoscopy. The images were characterized by an expert endoscopist using BASIC classification, including description of surface characteristics, (pseudo) depression, pit pattern and vessel structure of the polyp (2 – 2.2 – 4 – 3 – 4 variable options). We randomly generated subgroups from polyps to train the multilayered deep learning neural network (test set: 100 hyperplastic/neoplastic (50 – 50%), train set: 234 polyps), then run the training process four-times with different subgroups and two output classes: hyperplastic and neoplastic. The decision is based on the highest softmax value of the output neurons. The training ran for several hundreds of epochs, and we stopped it when the test accuracy reached the best results to prevent overfitting on the training set. We analyzed the result with/without including size and localisation of the polyp (2 – 3 options).

**Results** The maximum accuracy of different training tests were 91, 94.5, 93.75, 88%/87.75, 92.5, 91.5, 88.5% separately with a total 91.81% and 90.06%, with/without including localisation and size information.

**Conclusions** AI-DSS combined with BASIC classification is able to predict the polyp histological dignity with a high accuracy, which could be further increased with higher number of images. This software can support the everyday clinical decision of resect and discard strategy during polypectomy, moreover it can be used by trainee endoscopists.

**OP5 APPLICATION OF DEEP LEARNING NEURAL NETWORK FOR HISTOLOGICAL PREDICTION OF COLON POLYP IMAGES WITH BLI ZOOM TECHNOLOGY**

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**DOI** 10.1055/s-0039-1681184

**Aims** In our present study we aimed to develop an Artificial Intelligence-based Decision Support System (AI-DSS) that can be used to analyze the polyp images in differentiation between neoplastic and non-neoplastic subcentimetric polyps.

**Methods** We enrolled 755 HD images with Blue Light Imaging (BLI) zoom technology of total 334 histologically identified colorectal polyps. We set up 4 subgroups for training and testing with deep learning: A: training and testing set data was selected only from typical polyps, B: training set is made from only typical polyps, and test set is made from typical and atypical polyps, C: training set is made from only typical polyps, and test set is made randomly from the whole set (mixed typical and atypical), D: both train and test set are made of polyps randomly selected from the whole set. Images for the test sets were selected randomly following these criteria. Images from the same polyp were not selected to both train and test set.

**Results** The images went through a pre-process algorithm, and then we trained and tested the neural network. We also assessed which training parameters gave the best test results. The test groups had the following accuracy, sensitivity, specificity, PPV and NPV values to predict adenomatous polyps as follows: Group A: 95%, 96.7%, 93.3%, 93.5%, 96.6%; Group B: 73.6%, 76.5%, 68.4%, 81.3%, 61.9%; Group C: 89.4%, 91.5%, 87.2%, 87.8%, 91.1%; Group D: 73.1%, 76.9%, 69.2%, 71.4%, 75%, respectively.

**Conclusions** This AI-DSS is able to predict the polyp histology with high accuracy, if the neural network is trained on typical images. Accuracy of the algorithm could be further increased with higher number of collected images. Application of Deep Learning Neural Network with BLI zoom virtual-chromoendoscopy provide a potential for real-time endoscopic optical diagnosis of hyperplastic polyps to support resect and discard strategy.

**OP6 COMPUTER-AIDED DIAGNOSIS OF GASTRIC LESIONS USING MAGNIFYING NARROW BAND IMAGING ENDOSCOPY**

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**DOI** 10.1055/s-0039-1681185

**Aims** The aims of this study were to develop and evaluate a computer-aided diagnosis system for histology prediction of gastric lesions using magnifying narrow band imaging (M-NBI) endoscopy.

**Methods** We selected and analyzed 265 endoscopy M-NBI images of gastric lesions from 128 patients who underwent upper M-NBI endoscopy (Olympus Exera GIF Q160Z, Lucera GIF Q260Z). All images were divided into four classes: (1) type A (n = 46): non-neoplastic and non-metaplastic lesions with regular circular microsurface (MS) and regular microvascular (MV) patterns; (2) Type B (n = 90): intestinal metaplasia with tubulo-villous MS and regular MV patterns; (3) Type C (n = 74) neoplastic lesions with irregular MS or MV pattern; (4) artifacts (n = 55). During automated classification quadrant areas were calculated on the image, geometrical and topological features were computed for every fragment. Using the greedy forward selection algorithm, the set of five most significant features were selected: three geometric features (the compactness of the MS pattern, the perimeter of the MS pattern, the average of area of the component of the MV pattern) two topological features (the kurtosis of the histogram of the 0-th persistence diagram of the image, the first norm of the 0-th persistence diagram of the signed distance function). Support vector machine (SVM) classifier was used for 4-class automated diagnosis. Training and testing were performed for every image by a k-fold method (k = 10).
Results The average percentage of correctly recognized areas was 91.4%. Classification precision (positive predictive value), recall (sensitivity), F-score for class A were 96.5 90.4 93.3 for class B were 93.7, 92.0, 92.9, respectively, for class C were 83.3, 91.3, 87.1, respectively, and for artifacts were 99.2, 91.7, 95.3, respectively.

Conclusions The designed system based on the extraction of the geometrical and topological features from M-NBI image and analysis by SVM could provide effective recognition of three types of gastric mucosal changes.

OP7 NEAR FOCUS NARROW BAND IMAGING DRIVEN ARTIFICIAL INTELLIGENCE FOR THE DIAGNOSIS OF GASTROESOPHAGEAL REFLUX DISEASE

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Aims To develop a near focus (NF-NBI) driven artificial intelligence (AI) model for the diagnosis of Gastroesophageal Reflux Disease (GERD).

Methods Patients with symptoms of GERD (recorded using the Reflux Disease Questionnaire (RDQ)) were prospectively recruited over 10 months. Upper endoscopy recorded multiple NF-NBI images, video and biopsies of the lower oesophagus. If endoscopy using High-Definition WLE was normal, a pH-recording capsule was placed. Patients were defined according to Lyon criteria; Erosive oesophagitis (EO); non-erosive reflux disease (NERD); functional heartburn (FH).

Two forms of AI were developed and evaluated to automate regions of interest (ROI) and detect IPCLs and morphology: computer vision (CV) and deep learning.

Results 78 consecutive patients were recruited. n = 68 (46 Female, 44.41+/-12.91 years); GERD n = 27 (EO n = 6, NERD n = 21) and FH n = 41 were analysed. The mean IPCL per ROI count was greater in GERD vs. FH: 33.3+/-5.19 vs. 27.9+/-5.72 p = 0.0002 and was used as the primary diagnostic tool. IPCL morphology for GERD vs. FH: length 16.29 vs. 16.98, p = 0.19; width 7.8 vs. 7.8, p = 0.98; red 118.8 vs. 120.6, p = 0.44; green 110.3 vs. 118, p<0.006; blue 90.95 vs. 96.81 p = 0.0016.

With CV: mean IPCs/ROI (threshold 28.4) had sensitivity, specificity, accuracy 85.2, 58.5, 68.2% for GERD.

With DCNN 50:50 these results were 58%, 86% and 76% respectively. DCNN 75:25 produced 67%, 92%, 83% respectively.

CC improved overall specificity (89.1%) and accuracy (78.1%) but not sensitivity (63%).

Conclusions AI using NF-NBI is a novel method for the diagnosis of GERD. With increased data, improvements in diagnostic accuracy is achieved further improved using a CC. This model has the potential to provide a reliable single-test diagnosis of GERD.

OP8 ARTIFICIAL INTELLIGENCE IN EARLY BARRETT’S CANCER: THE SEGMENTATION TASK

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Aims The delineation of outer margins of early Barrett’s cancer can be challenging even for experienced endoscopists. Artificial intelligence (AI) could assist endoscopists faced with this task. As of date, there is very limited experience in this domain. In this study, we demonstrate the measure of overlap (Dice coefficient = D) between highly experienced Barrett endoscopists and an AI system in the delineation of cancer margins (segmentation task).

Methods An AI system with a deep convolutional neural network (CNN) was trained and tested on high-definition endoscopic images of early Barrett’s cancer (n = 33) and normal Barrett’s mucosa (n = 41). The reference standard for the segmentation task were the manual delineations of tumor margins by three highly experienced Barrett endoscopists. Training of the AI system included patch generation, patch augmentation and adjustment of the CNN weights. Then, the segmentation results from patch classification and thresholding of the class probabilities. Segmentation results were evaluated using the Dice coefficient (D).

Results The Dice coefficient (D) which can range between 0 (no overlap) and 1 (complete overlap) was computed only for images correctly classified by the AI-system as cancerous. At a threshold of t = 0.5, a mean value of D = 0.72 was computed.

Conclusions AI with CNN performed reasonably well in the segmentation of the tumor region in Barrett’s cancer, at least when compared with expert Barrett’s endoscopists. AI holds a lot of promise as a tool for better visualization of tumor margins but may need further improvement and enhancement especially in real-time settings.

OP9 AUTOMATIC GLANDS SEGMENTATION IN HISTOLOGICAL IMAGES OBTAINED BY ENDOSCOPIC BIOPSY FROM VARIOUS PARTS OF THE COLON

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Aims Artificial intelligence is rapidly gaining ground in online detection, endoscopic and morphological characterization of colon epithelial neoplasms. Even for pathologists identification of metaplasia and dysplasia in the epithelium of the mucous glands could be an extremely difficult task. The same task in vivo, directly during the endoscopic examination is no less difficult, therefore the development of auxiliary mathematical models for image recognition is requested.

Methods We propose a new design of a convolutional neural network (CNN) based on U-Net model and use it for mucous glands segmentation. The main distinctive ideas of the proposed CNN lay in the multiscale architecture, using non-local blocks to capture long-range dependencies in the image and using a contour-aware loss function. The network was first trained on the public Warwick-QU dataset with non-linear augmentation process and was afterthat fine-tuned on the manually labeled histological images obtained from paraffin sections of endoscopic biopsy material of the colon.

Results The multiscale architecture of the proposed segmentational CNN makes it less sensitive to the scale of the input image. Due to the specific loss function it is able to detect and separate “stuck” glands. The used non-linear blocks have a positive effect on the time needed for model to converge. Altogether this leads to the accurate segmentation of glands on histology images (Dice coefficient = 0.87 for Warwick-QU dataset, Dice coefficient = 0.83 for the obtained dataset).

Conclusions The generalization ability of the proposed algorithm enables it to effectively segment individual glands as well as to perform inner-gland seg-
mentation (detect nuclei, lumen and cytoplasm) in histological images. The subsequent development of this gland segmentation technology can allow to detect changes in the lumen shape (serration) of glands, in the nuclear-cytoplasmic ratio inside mucus-forming cells, and in the character of the expression of immunohistochemical markers.

OP10 AUTOMATIC POLYP DETECTION IN COLONOSCOPY – GENERAL COMPARISON OF SYSTEM AND VIDEO ANALYSIS STATISTICS

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Zaltshendler M5, Zur D4

Dubravcsik Z3, Madacsy L1

Capsule 1 Club B

Pre-procedural preparation may improve the sensitivity and specificity of the (MACE) as cleaning the mucosa during the procedure is not possible. Better and it is even more important during magnetically assisted capsule endoscopy. Optimal mucosal visibility is essential during gastrointestinal endoscopy.

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5 Magnetic Eye Ltd., Haifa, Israel


Aims The Automatic Polyp Detection System (APDS) was developed to enhance the ability of endoscopists to detect polyps during screening colonoscopy. The aim of this study was to compare performance of the trained system with a known database of 35 video sequences.

Methods The testing database was collected from 12 physicians in 6 endoscopy centers during years 2014–2018. Each of the 35 video sequences represented consecutive frames a half-minute in length. Our goal was to define the best system performance (sensitivity and specificity working point, and the percentage of polyps detected by the system) in at least 3 consecutive frames under a given system specificity. In addition, the number of polyps that were estimated to be missed during the procedure according to a manual analysis of the video sequences was calculated.

Results The best working points of the system over the testing database was 88% sensitivity with 98.7% specificity. For working points with a specificity of 97.5% and below, all polyps in the testing database were detected by the system in at least 3 consecutive frames. On the other hand, according to the manual analysis of the recorded videos, 4 polyps out of the 35 polyps in the testing database (11.4%) were missed by the physicians during the procedures.

Conclusions The endoscopist could be alerted to the presence of a polyp with a specificity of 97.5%. The estimated miss rate of the physicians of polyps correlates with research work that showed a reduction in the miss rate when using behind folds imaging techniques. The use of the APDS can contribute to the reduction of the miss rate of polyps in daily clinical practice.

OP11 A NEW PREPARATION METHOD FOR IMPROVING GASTRIC MUCOSAL VISIBILITY AND CLEANLINESS DURING MAGNETICALLY ASSISTED CAPSULE ENDOSCOPY: A PROSPECTIVE STUDY

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Aims Optimal mucosal visibility is essential during gastrointestinal endoscopy and it is even more important during magnetically assisted capsule endoscopy (MACE) as cleaning the mucosa during the procedure is not possible. Better pre-procedural preparation may improve the sensitivity and specificity of the MACE investigation. The aim of the current study was to compare the cleanliness of the stomach with or without our new gastric preparation protocol.

Methods We performed a prospective study. 30 patients received our new gastric preparation protocol (Group A; 46.4 years; 50% female). Another 30 patients without gastric preparation served as controls (Group B; 47.1 years; 33.3% female). The same preparation protocol was used on the previous day (24 hours liquid diet, two doses of PEG). Group A received 200 mg simethicone 40 minutes, 40 mg prunace B and 1 mg sodium-bicarbonate 30 and 20 minutes before MACE, then patients were laid down and rotated every 5 minutes in 90 degrees increments around their axis, finally 600 ml clear water was given directly before swallowing the capsule. Group B had simethicone only before swallowing the water and the capsule. Typical pictures from the fundus, body and antrum were analyzed with a self developed software calculating the proportion of clean and covered surfaces of gastric mucosa.

Results The average proportion of covered areas were 7.26%-12.32% (fundus), 3.36%-9.22% (body) and 0.31%-6.14% (antrum) in group A vs. B respectively. The differences were statistically significant in all and more pronounced in body and antral regions (p = 0.0053, 0.0012 and 0.0321 in body, antrum and fundus, respectively).

Conclusions The visibility and cleanliness of the whole gastric mucosa in our study could be significantly improved with specific gastric preparation. Therefore, we suggest our combined preparation protocol with simethicone and prunace to optimize the diagnostic performance of gastric MACE.
OP13 IMPACT OF PILLCAM CROHN’S CAPSULE ON DIAGNOSTIC YIELD AND CLINICAL MANAGEMENT: RESULTS OF THE FIRST MULTICENTER, OBSERVATIONAL STUDY

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Aims A capsule endoscopy (CE) system tailored for Crohn’s disease (CD) patients has been recently developed. This new device features two advanced optics allowing a 344°-view between both capsule heads and a prolonged operative time, to provide the direct visualization of the entire digestive tract. The present study has evaluated, for the first time, the performance of the PillCam Crohn’s System in a multi-center real-life setting.

Methods Consecutive patients with suspected or established CD were included between June 2017 and June 2018. Technical and clinical data, including the Lewis score and capsule impact on clinical management, were collected, thereby evaluating the added value of the 344° panoramic-view over the standard 172°-view.

Results Among 41 patients (16 men; aged 43 ± 20 years), 73% underwent CE for suspected CD and 27% for established CD, with a mean time lapse of 12 years from diagnosis. The rate of complete enteroscopy was 90%. No technical failure or retention occurred. CE detected relevant lesions in 56.1% of patients, a Lewis score > 135 in 51.4%, and had an impact on clinical management for 48.8% of patients. Compared to the standard 172°-view, the panoramic 344°-view revealed a greater number of patients with a relevant lesion (56.1% vs. 39.0%; P = 0.023), resulting in higher Lewis score (222.8 vs. 185.7; P = 0.031), and improved clinical management (48.8% vs. 31.7%, P = 0.023).

Conclusions The panoramic 344°-view improves both CE accuracy and the resulting clinical management of CD. This system should be regarded as a new standard for both small-bowel disease and inflammatory bowel diseases monitoring.

OP14 SMALL BOWEL ANGIOECTASIAS REBLEEDING AND THE IDENTIFICATION OF HIGHER RISK PATIENTS

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Aims Small Bowel Capsule Endoscopy (SBCE) is the gold standard in Mid-gastrointestinal bleeding (MBG). Angioectasias are the most common vascular anomalies in the GI tract and considering their frequency, their usual intermittent bleeding nature and their risk of rebleeding, the aim of this study was to identify some characteristics and possible predictors of rebleeding in the presence of these lesions.

Methods Retrospective study, which included consecutive SBCE with angioectasias between 2008 and 2018 with a minimum follow up of 12 months. Rebleeding was defined when a drop of hemoglobin ≥2 g/dl (occult) was observed and/or in the presence of hematocrit or melena (overt) with negative esophagogastroduodenoscopy and ileocolonoscopy. Data were collected from medical records: patients’ age, gender and comorbidities and use of antiplatelets and/or anticoagulants. Angioectasias were classified by number, location, size and type according to Yano-Yamamoto Classification. Univariate and multivariable statistical analyses were performed to identify possible predictors of rebleeding.

Results From a total of 630 patients submitted to SBCE for suspected small bowel bleeding, 129 with angioectasias were included, 59.7% female, with median age of 72 (19–91) years and a mean follow up of 44.0 ± 31.9 months. 88 patients (68.2%) performed SBCE for occult and 41 (31.8%) for overt gastrointestinal bleeding. In 32.6% of the patients at least one episode of rebleeding was documented.

In univariate analysis, patients presenting with rebleeding were older (74.2 vs. 67.9 years; p = 0.021), and were more frequently diagnosed with chronic kidney disease (44.4% vs. 26.2%; p < 0.035) and heart failure (HF) (51.9% vs. 19.5%; p < 0.001). Regarding the characteristics of angioectasias, patients that rebled had more frequently angioectasias of larger size (> 5 mm) (69% vs. 27.6%; p < 0.001). In multivariate analysis we identified the presence of HF (OR 3.3; IC95% 1.3–8.6; p = 0.014), and the size of the angioectasias (OR 4.9; IC95% 2.1–11.4; p < 0.001) as independent predictor factors for risk of rebleeding.

Conclusions HF and angioectasias with size superior to 5 mm are the independent predictor factors of rebleeding in a population with angioectasias diagnosed by SBCE.

OP15 POOR QUALITY OF CAPSULE ENDOSCOPY IMAGES HAS A SIGNIFICANT NEGATIVE EFFECT ON THE DIAGNOSIS OF SMALL BOWEL MALIGNANCY

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Aims Capsule endoscopy (CE) diagnosis relies on image quality, commonly affected by poor preparation. Currently, there is no widely-accepted method for quantifying visualisation quality. We examined the contribution of image parameters to visualisation quality and their effect on diagnostic certainty of small bowel (SB) lesions.

Methods Five clear CE images of SB pathology were processed for 3 parameters to simulate increasingly poor SB preparation:

▪ opacity (colour-matched to luminal content; 10–90%, 10% increments),
▪ blurriness (radius 1–10px; 1px increments), and
▪ contrast (-50–50%; 10% increments).

9 experts evaluated whether images were adequate for diagnosis. Points where perception of image quality changed significantly were determined for each parameter. Three further sets of SBCE images (vascular, inflammatory and malignant lesions) were processed for 4 points per parameter. 20 experienced-expert CE readers reviewed the resulting images.

Results In vascular and inflammatory lesions, diagnostic certainty was least affected by increasing image opacity, requiring opacities >90% before most readers considered images inadequate for diagnosis. The greatest negative effects of image opacity were seen in malignancies where significantly fewer readers found images adequate at >50% opacity. Similar results were obtained with increasing blur radius, simulating motion blur and poor focus. The proportions of readers finding vascular and inflammatory images adequate did not drop significantly at wider blur radii, while the proportion who found images of malignancies dynamically adequate dropped at blur radius 6px. Decreasing contrast had greater negative effect than increased contrast, most obvious in malignant lesions.

Conclusions Poor visualisation quality in all parameters had the greatest effect on images of malignant lesions. Software to increase contrast and sharpen images can improve visualisation quality; smart frame rate adaptation could also improve the number of high-quality frames obtained. Furthermore,
our results suggest that thoroughness in SB cleansing is most important when there is suspicion of malignancy, so as to improve diagnostic certainty from the images obtained.

OP16 DOUBLE-HEADED SMALL BOWEL CAPSULE ENDOSCOPY: REAL-WORLD EXPERIENCE AT A TERTIARY REFERRAL CENTRE

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Aims Capsule endoscopy (CE) is a well-established mode of investigation for small bowel (SB) pathology. This study aims to characterise the potential benefits of using double-headed capsules (vs conventional single-headed ones) in a real-world cohort of patients referred for CE. We present initial results from a single centre as part of a multicentre British study.

Methods Over a 9-month study period, patients referred for routine SBCE at a tertiary referral centre underwent double-headed CE in lieu of conventional single-headed CE. Clinical data were anonymised. One head (left or right) was chosen at random and reported by an expert reviewer. After an interval of 4 weeks, the other heads, also anonymised and in random order, were read and reported by the same reviewer. For each CE examination, the numbers and types of findings, and overall conclusion/diagnosis were compared between L/R heads.

Results In total 98 CE examinations were performed. There were 3 stomach retentions, therefore 95 cases were analysed. Indications were:

1. SB bleeding (n = 53);
2. suspected SB inflammation or reassessment of known inflammatory bowel disease (IBD) (n = 28);
3. suspected SB malignancy (n = 8) and
4. others (n = 6).

The findings for each group are as follows:

1. 14/53 (26.4%) patients had differences in findings between L/R heads. The differences changed diagnosis in 6 (11.3%) patients.
2. 12/28 (42.9%) patients had differences between L/R heads, which changed diagnosis in 4 (14.3%) patients.
3. 1/8 (12.5%) patient had differences between L/R heads which changed the diagnosis in this patient.

Overall, use of two CE heads impacted the diagnosis in 11/95 (11.6%) of cases in our cohort.

Conclusions:
- Conventional single-headed CE has a relatively high proportion of negative examinations, often leading to multiple and repeated investigations in patients referred for suspected SB pathology.
- Use of double-headed CE provides more information which has potential to change clinical diagnosis and therefore management.

OP17 SINGLE-CENTRE EXPERIENCE USING UPPER GASTROINTESTINAL (UGI) CAPSULE AS AN ALTERNATIVE TO DIAGNOSTIC GASTROSCOPY

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Aims The demand for diagnostic upper gastrointestinal (UGI) endoscopy is high, often exceeding the resources. UGI capsule has already been shown to be an effective diagnostic tool to detect UGI diseases but its cost effectiveness has not been investigated yet. The aim of this study was to evaluate the diagnostic ability and costs of UGI capsule.

Methods This is an observational study of patients who had a UGI capsule endoscopy between April 2017 and November 2018 at Guy’s and St Thomas’ Hospital. Patients swallowed the UGI capsule (ESO3, Medtronic) following ingestion of 1 liter of water (containing simethicone). A series of positional changes were used to facilitate the UGI capsule transit. Indications for the procedure, quality indicators and findings were evaluated.

Results 76 patients were included in the study: 55 preferred capsule, 1 was not suitable for a gastroscopy, 10 failed gastroscopy and 10 would require general anesthesia. Regarding the indications, the majority had heartburn (30%) followed by abdominal pain (22%) and iron deficiency anemia (15%). The UGI capsule reached D2 in 73% of patients. Ampulla pick up rate (13.5%), incisura, fundus and cardias pick up rates (100%), inlet patch pick up rate (9.5%) were considered as quality indicators. The following findings were reported: 34 normal, 15 gastritis, 9 fundic glands polyps, 7 oesophagitis, 3 hiatus haemia, 1 Barrett’s. Of note, only 4 (5%) needed a gastroscopy thereafter (further assessment/biopsies). In the majority of UGI capsules the results were conclusive. UGI capsule costs have been estimated around £412 per procedure. The tariff for one procedure is £970 (total earned £557). In comparison, a gastroscopy costs approximately £66 per procedure with a tariff of £341 (total earned £275).

Conclusions UGI capsule is a potential, non-invasive, cost-effective alternative to diagnostic UGI endoscopy. Further improvement are needed to increase ampulla pick up rate and completion rate.
OP19 CAPSULE RETENTION IN CROHN DISEASE: A META-ANALYSIS

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Aims To evaluate capsule retention rates in adult and pediatric Crohn disease (CD) and determine if retention risk can be reduced in established CD (ECD) with patenty capsule (PC) or dedicated small bowel (SB) cross sectional imaging (MR/CT enterography) using meta-analysis.

Methods Publications were identified in MEDLINE, EMBASE, Cochrane Database of Systematic Reviews, and Web of Science for studies of CD patients undergoing capsule endoscopy (CE) that reported retention. The retention rate and relative risk (RR) of retention in CE to suspected CD (SCD) was estimated for each study. The pooled estimates for the various capsule retention rates and for RR were also calculated. All hypothesis tests were two-sided with p < 0.05 considered statistically significant.

Results Retention rates were 0.03 (95% CI 0.03 – 0.04) in the overall CD cohort, 0.05 (95% CI 0.03 – 0.06) in ECD, and 0.02 (95% CI 0.01 – 0.04) in SCD. The retention rates in adult and pediatric studies were 0.03 (95% CI 0.03 – 0.04) and 0.02 (95% CI 0.01 – 0.04), respectively. Retention risk in adult ECD was 3.50 times higher than SCD (95% CI 2.12 – 5.78). There was no difference in retention risk in pediatric ECD compared with SCD (RR 4.92; 95% CI 0.80 – 30.08). Retention rates in ECD were decreased to 0.02 (95% CI 0.01 – 0.06) after cross-sectional imaging, and 0.03 (95% CI 0.02 – 0.05) after negative PC.

Conclusions Our meta-analysis shows lower CE retention rates in both SCD and ECD compared to older literature. The retention rate in adult ECD was significantly higher than adult SCD. In patients with ECD, retention rates were lower after negative PC or cross-sectional imaging. Retention rates in pediatric CD were lower than adult CD, and in contrast to adults, there was no difference in retention rates between pediatric ECD and SCD.

OP20 MAPPING THE DISTRIBUTION OF SMALL BOWEL ANGIOECTASIAS

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Aims Angioectasias are the main cause of small bowel (SB) bleeding. They are frequently identified during capsule endoscopy (CE). Subsequent management depends upon severity/extent and location. There is mounting evidence that the location of SB angioectasias is not entirely random. We aimed to map the distribution and size of SB angioectasias, and assess whether this impacted clinical outcomes significantly.

Methods Retrospective study examining CEs performed over a 10-year period at a tertiary referral centre. Information regarding number, location, and Saur classification (PO – 2) of SB angioectasias were collected. Clinically significant angioectasias (P1/P2) and active SB bleeding were analysed. Clinical outcomes in patients with P2 angioectasia or active SB bleeding were recorded.

Results 164 SBCE examinations in our cohort reported angioectasias. 554 P1 – 2 angioectasias and areas of active bleeding were seen, 435 (78.52%) of these within the first tertile of SB transit time (SBTT). 277 (50%) angioectasias were identified within the first 10% of SBTT. 40/75 (53.3%) patients with > 1 P2 angioectasia and/or active bleeding were referred for intervention. Of the initial interventions, 24 patients underwent upper GI endoscopy; 13 underwent double balloon enteroscopy (DBE) (12 oral, 1 anal route). 9/37 (24.3%) had no identifiable angioectasias on endoscopy. Of those receiving ablative therapy, 20/28 (71.4%) re-presented with iron-deficiency anaemia or bleeding. In this group, average angioectasia position was within the first 15.6% of SBTT, compared with 7.9% in those who did not re-present (p = 0.3442). Patients who re-presented had an average 1.6 additional P1 angioectasias, compared with 7.6 amongst those who did not return (p = 0.0173).

Conclusions Clinically significant angioectasias are overwhelmingly located within the first 30% of SB. The majority are within reach of conventional endoscopy. However, AEIs are often multiple and patients often re-present following intervention. In our cohort, additional P1 angioectasias in patients with P2 angioectasias/active bleeding were not associated with increased bleeding.

OP21 LYMPHOVASCULAR INFILTRATION IS A HIGH RISK FACTOR FOR LYMPH NODE METASTASIS INDEPENDENT OF DEPTH OF INVASION IN T1 COLORECTAL CANCERS

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Aims Depth of submucosal invasion is commonly used to predict risk for lymph node metastasis in T1 colorectal cancers although published data are conflicting on the risk of metastasis in relation to level of submucosal growth. The aim of this study was to identify risk factors for lymph node metastasis in T1 colorectal cancers.

Methods Data on all patients with T1 colorectal cancer undergoing surgical resection between 2009 – 2017 were collected from the Swedish Colorectal Cancer Registry. Potential risk factors for lymph node metastasis, including age, gender, tumour location, submucosal invasion (Sm1 – 3), grade of differentiation, lymphovascular invasion, perineural invasion, tumour deposits and mucinous subtype were recorded. Patients lacking one of these factors were not included.

Results 991 patients (51% male) were included with median age of 72 years. 110 patients (11%) had lymph node metastasis in the surgical specimens. The overall incidence of lymph node metastasis was 8% (26/314) in Sm1, 12% (28/231) in Sm2 and 13% (56/446) in Sm3. In the absence of lymphovascular infiltration, the rate of lymph node metastasis was 6% in Sm1, 9% in Sm2 and 13% in Sm3. Notably, the incidence of lymph node metastasis markedly increased to 40% (37/92) in cases with lymphovascular infiltration regardless of Sm classification. Presence of tumor deposits (14 cases) and perineural invasion (15 cases) also increased the rate of metastasis but the numbers of these cases were too few for solid conclusions. Grade of differentiation and mucinous subtype had only a minor impact on the incidence of lymph node metastasis (16%).
Conclusions This is the largest study in the literature examining risk factors for lymph node metastasis in T1 colorectal cancers. Our results show that depth of submucosal invasion has limited influence and that lymphovascular infiltration is the most important risk predictor for lymph node metastasis in T1 colorectal cancers.

OP22 INVASIVE RECURRENCE RATE AND CLINICOPATHOLOGICAL FEATURES AFTER ENDOSCOPIC RESECTION FOR 591 T1 COLORECTAL CANCERS

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Aims Recent studies reported that invasion depth only has no clinical impact to lymph node metastasis (LNM) of colorectal cancer (CRC). Several recurrent cases have been reported, however, after endoscopic resection for T1b (SM deep) CRC without any unfavorable histological factors. We, therefore, aim to investigate the recurrence rate and clinicopathological features associated with invasive recurrence after endoscopic resection for T1 CRC.

Methods A total of 516 patients (591 lesions) with T1 CRCs treated by endoscopic resection (ER) between January 2000 and December 2017 at NCCH were analyzed retrospectively. We evaluated the invasive recurrence (distant metastasis and invasive cancer recurrence) rate and clinicopathological features of primary CRC.

Results The invasive recurrence rate for overall T1 CRC was 2.9% (17/591), while that of T1b CRC was 4.7% (15/317). Among them, 139 T1b CRC patients showed any other unfavorable histological factors, but five patients (3.6%) showed invasive recurrences. In these 139 patients, 87 patients (64%) underwent surgery within 3 months, and 3 of 87 (3.4%) showed invasive recurrences (two lungs, one liver). On the other hand, 52 patients (37%) were followed-up without surgery, and 2 of 52 (3.8%) showed invasive metastasis (one lung with local, and one liver with local). The median period from ER to diagnosis of recurrence was 45 months (range, 6–73 months) in surgery group and 30.9 months (range, 0–175 months) in non-surgery group. All of five cases were resected by en-bloc ER with VM0. Three were well differentiated adenocarcinoma, 2 were well and moderately differentiated adenocarcinoma, originally. The median depth of invasion was 1250 mm (range, 1000–7500 mm). The interruption of muscularis mucosae was seen in four cases and abscess formation in one.

Conclusions The invasive recurrences for T1b CRC was 4.7% overall and 3.6% for T1b without any unfavorable histological factors. This recurrence rate was similar in patients with and without surgery.

OP23 SMSA SCORE FOR COLORECTAL ENDOSCOPIC SUBMUCOSAL DISSECTION (CR-ESD): IS IT USEFUL FOR PLANNING RESOURCES OR PREDICTING PROCEDURAL OUTCOMES? A MULTICENTER SPANISH PROSPECTIVE STUDY


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Aims To assess the ability of SMSA to predict clinical outcomes of CR-ESD: length of the procedure and percentages of piecemeal resections, aborted procedures and complications.

Methods Consecutive patients were enrolled in a prospective multicenter Spanish CR-ESD registry since January 2016 to October 2018. We analyzed 585 cases in 19 hospitals.

Results The duration of the procedure was >240 min in 36 ESDs (6.2%). There were 13 aborted procedures (2.2%), 92 piecemeal resections (16.1%), 86 intraprocedural perforations (14.7%), 19 delayed perforations (3.4%) and 37 delayed bleedings (6.6%). There were 40 SMSA2 (6.8%), 189 SMSA3 (32.3%) and 356 SMSA4 (60.8%) lesions. The median procedure duration was 74.5 min for SMSA2, 80 min for SMSA3 and 120 min for SMSA4. A statistically significant association was observed for SMSA4 and duration of the procedure >240 min (8.4% vs. 2.6%; OR = 3.4; CI95%: 1.4–8.3; p = 0.004). The percentage of piecemeal resections was as follows SMSA2: 27.5% vs. SMSA3: 11.4% vs. SMSA4: 17.2%; p = 0.03. SMSA2 lesions were significantly associated with piecemeal resections (SMSA2 vs. SMSA3/4: 27.5% vs. 14.8%; OR = 2.1; CI95%: 1.01–4.4; p = 0.04). No significant differences were noted for aborted ESDs: SMSA2: 0% vs. SMSA3/4: 27.5% vs. SMSA4: 22.2%; p = 0.59. Statistically significant differences were observed between intraprocedural perforations and SMSA3/4 lesions (SMSA2 vs. SMSA3/4: 2.5% vs. 15.6%; OR = 7.2; IC95%: 1.01–53.1; p = 0.02). The delayed perforation rate was: 0%/2.7%/4.2%; p = 0.3 and the delayed bleeding rate: 8.1%/5.9%/6.8%; p = 0.8, respectively.

Conclusions The SMSA score may be useful for planning endoscopy lists since it significantly correlates with the length of the procedure. Higher scores were also associated with intraprocedural perforations. However, we did not find a direct proportional link when considering other procedural outcomes (piecemeal resections, aborted procedures and delayed perforation or bleeding).
OP24 ENDOSCOPIC SUBMUCOSAL DISSECTION OF RECTAL SUPERFICIAL TUMORS WITH A NEW ENDOSCOPIC PLATFORM: THE ORISE TISSUE RETRACTOR SYSTEM. A MULTICENTER EUROPEAN SERIES

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Aims Endoscopic submucosal dissection (ESD) is accepted worldwide for resection of most superficial tumors >20 mm in the GI. The main challenges of ESD are related to the instability of the operative field and the lack of tissue traction. The ORISE Tissue Retractor System (TRS, Boston Scientific) is a new endoscopic platform designed to overcome these limitations. Aim of this study is to assess the efficacy and safety of the TRS used in the first human procedures in three different European centers.

Methods The TRS consists of an expandable intra-luminal chamber mounted on a flexible overtube with two grasping retractors. It is front-loaded over the endoscope and inserted into the rectum. The cage is then opened to create a stable operating field around the lesion. The submucosal dissection is simplified by two grasping retractors in order to provide traction and improve visualization of planes. Data on lesion characteristics, procedure details and adverse events were collected and analyzed.

Results Data are available on the first 10 cases of rectal ESD (5 males/4 females, mean age 67 ± 9 years). The mean size of the lesions was 56.7 ± 25.1 mm (range 25 – 100 mm). TheTRS and graspers were easily placed in all cases; mean procedure time was 107.11 ± 31.3 minutes. All lesions were removed en-bloc with an R0 resection. The final histological assessment was LGD in 1 case, HGD in 7 and adenocarcinoma in 2. All but one were curative resections. No adverse events were recorded, except 1 case of self-limited fever during the first 24 hours.

Conclusions The ORISTERS both stabilizes the operative field and allows for tissue retraction, thus improving visualization of the dissection plane, potentially increasing the efficiency of the ESD and reducing the risk of adverse events. Although prospective studies are needed, this initial human experience shows the TRS be a promising tool for the treatment of colorectal neoplastic lesions.

OP25 RECURRENCE AND CANCER-SPECIFIC MORTALITY DURING FOLLOW UP OF LOW-AND HIGH-RISK ENDOSCOPICALLY RESECTED PT1 COLORECTAL CANCELS: A META-ANALYSIS

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Aims Oncological radicality of endoscopic resection of pT1 colorectal cancers (CRCs) is still under debate. Need for subsequent surgery is defined by histopathological factors associated to increased risk of lymph-node metastasis. Data describing this risk are heterogeneous and based on small retrospective surgical series, while follow-up data of non-surgically resected lesions are poorly reported, resulting in a great variability in management of these patients.

Our aim was to meta-analyze recurrence and cancer-specific mortality (CSM) occurring during follow-up of patients with low- and high-risk endoscopically resected pT1-CRCs undergoing a conservative follow-up.

Methods The protocol was registered in PROSPERO (CRD-42018110402). PubMed was searched until September 2018 for studies describing patients with pT1-CRCs, classifiable as low- or high-risk according to current knowledge, who were endoscopically resected without complementary surgery and underwent follow-up for at least 12 months. PROSMRA methodology was used. Pooled cumulative incidence (and incidence rate when specific follow-up intervals were available) of recurrence and CSM were calculated separately for low- and high-risk pT1-CRCs. Quality, publication bias and heterogeneity were explored.

Results Pooled cumulative incidence of recurrence and CSM among high-risk lesions (6 studies, 586 patients) was respectively 10.4% [95% CI: 7.1–15.1%; I²: 51.8%] and 4.1% [CI: 2.7–6.2%; I²: 0%]; while among low-risk lesions (6 studies, 529 patients) recurrence and CSM were respectively 1.3% [CI: 0.6–2.8%; I²: 0%] and 0.8% [CI: 0.3–2.1%; I²: 0%]. Pooled incidence rate of recurrence and CSM among high risk lesions (3 cohorts, 237 patients) was 11 [CI: 2.0–20; I²: 43.3%] and 4 per 1000 patient-years [95% CI: 1.7–7; I²: 0%] respectively, while among low risk lesions (3 cohorts, 229 patients), recurrence and CSM was 3 [CI: 0.6–6; I²: 0] and 2 per 1000 patient-years [95% CI: 0–4; I²: 0%] respectively. No publication bias was found.

Conclusions Among patients with endoscopically resected pT1 CRCs, available data warrants a conservative approach for low-risk patients. In high-risk patients, advanced age or increased surgical risk may justify a prudent management.
Among them, one patient (4.8%) experienced postoperative perforation associated with acute appendicitis and was successfully resolved by an alternative surgical therapy. There was no death, nor any stoma reported in our series.

Conclusions DCT-ESD is effective and safe for lesions developed in appendiceal orifice. A surprisingly large amount of curative resection was accomplished with just endoscopic procedure alone.

**OP27** PREDICTING ADVERSE CLINICAL OUTCOMES FOR COLORECTAL ENDOSCOPIC SUBMUCOSAL DISSECTION (CR-ESD): SMSA VERSUS A NEW EXPERIENCE-LESION SCORE. A MULTICENTER SPANISH PROSPECTIVE STUDY

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**Aims** To develop a new preoperative model to improve the ability of the SMSA score to predict adverse clinical outcomes of CR-ESD: duration of the procedure > 240 min., piecemeal resections, aborted procedures and complications (intraprocedural and delayed perforations and delayed bleedings).

**Methods** Consecutive patients were enrolled in a prospective multicenter Spanish CR-ESD registry since January 2016 to October 2018. We analyzed 585 cases in 19 hospitals. The overall ability of both scores to discriminate between those who developed adverse outcomes and those who did not was assessed by the area under the ROC curve.

**Results** Overall, 221 cases developed any of the predefined adverse outcomes. The AUROC of the SMSA score >= 3 was 0.51 (CI95%: 0.46 – 0.55).

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**S13**
OP29 COLONIC ENDOSCOPIC SUBMUCOSAL DISSECTION USING MASTER ROBOTIC SYSTEM – A PRECLINICAL STUDY

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Aims One of the difficulties in performing endoscopic submucosal dissection (ESD) is the lack of retraction during submucosal dissection. The development of master and slave transluminal endoscopic robot (MASTER) aimed to enhance safety and efficacy of ESD through two flexible robotic arms for tissue retraction and dissection. This is a preclinical animal study to evaluate performance of colorectal ESD using latest version of MASTER.

Methods The latest version of MASTER consisted of an independently designed flexible platform with build-in imaging system and working channels for passage of robotic arms [Figure 1]. In this animal study, outcome measures included operating time (from starting incision to finishing dissection), completeness of resection, procedure-related complications as well as limitation of arms manipulation in narrow working space.

Results A total of 5 colorectal ESD procedures were performed in a 66.7 kg porcine model under general anesthesia. The mean operative time was 73.8 minutes, and size of specimen resected was 1340 mm². There was no perforation while profuse bleeding was encountered during one procedure. Hemostasis was achieved after adequate exposure of bleeding arteriole by retracting the mucosal with robotic arm. The en-bloc resection rate was 100%.

Tab. 1 Outcomes of Colorectal ESD using MASTER in porcine model

<table>
<thead>
<tr>
<th>Procedure</th>
<th>OT time:</th>
<th>Dissection time:</th>
<th>Specimen size</th>
<th>Complication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sigmoid (36 cm from verge)</td>
<td>68 mins</td>
<td>35 mins</td>
<td>35 x 35 mm</td>
<td>No</td>
</tr>
<tr>
<td>Rectum (5 cm from verge)</td>
<td>46 mins</td>
<td>45 mins</td>
<td>50 x 45 mm</td>
<td>No</td>
</tr>
<tr>
<td>Sigmoid (24 cm from verge)</td>
<td>10 mins</td>
<td>25 mins</td>
<td>25 x 25 mm</td>
<td>No</td>
</tr>
<tr>
<td>Sigmoid (36 cm from verge)</td>
<td>158 mins</td>
<td>60 mins</td>
<td>40 x 50 mm</td>
<td>Intra-procedural bleeding</td>
</tr>
<tr>
<td>Sigmoid (24 cm from verge)</td>
<td>79 mins</td>
<td>30 mins</td>
<td>20 x 30 mm</td>
<td>No</td>
</tr>
</tbody>
</table>

Conclusions This study confirmed the feasibility and safety in performing ESD using MASTER system in porcine colon. This provided an important preclinical experience for the conduction of clinical trial.

OP76 PATHOLOGICAL “SECOND-LOOK” SIGNIFICANTLY ALTERS CLINICAL MANAGEMENT IN ENDOSCOPICALLY RESECTED PT1 COLORECTAL CANCER

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Aims Clinical management of endoscopically resected pT1 colorectal cancers (CRC) is still under debate. Guidelines prudently suggest subsequent surgery in presence of one or more histological factors linked to increased risk of LNM, but a great variability in histological analysis, LNM rates and clinical management has been reported. Lack of standardization and interobserver variability in reporting histological factors may explain this heterogeneity. This kind of pitfall has been overcome in surveillance of Barrett’s Esophagus, with systematical pathological second opinion, recommended by international guidelines. In pT1-CRC, pathological second opinion is rarely reported, although “European CRC screening Guidelines” suggest its employment, especially when surgical resection is considered. Main aim of our study was to assess how second opinion of an expert GI pathologist may affect clinical management of pT1-CRC.

Methods We reviewed data of 83 patients undergoing primary endoscopic resection of pT1-CRC in our center from June 2006 to December 2017. Clinical, histopathological, endoscopic, eventual subsequent surgery and follow up data were collected. Pathological specimens were recovered, and evaluated by a second GI pathologist, blinded to the primary diagnosis. When uncertain, opinion of a third pathologist was sought to achieve a final diagnosis.

Results Of 83 pT1-CRCs resected endoscopically, second-look modified diagnosis in 16/83 (19,2%) patients, seemingly exposing them to suboptimal clinical choices. In 9/16 patients that were originally classified as harbouring a low-risk poly, at least one overlooked histological risk factor was found, shifting them in high-risk group, with a much higher risk of LNM. By contrast, 7/16 polyps were downgraded to low-risk, as second-look did not encounter any risk factor, potentially exposing them to unnecessary surgery.

Conclusions Almost 20% of endoscopically resected pT1-CRCs in daily clinical practice would benefit by histopathological second-look, that can significantly modify clinical management, and permit a more accurate risk stratification. Systematic implementation of this practice may be ausplicable.

Friday, April 5, 2019 08:30 – 10:30

ERCP stones

Club H

OP30 IS ENDOSCOPIC BALLOON DILATION STILL ASSOCIATED WITH HIGHER RATES OF PANCREATITIS? A COMPREHENSIVE SYSTEMATIC REVIEW AND META-ANALYSIS

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Aims Evaluate effectiveness and safety of endoscopic balloon dilation compared with sphincterotomy or with endoscopic balloon dilation plus sphincterotomy in patients with common bile duct stones.

Methods We searched MEDLINE, EMBASE, CENTRAL up to September 2018 and selected only randomized controlled trials (RCTs). Two investigators independently conducted data extraction, and risk of bias. Summary effect sizes were estimated using risk difference with fixed effects model. Heterogeneity was assessed with the Higgins’ test (I²). If I²>50%, we analyzed forest plot in an attempt to identify a study with a higher likelihood of outlier publication or we considered a random-effect model.

Results Twenty-five randomized controlled trials, enrolling a total of 3347 patients met our inclusion criteria. EPBD x EST. EPBD was associated with lower bleeding and higher pancreatitis and severe pancreatitis rates. Perforation and cholangitis incidence was similar in both groups.

We carried out subgroup analysis by stratifying the balloon size and observed that higher incidences of PEP was seen in the studies which performed dilation with balloons smaller than 10 mm (RD = 0.05; IC [0.03, 0.08]; I² = 52%; P < 0.0001) than balloons ≥ 10 mm (RD = -0.01; IC [-0.04, 0.02]; I² = 31%; P = 0.52).

EPBD x EPLBD+EST.
In this analysis 456 patients were enrolled and almost none heterogeneity was observed. Both techniques had almost the same safety and achieved similar rate of complete retrieval in the first ERCP attempt. EPLBD × ES and EPLBD+EST. Finally, we made an analysis comparing balloon dilation versus both techniques, considering only patients who underwent dilation with balloons equal or bigger than 10 mm. No significant differences were found in PEP. The results of our meta-analysis showed that the pancreatitis rate is higher in EPBD compared to EST. However, when considering only balloon ≥10 mm, this difference disappeared. Moreover, PEP rates was also not higher when comparing EPLBD versus EPBL plus EST.

**OP31 A MULTICENTER RANDOMIZED TRIAL OF LASER VERSUS ELECTROHYDRAULIC LITHOTRIPSY FOR DIFFICULT BILE DUCT STONES**

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**DOI** 10.1055/s-0039-1681211

**Aims** Firstly, difficult bile duct stones were removed by mechanical lithotripsy. But, if this fail, the electrohydraulic (EHL) or laser lithotripsy (LL) could be performed. We performed the first prospective randomized controlled study to compare the efficiency and safety of LL and EHL in multicenter of South Korea.

**Methods** Between 2014 and 2016, a total of 122 patients who underwent LL or EHL was enrolled from 12 centers. All patients had failed to remove stones by conventional endoscopic stone extraction method including mechanical lithotripsy because huge stone, inaccessible major duodenal papilla, or intrahepatic bile duct (HID) stone. For laser lithotripsy, we used holmium laser technology. Main outcome measures included complete stone clearance, procedure times and post-procedure complications.

**Results** Thirty one patients received LL and 33 received EHL. Those in the LL treatment were older, had longer procedure times (EHL:33.3±13.8 min, LL 47.9±25.7 min, P = 0.006). There were no significant differences in stone size (EHL 15.0±7.6 mm, LL 13.1±4.4 mm, P = 0.235), number of session (EHL 2.4±1.1, LL 3.0±1.6, P = 0.113), stone location between the two treatment groups. Rate of complete clearance (EHL 90.9%, LL 96.8%, P = 0.333) and complications (EHL 15.2%, Holmium 19.4%, P = 0.656) were not different between the groups. Main complications included bleeding (n = 3), infection (n = 7), and pancreatitis (n = 1), although there were no differences in complications between the two treatments, and no severe complications were observed. Recurrence rate was 22.6% (14/62), although no differences were seen in either LL or EHL treatment groups (EHL 57.1%, Holmium 42.9%, P = 0.638). HID stone was significantly associated with recurrence compared to common bile duct (CBD) stones (Odds ratio = 1.957, 95% confidence interval = 1.017 – 3.767, P = 0.045).

**Conclusions** Although both LL and EHL were safe and effective in the treatment of refractory CBD stones or intrahepatic stones, LL had longer procedure. However, the number of session was not different. Further large comparative studies are warranted.

**OP33 EVALUATING DIGITAL SINGLE-OPERATOR-CHOLANGIOSCOPY FOR THE TREATMENT OF DIFFICULT BILIARY STONES: A RETROSPECTIVE MULTICENTER TRIAL**

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**DOI** 10.1055/s-0039-1681212

**Aims** In patients with difficult biliary stones, standard endoscopic treatment might fail and recently introduced digital single-operator cholangioscopes (SOCs), equipped with an improved imaging quality, might be used as a rescue treatment approach.

**Methods** In two tertiary referral centers in Germany, a total of 422 digital SOC procedures performed between 2015 and 2018 were retrospectively analyzed. The examinations were performed due to a previous or expected failure of standard endoscopic techniques to treat biliary stones and only cases with a SOC-based biliary stone treatment using electrohydraulic lithotripsy (EHL) or laser lithotripsy (LL) were included.

**Results** Overall, 76 examinations with a digital SOC-assisted biliary stone treatment, performed in 61 patients, were identified. Biliary stones were mainly extrahepatic (64.5%) and less frequently intrahepatic localized (35.5%) and the median stone size was 20 mm. Complete stone removal was achieved in 67.1% of cholangioscopes, while an incomplete removal was accomplished in 32.9% of examinations. Per SOC procedure, LL and EHL were similarly effective to achieve a complete stone removal (P = 0.90). Finally, the digital SOC-based treatment of biliary stone disease was successful in 97% of all patients; however, 13% of the patients needed at least two SOC-examinations for treatment.

**Major complications, defined as postinterventional cholangitis and pancreatitis, occurred in 15.8% of cases. All cases of SOC-related complications had a mild clinical course and no mortalities occurred due to procedure related complications.**

**Conclusions** Digital SOC-assisted biliary stone treatment is highly effective in patients with difficult biliary stone disease and should be considered the new standard of care for these patients; however, despite high treatment success rates, physicians should monitor these patients after performed procedures due to the significant rate of adverse events.

**OP34 ELECTROHYDRAULIC LITHOTRIPSY (EHL) WITH A SHORT-ACCESS-MOTHER-BABY-SYSTEM (SAMBA) FOR THE THERAPY OF COMPLICATED BILE DUCT STONES (SAMBA-EHL STUDY)**

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**DOI** 10.1055/s-0039-1681213

**Aims** Cholangioscopy with EHL is a method of choice for managing complicated bile duct stones. The SAMBA-system is a new endoscope with a short-
Cholecystectomy after ERCP: an early recurrence factor.

OP35 | INCIDENCE AND RISK FACTORS OF REMNANT CBD STONES IN PATIENTS UNDERWENT CHOLECYSTECTOMY AFTER ENDOSCOPIC CBD STONE EXTRACTION FOR BOTH CBD STONE AND GB STONE

Authors

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Institute 1

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Aims: To evaluate the effectiveness of EHL during cholangioscopy utilizing the SAMBA-scope. The aim of the actual study was to evaluate the effectiveness of EHL during cholangioscopy utilizing the SAMBA-scope.

Methods: The SAMBA-EHL study was a prospective, single-center and investigator-initiated trial. The primary endpoint of the study was the rate of complete stone clearance after therapy. Patients > 18 years with choledocholithiasis after failed conventional extraction attempts were included. Exclusion criteria were general contraindications to ERC, ASA classes IV-VI, and the presence of a pacemaker or ICD. After admission to the study, peroral cholangioscopy was performed with the SAMBA-system (Karl-Storz, Tuttingen) and EHL (Walz Elektronik, Rohrdorf). Successful stone-removal was confirmed by cholangiography and cholangioscopy. Clinical follow up was performed after 30 days.

Results: 31 patients (16 men, 15 women) at a median age of 73 (32–94) years participated in the study during September 2014 thru December 2016. In 39 examinations a median stone size of 15 mm (7–25) was identified during a median procedural time of 95 min (30–180). For sedation, a median propofol dose of 905 mg (340–1800) was applied. Patients’ stone clearance required on average 1.3 sessions. 24 patients required 1 EHL session, 6 required 2 and 1 patient required 3 sessions. One examination was stopped due to failure of the EHL probe. 5 patients needed further ERCs to eventually retrieve residual stone fragments. Finally, all 31 patients were successfully treated. Minor complications included cholangitis (n = 4), pancreatitis (n = 1) and sepsis (n = 1).

Conclusions: Therapy with EHL applied with the SAMBA-scope is an efficient and safe treatment for complicated choledocholithiasis.

OP36 | IS DIFFICULT CHOLEDCHOLITHIASIS RELATED TO EARLY RECURRENTCE?

Authors

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DOI 10.1055/s-0039-1681215

Aims: To investigate if presence of difficult common bile duct (CBD) stones (CBDS) is associated with an early recurrence of CBDS following endoscopic extraction.

Methods: We retrospectively analyzed data of patients who underwent ERCP/ endoscopic sphincterotomy, with successful CBD clearance, during 01/01/2005 – 31/12/2008 for CBDS. Symptomatic recurrences during the study period (up to 31/12/2015) were recorded. Patients were divided into two groups depending on presence or absence of difficult choledocholithiasis (defined as large (≥ 10 mm)/multiple (≥ 3) and/or embedded stones).

Results: 495 patients were included. 62 patients with clinical significant recurrence were enrolled. 27/62 patients (43%) presented with difficult choledocholithiasis. They relapsed after 27.4 ± 10 months. 35/62 patients (57%) exhibited “simple” lithiasis recurring after 38.7 ± 15 months. This difference in recurrence timing was statistically significant (p < 0.003). No statistically significant differences were noted (similar “recurrence profiles”) in: Episode(s) (number) of recurrence (p = 0.579), age (p = 0.929)/sex, CBD diameter (p = 0.264), CBD angulation scores (p = 0.276/0.525), interval between recurrence episodes (36 ± 24 vs. 32 ± 21, p = 0.697). Patients with difficult lithiasis required more frequently multiple ERCP sessions (p = 0.043). The main risk factor associated with an early recurrence (≤ 24 months after baseline ERCP) was the presence of difficult lithiasis at first presentation (p = 0.007).

Conclusions: Difficult CBD lithiasis at first presentation appears to be a risk factor for early recurrence. It is likely that the underlying mechanism of early CBD recurrence differs from that of the late one (>24 months). Late recurrence has been associated with Duodenal – Biliary Reflux and bile stasis. Patients with an “unfavorable stone profile” are at greater risk for residual microlithiasis, as confirmed by EUS studies, which could act as nidus for re-accumulation of lithiasic content. Microlithiasis/sludge could elude the imaging sensitivity of classical cholangiography.

OP37 | CLINICAL IMPACT OF PREOPERATIVE RELIEF OF JAUNDICE FOLLOWING ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY ON DETERMINING OPTIMAL TIMING OF LAPAROSCOPIC CHOLECYSTECTOMY

Authors

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Aims: To evaluate the optimal timing of LC according to clinical factor, focusing on preoperative relief of jaundice.

Methods: A total of 153 patients who underwent elective LC after ERCP because of choledocholithiasis and cholecystolithiasis from January 2010 to April 2014 were retrospectively reviewed. We compared hospital stay, perioperative morbidity, and rate of surgical conversion to open cholecystectomy according to relief of jaundice before surgery. These enrolled patients were divided into...
two groups: relief of jaundice before surgery (group 1, n = 76) or not (group 2, n = 77).

**Results** There were no significant differences in age, sex distribution, American Society of Anesthesiologists score, previous surgical history, white blood cell count, C-reactive protein, or operative time between the two groups. There was no significant difference in postoperative hospital stay between the two groups (4.9 ± 3.2 vs. 6.0 ± 5.2 days, p = 0.103). There were no statistical differences in conversion rate (3.9% vs. 5.4%, p = 0.717) or perioperative morbidity (0.0% vs. 3.9%, p = 0.125) either.

**Conclusions** LC would not be delayed until relief of jaundice after ERCP since there were no significant differences in perioperative morbidity or surgical conversion rate to open cholecystectomy. Early LC after ERCP may be feasible and safe in patients with acute cholangitis and cholecystolithiasis.

**OP38 SINGLE-OPERATOR PERORAL CHOLANGIOPANCREATOSCOPY-GUIDED LITHOTRIPSY FOR DIFFICULT BILIARY AND PANCREATIC STONES – A PROSPECTIVE MULTICENTER STUDY**


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**Aims** ERCP is the first choice for the removal of biliary and pancreatic stones. In difficult stones, advanced therapeutic techniques, such as electrohydraulic lithotripsy (EHL) and laser lithotripsy (LL) have been proposed. Recently, the availability of single-operator cholangiopancreatocscopy (SCOP) turned these techniques more accessible and easier to perform. We sought to evaluate the clinical efficacy and safety of SCOP-guided-lithotripsy using EHL/LL in patients with complex biliary and pancreatic stones.

**Methods** A prospective study was carried out in 3 hospitals, comprising 30 consecutive patients with complicated biliary and pancreatic stones treated with SpyGlass DS (Boston Scientific, Marlborough, United States) guided-lithotripsy using EHL or Holmium LL. We analyzed the complete cleaning of the ducts, the incidence of adverse events, the impact of the number of stones and its location on clinical success, and the performance of the 2 lithotripsy modalities.

**Results** 22 patients (73.3%) had common bile duct/common hepatic duct stones, 2 patients (6.7%) had a single cystic stump stone, 4 patients (13.3%) had pancreatic calculi and 2 patients (6.7%) had intraductal stones. 28 patients (93.3%) were successfully treated in one procedure and the remaining 2 patients (6.7%) required additional sessions to obtain cleaning of the ducts. 22 patients were treated with LL and 8 patients with EHL; 2 of the EHL-treated patients required more than one probe in the first ERCP; one of these patients was submitted to a subsequent ERCP in which LL was opted in, with success. The median duration of each session was 62 minutes (30–110). Complications were mild in 6 patients (20%) and included fever (n = 4), pain (n = 1) and mild pancreatitis (n = 1).

**Conclusions** SCOP-guided-lithotripsy using EHL or LL in patients with difficult biliary and pancreatic stones is very effective and is associated with transient and mild complications. There is a clear need for comparative studies between EHL and LL.

**OP39 ENDOSCOPIC PAPILLARY AND BILIARY LARGE BALLOON DILATION IS SAFE AND EFFECTIVE FOR DIFFICULT STONES REMOVAL IN PATIENTS WITH NONDILATED OR TAPERED DISTAL BILE DUCT**

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**Aims** According to guidelines, papillary/biliary balloon dilation (PBBD) should not exceed the maximum diameter of the distal bile duct and should not be performed in cases of nondilated distal bile duct. So, the use of papillary/biliary balloon dilation is contraindicated in patients with nondilated or tapered distal bile duct, in whom there is disproportion between the size of the stone and the distal bile duct. In this series, we analyze the feasibility of balloon dilation for difficult stones (>1 cm, impacted or multiple) in patients with a narrow distal bile duct.

**Methods** Data from 1289 ERCPs from two prospective studies performed between 2014 and 2018 for post ERCP pancreatitis prevention were retrieved. 258 cases had difficult stones and 182 underwent papillary/biliary balloon dilation up to 18 mm after endoscopic papillotomy. The balloon was always inflated across the papilla up to 18 mm in order to obliterate its waist, regardless the presence of a distal situated stone. Primary outcomes were clearance rate at 1st ERCP and complications.

**Results** Of the 182 patients (120F; mean age 60 yr), who underwent PBBD for difficult stones, 111 (61%) had non-dilated or tapered distal bile duct. Clearance rate at first ERCP was comparable among patients with dilated distal duct (67 of 71; 94%) and nondilated distal duct (102 of 111; 92%). Procedures were faster in patients with dilated distal duct (mean 17 vs. 24 min, p < 0.005). Complications were comparable in both groups (7.04% VS 7.2%).

**Conclusions** PBBD for giant, multiple or impacted stones is feasible and safe in patients with nondilated or, even narrow, distal bile duct.

**Friday, April 5, 2019**

**EUS diagnosis**

**08:30 – 10:30**

**OP40 REPEATED ENDOSCOPIC ULTRASOUND (EUS)-GUIDED FINE NEEDLE ASPIRATION (EUS-FNA) AFTER NON-DIAGNOSTIC OR INCONCLUSIVE RESULTS – A SYSTEMATIC REVIEW AND META-ANALYSIS**

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**Aims** EUS-guided fine needle aspiration (EUS-FNA) is the gold standard technique for the pathological diagnosis of solid pancreatic lesions. Several studies have been conducted to assess the role of repeat EUS-FNA after an inconclusive index study, reporting different outcomes. The aim of this study was to evaluate the pooled diagnostic accuracy of repeated EUS-FNA after previous non-diagnostic or inconclusive results on first attempt.

**Methods** We performed a systematic research on electronic databases (MEDLINE, PubMed, EMBASE) for relevant studies. Meta-analysis was performed to obtain pooled sensitivity, specificity, positive and negative likelihood ratio and diagnostic odd ratio. Summary ROC curve was used to calculate area under the curve. Meta-regression was used to assess the role of rapid on-site evaluation (ROSE).

**Results** 12 studies (486 patients) were included in the analysis. Pooled sensitivity was 77.1% (72.4 – 81.4%) and pooled specificity was 89.4% (82.9 – 94.1%); significant heterogeneity among studies was found both in sensitivity and specificity; positive-likelihood ratio (LR) was 5.96 (2.38 – 14.90) and negative-likelihood ratio (NLR) was 0.25 (0.13 – 0.49). Further, individual studies showed that ROSE and deep sedation did not provide significant benefits in diagnostic performance. A significant underperformance of EUS-FNA was found in comparison with surgical biopsy (OR 0.33; 95% CI 0.16 – 0.69).
Aims Recently, European evidence-based guidelines proposed surgery for branch-duct intraductal papillary mucinous neoplasms (BD-IPMNs) based on the presence of $\geq 2$ relative indications, depending on the comorbidity burden. However, most studies of date considered patients with absolute and relative indications together and radiological examinations in the baseline evaluation. The aim was to assess the accuracy of the guidelines in patients with relative indications, in a surgical cohort of demonstrated BD-IPMNs previously evaluated by endoscopic ultrasound (EUS).

Methods This is a multi-centre, observational, retrospective study. All consecutive patients with relative indications and histologically confirmed BD-IPMNs were included. Only patients assessed by EUS were included. Radiological examinations (CT, MRI) were not considered in this study. Patients with absolute indications or no indications according to recent guidelines were also excluded. Advanced lesions were invasive cancer or high-grade dysplasia. The main outcome was risk of advanced lesions and invasive carcinoma in patients with only relative indications.

Results Ninety-one patients with BD-IPMN underwent surgery because of absolute ($n = 21$), relative ($n = 60$), or no formal indications ($n = 10$). In total, there were 60 patients (mean age: $66 \pm 9$, 50% male) with one ($n = 35$, 58.3%) or $\geq 2$ relative indications ($n = 25$, 41.7%). The global advanced lesion and invasive carcinoma rates were 40% and 13.3%, respectively. No risk factor was associated with high-grade dysplasia or invasive carcinoma. Patients with one indication had a lower risk of invasive carcinoma than did those with $\geq 2$ relative indications (5.7% vs. 24%, respectively, $p = 0.048$); however, the advanced lesion rates were comparable (37.1% vs. 44%, $p = 0.593$).

Conclusions Invasive carcinoma is considerably more frequent in patients with two or more relative indications described by EUS. The surgical strategy in these selected cases should be decided on an individual basis.

OP42 STAGING ESOPHAGEAL AND JUNCTIONAL CANCER: IS EUS AN ACCURATE TOOL IN T2 N0 PATIENTS?

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DOI 10.1055/s-0039-1681221

Aims Esophageal cancer (EC) is one of the most lethal malignancies worldwide. Staging of EC is performed with computed tomography (CT), endoscopic ultrasonography (EUS) and (FDG) positron-emission tomography (PET). Patients can be managed in different ways, and this is influenced by the lymphnode (N)-stage of disease. Compared to surgical pathology, EUS has 85% accuracy in staging tumor depth and about 75% accuracy in staging regional N metastases. Diagnosing clinical T2N0M0 cancers is the most challenging because an error in staging, changes the treatment. The aim of this study is to report a single high volume center’s experience in this subset of patients combined with the experience of a high volume thoracic surgery center.

Methods 259 patients, retrospective collected, underwent EUS for staging of EC between January 2010 and August 2018. 62 patients (49 men) received a diagnosis of cT2N0M0 disease by EUS with previous staging with Ct scan and PET confirming the absence of distant/nodal metastasis. All the patient underwent standard surgical resection without preoperative chemoradiation. The preoperative EUS staging (cTNM) was then compared to surgical pathology (pTNM) results to evaluate accuracy.

Results Comparing preoperative EUS stage of cT2N0 with surgical pathology, 35/62 (55%) were valuated correctly, 22 (35.5%) patients resulted understaged, 5 patients (9.5%) were overstaged. Among the understaged patients, it’s useful to distinguish between who was understaged by tumor depth (8 pts), by nodal involment (7 pts) or both (8 pts). The 5 overstaged patients had a T1b stage without nodal involment. EUS shows an accuracy of 77% in staging for tumor depth and of 84% in staging for nodal malignancy. The positive predictive value (PPV) of a cT2N0 EC was 56% (35 pT2N0/62 cT2N).

Conclusions Accuracy of eus staged T2N0M0 EC appears slightly sufficient, only the 56% of patients underwent appropriate therapy based on their pathological staging.
OP44 PROSPECTIVE EVALUATION OF CONTRAST-ENHANCED ENDOSCOPIC ULTRASOUND AND ELASTOGRAPHY FOR DEEP PELVIC ENDOMETRIOSIS WITH BOWEL INVOLVEMENT

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Methods Patients who underwent EUS-guided tissue acquisition with the 20G ProCore needle of pancreatic and extra-pancreatic mass lesions were retrospectively identified at three Italian centers (Bologna, Fermo, Palermo). Diagnostic adequacy, accuracy and tissue core acquisition were the outcome measures. All the cases were performed without rapid on-site evaluation.

Results A total of 384 patients with pancreatic (62.2%) and extra-pancreatic lesions were included. For pancreatic lesions, adequacy, accuracy, sensitivity and specificity were 92.4%, 91.5%, 90.8% and 100%, respectively with a number needed to misdiagnose (NNM) of 11.8. The tissue core was obtained in 72% cases. Trans-duodenal approach was performed in 150 pancreatic lesions; accuracy, adequacy and tissue core acquisition were 88.7%, 90% and 66%, respectively (NNM 10). For extra-pancreatic lesions, adequacy, accuracy, sensitivity, specificity and tissue core sampling were 95.3%, 95.3%, 92.6%, 100% and 84.5% (NNM 21.3). Details are reported in Table 1.

Conclusions The 20G ProCore needle showed high diagnostic adequacy and accuracy, regardless of the access route.

Table 1 Diagnostic performance of the 20G ProCore needle, in pancreatic and extra-pancreatic lesions.

<table>
<thead>
<tr>
<th>ProCore needle performance</th>
<th>Pancreatic lesions (n = 236)</th>
<th>Extra-pancreatic lesions (n = 148)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Histological/cytological diagnosis drawn from tissue sample (diagnostic yield, n (%))</td>
<td>218 (92.4%)</td>
<td>141 (99.3%)</td>
</tr>
<tr>
<td>Possibility to obtain histological core, n (%)</td>
<td>170 (72.0%)</td>
<td>125 (84.5%)</td>
</tr>
<tr>
<td>Sensitivity for malignant lesions, % (95% CI)</td>
<td>90.8% (86.1–94.3%)</td>
<td>92.6% (85.4–97.0%)</td>
</tr>
<tr>
<td>Specificity for malignant lesions, % (95% CI)</td>
<td>100% (82.4–100%)</td>
<td>100% (93.3–100%)</td>
</tr>
</tbody>
</table>

OP45 A HEAD TO HEAD ANALYSIS OF ENDOSCOPIC ULTRASOUND AND ENDO-BRONCHIAL ULTRASOUND GUIDED FINE NEEDLE ASPIRATION OF SUB-CARINAL LYMPHADENOPATHY

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Aims Very few studies have compared the diagnostic utility of these two tests in sub-carinal lymphadenopathy. The aim of this study was to compare effectiveness and safety of both modalities and assess their diagnostic accuracy.

Methods In this retrospective cross sectional study, data were collected from patients who underwent either EBUS-TBNA or EUS-FNA of sub-carinal lymphadenopathy for a range of clinical indications between February 2013 and August 2015, at Shaukat Khanum Memorial Cancer Hospital & Research Centre, Lahore. Histopathology, clinical and radiological follow up was considered as gold standard to calculate the sensitivity, specificity, NPV and PPV.

Results In total, 131 eligible patients (mean age 49.69 years; range 8–87; 51.9% males) were reviewed. Of these, 82 patients had EUS-FNA (mean age 49.68 years; range 8–83; 51.2% males) and 49 patients underwent EBUS-TBNA (mean age 49.69 years; range 12–87; 53.1% males) of sub-carinal lymph nodes. The diagnostic yield of EUS-FNA and EBUS-TBNA were 91.4% vs. 71.4% (p<0.005). Only one patient in each group suffered a complication and was managed conservatively. The sensitivity, specificity, PPV and NPV for EUS-FNA was 92.8%, 100%, 100% and 28.5% whereas for EBUS-TBNA, it was 83.8%, 100%, 100% and 69.3%.

Conclusions Beyond doubt, both EUS-FNA and EBUS-TBNA are the future of mediastinal staging obviating the need of futile or unnecessary invasive staging procedures due to their minimal invasive approach, accuracy, safety record and diagnostic reach. EUS FNA should be considered as a first line investigation for the evaluation of subcarinal lymph nodes.

OP46 YIELD OF MALIGNANT LYMPH NODE DETECTION BY EUS AND FNA IN RESTAGING AFTER NEOADJUVANT CHEMORADIOTherapy FOR OEsoPHAGEAL Cancer

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Conclusions EUS with elastography and CE-EUS during DPE assessment is safe and improves the characterization of bowel lesions of endometriosis. The description of active lesions (iso- or hyper-enhancement, high ratio of elastometry) could be predictive of a better response to medical treatment.

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S19
Aims Despite the known decreased accuracy, endoscopic ultrasonography (EUS) and fine-needle aspiration (FNA) are believed to be potential tools for detection of residual disease after neoadjuvant chemoradiotherapy (nCRT) for oesophageal cancer. This study aimed to investigate the yield of EUS and FNA for detection of malignant lymph nodes after nCRT.

Methods EUS and FNA were performed 12 weeks after completion of nCRT. Suspect lymph nodes were defined as round, hypo-echoogenic, and with a size of ≥ 5 millimetres. Lymph nodes that were considered suspect but did not meet aforementioned criteria were recorded separately. To guide targeting of suspect lymph nodes, F18-FDG PET-CT was performed beforehand. Endoscopic nodal staging by EUS (uN) was compared to the histopathological examination of the resection specimens (ypN). Primary outcome of this study was the proportion of patients with malignant lymph nodes (ypN+) that was identified by EUS (uN+).

Results 100 consecutive patients were included in this analysis. Tumour was passable in all patients. Twenty-one patients had ypN+ residual disease of which 11 were identified by EUS (sensitivity 52%). Subsequently, 62 of 79 ypN- patients were classified accordingly by EUS (specificity 78%). More than half of patients (n = 6, 55%) in whom suspect lymph nodes did not meet predefined criteria had ypN+ residual disease. Missed malignant lymph nodes were located at the coeliac trunk, the lesser curvature, and at the paraoesophageal stations. Sensitivity and specificity of FNA were 75% (3/4) and 100% (11/11), respectively. FNA outcome was uncertain in 8 patients. A positive aspirate was collected in one FDG-avid lymph node that was deemed benign by EUS.

Conclusions Only half of patients with ypN+ residual disease was identified by EUS after nCRT. For this reason and the absence of false-positive findings by FNA, all lymph nodes detected after nCRT should be sampled when aiming to detect residual disease.

OP47 PERFORMANCE OF EUS-GUIDED TISSUE ACQUISITION IN SAMPLING OF GI SUBEPITHELIAL LESIONS

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Aims The pathological diagnosis of gastrointestinal subepithelial lesions (SEls) is fundamental to guide management decisions. EUS-guided tissue acquisition (EUS-TA) is crucial technique to reach the final pathological diagnosis. Different types of needles have been developed to perform fine needle biopsy (FNB) in order to overcome the limitations of standard fine-needle aspiration (FNA). The aim of the study was to evaluate the performance of EUS-TA in the diagnosis of SELs.

Methods This is a retrospective, single-center study of consecutive patients with suspected SELs underwent EUS-TA.

Results A total of 82 patients were included in the study (41 female, 50%), with mean age of 64 years (SD 11.8). The average size of the lesions was 36.5 mm (SD 23.1); 61% of lesions were in stomach, 19.5% in the duodenum, 14.6% in the esophagus and cardias, and 4.9% in the rectosigmoid colon. In 61% of cases, an FNB needle was used. Overall, the most frequent caliper used was 22 G (74.4%). Overall adequacy was reached in 75.6% of patients, without a statistically significant difference between FNA and FNB samples and between different needle calibers. However, a histological core was obtained more frequently with FNB than with FNA, 90% vs. 68.75%, respectively (p = 0.02). No immediate adverse events or technical difficulties were reported.

Fifty-one patients underwent surgical resection (62.2%), 38 of them had a diagnostic EUS-guided TA. In all of them, the pathological diagnosis obtained with EUS-TA was confirmed with the pathological analysis of surgical specimens.

Overall, the pathological diagnosis was GIST in 65 patients (79.3%), leiomyoma in 6 (7.3%), desmoid tumor in 1 (1.2%), schwannoma in 2 (2.4%), with no adequacy and surgery in 8 patients (9.8%).

Conclusions EUS-FNB for suspected SELs tumors had the same adequacy of FNA, with the same profile risk, but gave more histological core.

OP48 CLINICAL PERFORMANCE OF NEW THREE POINTS 19 G ENDOSCOPIC ULTRASOUND CORE NEEDLE FOR THE HISTOLOGICAL DIAGNOSIS OF MESENCHYMYAL TUMORS

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Aims Different type and size of histological needles for endoscopic ultrasound guided fine needle biopsies (EUS-FNB) have been developed, however their best application has to be defined. The diagnosis of mesenchymal tumors (MT) often requires tissue for molecular studies (i.e. ISH, FISH, NGS) beside H&E and immunohistochemistry. Aim of the study was to evaluate the clinical performance of a new three-points 19 G core needle in MT.

Methods From July 2017 to October 2018, all the consecutive patients who underwent EUS-FNB at a single referral with a three-points 19 G core needle for suspected abdominal MT, were prospectively analyzed. Gross visual inspection was performed to determine the number of passes.

Results 26 patients were evaluated. The procedure was technically feasible in all cases. Five patients were excluded due to diagnosis of other malignancies. The remaining 21 patients were diagnosed with MT (17 males, mean age 51 ± 18.2 years). Based on gross visual inspection a mean number of 1.3 passes (range 1 – 2) were performed without major adverse events. The diagnosis was established by FNB in 20 cases (accuracy 95.2%). Final diagnosis were GIST in 10 cases, sarcoma in 3, leiomyoma in 2, angiomixoma, schwannoma, glioma, and desmoid-type fibromatosis in one case each. The mean size of the lesions was 77 mm (range 25 – 190). FNB was non-diagnostic in a patient with a large mass with lipomatous radiological features. Pathological examination showed adequate material for full histological and molecular diagnosis at the first pass in 19/20 cases.

Conclusions This is the first report on new three-points design 19 G histological EUS needle. In the setting of MT this needle showed high feasibility and safety with a high-rate of core tissue in the specimen allowing full histological and molecular evaluations. These evidences support this device as a promising tool when a histological diagnosis is needed as in case of MT.
**OP49** HIGH ACCURACY OF TRANSDUODENAL ENDOSCOPIC FINE NEEDLE BIOPSY USING A 19 G FLEXIBLE NEEDLE: A RETROSPECTIVE MULTICENTER STUDY


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**DOI** 10.1055/s-0039-1681228

**Aims** Endoscopic ultrasound-guided fine needle aspiration (EUS FNA) is the gold standard to obtain samples from gastrointestinal tract and pancreatic lesions. EUS-FNA is accurate especially when rapid on-site evaluation (ROSE) is performed. The use of EUS-guided fine needle biopsy (EUS FNB) can give a chance to reach a diagnosis. For lesions from the duodenum, it’s recommended the use of a nitinol 19-gauge needle that is more flexible. Recent data shared doubts about feasibility and safety of this needles used through the duodenum. The aim of the study is to evaluate the feasibility, safety and accuracy of 19-gauge nitinol flexible needle in patients with solid lesions punctured from duodenum.

**Methods** We performed a retrospective analysis of prospectives databases from eight Italian Endoscopic centres, including consecutive patients with solid lesions who underwent EUS with tissue sampling through duodenum by using 19-gauge needles between 2015 and 2018. All lesions localized at pancreas, nodes, biliary/kidney/liver periduodenal abdominal masses were enrolled in the study.

**Results** 201 patients (60.2% males) met the inclusion criteria and were enrolled. EUS-FNB was performed by using the Ex-19G needle in 43.8% of cases and ExF-19G in the remaining 56.2%, through duodenal bulb (47, 23.4%), second (143, 71.1%) and third (11, 5.5%) duodenal portion. FNB was feasible in all cases, while an adequate histology sample was obtained in all but 8 cases (96.1%). 151 lesions were considered malignant and 50 were considered as benign 154 lesions were finally considered as malignant and 47 as benign (8 inadequate samples), leading to a diagnostic accuracy for EUS-FNB of 93.5% (95% CI 89.2%-96.5%), sensitivity of 92.1% (95% CI 86.8%-95.7%), specificity of 100% (95% CI 90.5%-100%), PPV of 100%, NPV of 74% (95% CI 62.8%-82.7%).

**Conclusions** Our data suggest that 19 flexible needles can be used safely through all the duodenum providing a sufficient tissue samples to reach a diagnosis and to perform ancillary techniques.

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**OP50** FACTORS ASSOCIATED WITH THE PROGRESSION OF GASTRIC INTESTINAL METAPLASIA IN A LOW RISK POPULATION – A MULTICENTER, PROSPECTIVE COHORT STUDY


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**DOI** 10.1055/s-0039-1681229

**Aims** Gastric cancer (GC) is preceded by several gastric precursor lesions (GPL) which makes it suitable for surveillance. For low risk areas method and frequency of endoscopic surveillance is still under debate. This study aims to identify high and low risk subjects for progression of GPL to prevent unnecessary performed endoscopies. Patient characteristics and previously described discriminative serum markers at baseline (pepsinogens (PG) and gastrin-17) are assessed to predict progression of GPL.

**Methods** The PROREGAL study started in 2009 and is one of the largest prospective cohorts in the Netherlands and Norway. Inclusion: 1) > 18 years of age, 2) previous diagnosis of GPL. Patients completed a questionnaire on lifestyle factors and underwent at least two endoscopies. Biopsies were obtained from visible lesions and 12 standardised stomach sites and assessed according to the operative link on gastric intestinal metaplasia (OLGIM) system. At baseline, PG and gastrin-17 samples were drawn. Progression of IM was defined as progression of OLGIM classification between follow-up (FU) endoscopy. Cox-regression was performed with a significance level of 0.05.

**Results** 308 patients (median age 61 years, IQR17: male 48.4%) were included. Median FU time was 48 months (IQR 24). During FU 116 patients showed progression of OLGIM stage (37.7%) providing an incidence rate of 9 events/100 personyears (95% CI 8.8 – 9.2). Six patients (1.9%) developed GC (0.4 events/100 personyears (95% CI 0.002 – 0.01)). History of Hp-infection, smoking, alcohol use and increased BMI did not show significant associations. Also serum levels of PG I/II, and gastrin-17 were not significantly correlated with progression of IM.

**Conclusions** This is the first study to assess RF for the progression of IM in low risk areas. Lifestyle factors were not correlated with progression of IM. Moreover, baseline serum markers are not predictive for future progression of IM during FU. Future studies should focus on the longitudinal assessment of these markers.

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**OP51** DUAL FOCUS NARROW-BAND IMAGING ENDOSCOPY FOR THE “OPTICAL BIOPSY” OF GASTRIC LESIONS

**Authors** Kuvaev R, Kashin S, Kraynova E, Nikonov E

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**DOI** 10.1055/s-0039-1681230

**Aims** The aim of this study was to evaluate the accuracy of NBI features described in ESGE proposed classification (simplified NBI classification for gastric lesions, Pimentel-Nunes P, et al. 2012) when using dual focus narrow-band imaging (DF-NBI) endoscopy.

**Methods** 180 gastric lesions in 97 patients (mean age 59.7 years, SD = 13.7, 48% male, 52% female) were observed with NBI-DF (GIF- HQ190, Exera III, Olympus, Japan). Mucosal patterns were classified into type A (regular circular), B (tubulo-villous) and C (irregular), presence of “light blue crests” (LBC) and demarcation line (DL) were assessed. Forceps biopsy or endoscopic resection was performed for a histological evaluation of the lesions.

**Results** From 180 gastric lesions (62 chronic gastritis, 67 intestinal metaplasia (IM), 20 hyperplastic poly, 5 low grade dysplasia, 10 high grade dysplasia, 16 adenocarcinoma) 70 had pattern A, 62 B (36 LBC+ and 26 LBC-) and 28 C. 20 hyperplastic poly had a specific coarse pattern and were not classified. DL was identified in 2%, 66% and 100% in patterns A, B, and C respectively.
and C, respectively. Sensitivity, specificity, accuracy for pattern A (for absence of IM and neoplasia) were 0.94, 0.88, 0.90, respectively; for pattern B (for IM) were 0.84, 0.94, 0.89, respectively; for pattern B+LBC +DL (for IM) were 0.97, 1.00, 0.99, respectively; for pattern C (for neoplasia) were 0.87, 0.99, 0.97, respectively.

Conclusions ESGE proposed NBI classification for gastric lesions demonstrated high diagnostic accuracy of DF-NBI endoscopy. The combination of pattern B+LBC +DL was found to be the most accurate criteria for IM. Benign hyperplastic polyps were characterized by a specific pattern that needs to be validated in further studies.

OP52 LINKED COLOR IMAGING CONFRONS BENEFITS IN PROFILING H. PYLORI INFECTION IN THE STOMACH

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Aims There is a high prevalence of helicobacter pylori (H. pylori) infection. White light endoscopy (WLE) can be used for evaluating the mucosal lesions, but WLE does not have high diagnostic efficiency. Linked color imaging (LCI) is a newly developed endoscopic imaging technique. This study aimed to compare LCI with WLE in detecting and staging H. pylori infection in the stomach in a randomized controlled clinical trial.

Methods A total of 253 patients who had indications for gastroduodenoscopy were enrolled and randomized into Group A (=127), who underwent WLE followed by LCI, and Group B (=126), who underwent LCI followed by WLE. The clinical data were collected, and the diagnostic accuracy of WLE and LCI was calculated and compared.

Results The overall diagnostic accuracy of WLE and LCI for H. pylori infection was 31.5% (=40) and 50.4% (=64) in Group A (P=0.001), and 36.5% (=46) and 49.2% (=62) in Group B (P=0.029). In both groups, LCI had higher sensitivity, specificity, and Youden index scores than did WLE. Four stages were defined in the course of H. pylori infection in the stomach. LCI staging results were more highly consistent with pathological staging than were WLE staging results (kappa value 0.772 vs. 0.516). The LCI observations were closely correlated with the pathology.

Conclusions LCI had a higher diagnostic efficacy for H. pylori infection in the stomach. The endoscopic color features under LCI can help to stage and profile the H. pylori-associated gastritis. This study was registered at Clinical-Trials.gov (ClinicalTrials.gov ID: NCT02724280).

OP53 RASPBERRY SHAPED FOVEOLAR TYPE ADENOCARCINOMA

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Aims Atrophic gastritis and intestinal metaplasia caused by Helicobacter pylori infection are frequently involved in gastric cancer. A novel concept, gastric adenocarcinoma of fundic gland type (GA-FG), was recently proposed to define adenocarcinomas that apparently do not involve H. pylori infection. Here, we propose the new entity of gastric adenocarcinoma of foveolar type (GA-FV) and describe its characteristic endoscopy findings.

Methods Subjects were 1412 patients who underwent endoscopic resection of early gastric tumors (1666 lesions) at our hospital between January 2013 and August 2018. Endoscopic findings were screened for reddish semi-pedunculated protruding lesions with a morphological raspberry-like appearance and we identified 13 patients with such GA-FV (11 men, 2 women; mean age 54.2 [range, 43 – 62] years). Clinicopathological assessment was completed for these 13 patients.

Results All patients were negative for H. pylori infection. Tumor location was in the upper or middle parts of the stomach in 12 patients and the elevated stomach in 1. Macroscopic type was 04 in all patients. Tumor size was 2 – 9 (mean, 4.0) mm. Pathological examination in all patients revealed intramucosal invasive carcinoma, limited to between the proliferative zone and mucosal surface with fused irregular glands and loss of compartmentalization. Nail head-like structures were observed in the top mucosal layer. All lesions remained confined to the mucosa with no vascular invasion and were immunopositive for mucin 5AC, negative for mucin 6, and diffusely positive for Ki-67.

Conclusions We propose GA-FV, seen as reddish semi-pedunculated protruding lesions, as a new entity of gastric adenocarcinoma.
OP56 THE DEGREE OF ESOPHAGOLOGICALLY EVALUATED MUCOSAL ATROPHY AND GASTRIC CANCER RISK

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Aims To determine the risk of gastric cancer in western patients with various degree of endoscopically evaluated mucosal atrophy.

Methods Data from 2885 patients were retrospectively analyzed. The degree of mucosal atrophy was classified according to Kimura-Takemoto classification system. We analyzed the frequency of gastric cancer detection in patients with various degree of mucosal atrophy.

Results Among 2885 patients 641 had no atrophy, 494 C1, 515 C2, 408 C3, 241 O1, 285 O2, 301 O3. Gastric cancer was detected in 68 patients (2.3%) including 8 cases of synchronous multiple tumors (totally 83 lesions; 16 diffuse type and 67 intestinal type). Patients with diffuse type cancer were younger than those with intestinal type (48.9 ± 3.5 vs. 67.5 ± 1.1; p < 0.0001). The relation between the degree of mucosal atrophy and frequency of gastric cancer detection was as following: 0 degree – 6 cases (0.9%) of cancer; C1 – 1 (0.2%); C2 – 3 (0.6%); C3 – 4 (0.9%); O1 – 10 (4.1%); O2 – 13 (4.6%); O3 – 31 (10.2%). The cancer risk was significantly higher with opened type atrophy than with no or closed type (< 0.00001). Intestinal type of cancer was more common for patients with O1 – O3 atrophy and diffuse type – for patients with O1 and C1-C3 atrophy (< 0.00001).

Conclusions The degree of endoscopically evaluated mucosal atrophy can be used to predict gastric cancer risk and to select the group patients who need endoscopic surveillance.

OP57 GASTRIC POLYPS: A RETROSPECTIVE COHORT ANALYSIS OF EPIDEMIOLOGICAL AND PHENOTYPIC CHARACTERISTICS

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Aims Gastric polyps are usually benign lesions incidentally found during upper gastrointestinal endoscopy. Aim of this study was to identify the frequency and topography of different types of gastric polyps as well as their epidemiologic characteristics.

Methods All gastroscopies having been performed in our center over the last 15 years were retrospectively reviewed (1.1.2003–28.2.2018). Demographics, morphological and histological characteristics of polyps were collected.

Results Nine hundred eighty nine (4.1%) patients with at least one gastric polyp were identified from a total of 236688 gastroscopies. Mean patient age was 63.6 years old (range 15–92) with 58.8% being female. 46.5% of patients had more than one polyp detected. 66.3% of patients had polyps sized less than 5 mm while 3.7% had large polyps sized more than 20 mm. The most common site of polyp detection was fundus (37%) and 19.6% of patients had polyps in more than one sites of the stomach. 47.4% of patients had hyperplastic, 6.5% had adenomatous and 30.1% had fundic gland polyps. Some other pathology was detected in the rest 15.9% of patients. High Grade Dysplasia, detected in 5.6% of patients, was recognized only in adenomatous polyps.

Conclusions Gastric polyps were rather rare (4%) in our study population and more common in women. Most patients harbored hyperplastic polyps while adenomas represented the least common but more aggressive histological type.


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Aims Epidemiologic and phenotypic characteristics of gastric polyps are directly associated to Proton Pump Inhibitors (PPI) use and Helicobacter pylori (Hp) infection. Aim of this study was to outline any changes of these parameters during different time periods.

Methods All gastrosopies having been performed in our center over the last 15 years were retrospectively reviewed. Demographic, topographic and histological characteristics of polyps as well as Hp infection were documented. Differences of the aforementioned parameters between 1.1.2003 – 30.6.2010 (Period 1) and 1.7.2010 – 31.12.2017 (Period 2) were analyzed using Chi Square test.

Results The most common site of polyp detection, polyp histology and number of polyps per patient (data not shown) were significantly different between the 2 periods (Table 1). No difference was detected in demographic characteristics as well as polyp size. Hp was found positive in 25.5% of gastroscopies. Patients harboring hyperplastic polyps had significantly higher chance of having positive Hp in Period 2 compared to Period 1.

Conclusions During the last few years a significant rise of fundic gland over hyperplastic polyps is observed, probably due to decreasing Hp prevalence and increasing PPI use in the West. That explains change of the most common polyp site to fundus and more polyps per patient between Period 1 and 2 in our study population. Hp was more regularly investigated in patients with hyperplastic polyps during Period 2 reflecting better clinical practice after the release of relevant guidelines.

OP59 DIAGNOSTIC ACCURACY OF ACETIC ACID OR CRYSTAL VIOLET ENHANCED NARROW BAND IMAGING (NBI) FOR DETECTING GASTRIC INTESTINAL METAPLASIA (MAPS) USING EGGM AND SIMPLIFIED NBI CLASSIFICATION

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Aims To evaluate the sensitivity, specificity and the predictive value of acetic acid-enhanced NBI (AA-NBI) or crystal violet-enhanced NBI (CV-NBI) versus white-light endoscopy (WLE) using endoscopic grading of gastric intestinal metaplasia (EGGIM) and simplified NBI classification compare to Operative Link for Gastritis assessment based on Intestinal Metaplasia (OLIM/OLGA) assessment in patients referred for upper endoscopy with suspected gastric intestinal metaplasia (GIM).

Methods In this prospective study we enrolled in 34 patients age 30 – 75 years with dyspepsia based on presenting signs and symptoms, who underwent upper endoscopy and biopsy of the mucosa in mono-center study at “Tsairitsa Yoanna – ISUL” University Hospital, Sofia, Bulgaria. We divided the
patients into 3 groups: 12 patients using WLE + random biopsy, 10 patients using CV-NBI and targeted biopsy and 12 patients using AA-NBI and targeted biopsy. The ability of the three different methods to diagnose GIM in these patients was compared. We compare EGGIM and simplified NBI classification with the results from OLGIM/OLGA.

Results Of 34 patients included in the analysis, the diagnosis of GIM was confirmed in 4 (11.8%) and excluded in 30 (88.2%) patients, of which 3 (75%) were diagnosed by AA-NBI and 1 (25%) by CV-NBI as compared to WLE, no patient was identified with random biopsy. Therefore, the overall diagnostic accuracy of chromoendoscopy using EGGIM score is with sensitivity 83.3% and specificity 82.12%, positive predictive values 50% and negative predictive values 95.83% for detecting GIM using OLGA/OLG.

Conclusions AA-NBI and CV-NBI showed high sensitivity, specificity and very high NPV for detecting (diagnosing) GIM in patients with gastric atrophy and significantly higher diagnostic yield compare to WLE+random biopsy. Chromoendoscopy combined with NBI should be used for detecting GIM and can improve the accuracy of endoscopy-targeted biopsies in patients with suspected gastric atrophy. Further bigger studies are needed to establish the efficacy of AA-NBI and CV-NBI.

Friday, April 5, 2019 08:30 – 10:30 Video EUS 1 South Hall 1A

**OP60V EUS-DIRECTED TRANS-JEJUNO-GASTRIC BYPASS ERCPS WITH USE OF 20MM LUMEN-APPOSING METAL STENTS (LAMS) IN A PATIENT WITH ROUX-EN-Y GASTRIC BYPASS (RYGB) DUE TO REFRACTORY BILIARY LEAK**

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**Introduction** EUS-guided gastrogastrostomy with LAMS between pouch and gastric remnant of the RYGB gain acceptance to practice ERCP. LAMS migration during the passage of the duodenoscope occurs up to 60%. Deferred ERCP until maturation of the fistula is advised. New 20-mm LAMS have a 25% larger diameter, and could facilitate ERCP, but have not been tested on RYGB yet.

**Description** Woman who underwent a RYGB presents early bile leak post-cholecystectomy. EUS-guided JG-assisted ERCP was performed. The excluded stomach was identified with an echoendoscope from the proximal jejunum and contrast was injected through a 19-G needle to confirm the position within and to distend the stomach remnant. Jejuno-gastrostomy was performed using hot-Axios system and a 20 mm LAMS.

Then, ERCP was performed through the LAMS in the same session. The ampulla of Vater were easily accessed using duodenoscope. Sphincterotomy and stone extraction were performed and a plastic-10F stent was placed. A week later, new ERCP was performed cause of the persistent bile leak, and the plastic stent was replaced with metal stent and coaxial pigtail stent.

The biliary stent, pigtail stent and LAMS were removed when the bile leak stopped. The fistula was closed using endoscopic suturing (Overstitch; Apollo Endosurgery) and over-the-scope clip (Ovesco).

**Conclusion** We describe the use of 20-mm-LAMS and combined endoscopic closure Ovesco-suturing in RYGB with refractory bile leak. None ERCPs caused stent migration. Thanks to these technical modifications, the endoscopic management did not require any additional session respect to a patient non-RyGB.

**OP61V ENDOSCOPIC MANAGEMENT OF ACCIDENTAL PORTAL VEIN PUNCTURE DURING CHOLEDOCHOUDUODENOSTOMY USING HOT-AXIOS LUMEN APPOSING METAL STENT**

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**Introduction** EUS-guided choledochoduodenostomy is an endoscopic alternative technique to PTHB drainage in patients with malignant distal biliary obstruction when ERCP has failed. However, it is not well established how the procedure must be performed when using lumen-apposing metal stents (LAMS) and severe complications associated with the technique may occur. So our aim was to describe the endoscopic management of an accidental portal vein puncture during this procedure.

**Endoscopic technique** We report a clinical case of a 65 year-old woman with obstructive jaundice due to locally advanced unresectable pancreatic adenocarcinoma. After ERCP failure, EUS-guided choledochoduodenostomy was performed. A dilated common bile duct (CBD) (14 mm) was observed so a HOT-Axios catheter using electrocautery was directly inserted into the CBD; after that, a guidewire was introduced through LAMS catheter. However, after CBD puncture, LAMS catheter and the guidewire were observed inside portal vein. The procedure was continued controlling that the opening of distal flange took place within the CBD. Once the proximal flange was delivered, a severe bleeding was observed through LAMS. After that, EUS was exchanged by a gastroscope. A guidewire trough LAMS using a sphincterotome was introduced, and the guidewire was passed across the tumor and finally across the papilla. Then, EUS-guided biliary rendezvous technique was performed. A fully-covered self-expandable metal stent was placed to seal disruption between the CBD and portal vein.

Finally, the patient was discharged after 72 h without any complication (pain, rebleeding or infection), and bilirubin test normalized after 7 days.

**Conclusion** EUS-guided choledochoduodenostomy using Hot-Axios stent placement may be faster than using conventional self-expandable metal or plastic stents, however LAMS-related severe complications may occur. By introducing a guidewire into CBD before LAMS delivery, accidental portal vein puncture may be avoided.

**OP62V SINGLE-SCOPE TRANSGASTRIC ANTEGRADE CHOLANGIOSCOPY (STAC) AND INTRADUCTAL POLYPECTOMY VIA EUS-GUIDED HEPATICOGASTROSTOMY (HGS) WITH A LUMEN-APPOSING-METAL STENT (LAMS)**

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EUS-FNA failed to diagnose polypoid hilar cholangiocarcinoma and ERCP failed to drain the up-steam duct. EUS-guided hepatico gastrotomy (HGS) was performed with a lumen-apposing metal stent (LAMS). Biliary drainage and access for single-scope transgastric antegrade cholangiopycscopy (STAC) was possible. Cholangiocarcinoma was diagnosed in the resected specimen of STAC-guided intraductal polypectomy.

**DESCRIPTION.** HGS was performed after failed ERCP and EUS-guided FNA. EUS-guided 19G needle access into a segment II radicle was achieved. Marked intrahepatic dilation and proximity to the Gl wall allowed transgastric deployment of a dedicated, 8 × 8 mm fully-covered LAMS for HGS. The rationale for LAMS-HGS was to offer large-diameter drainage preventing blockage of per-
OP64V EUS-DIRECTED TRANSGASTRIC ERCP IN A BILLROTH II GASTRECTOMY BY USING LUMEN-APPOSING METAL STENT

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In Billroth II anatomy, ERCP is challenging. Intubation of the afferent limb is sometime impossible due to an acute angle or long afferent limb. We present a patient with Billroth II gastrectomy admitted due to biliary sepis secondary to choledocholithiasis. The afferent limb was not accessible with the duodenoscope and gastroscope, due to acute angle for accessing the afferent limb and for long afferent loop. A nasobiliary catheter was inserted into the afferent limb and contrast, physiological and methylene blue were instilled to distend the afferent limb.

By means of endoscopic ultrasound, a portion of the loop near the gastric lumen was located, confirming by needle puncture and guidewire, which corresponds to the part closest to the papillary area. EUS-guided gastrojejunostomy was performed with a 15 × 10 mm Hot Axios stent. Subsequently, an ERCP was performed advancing the duodenoscope through the aorta to the afferent limb, cannulating with double guidewire technique. During the extraction of a stone, it was impacted in the papilla. Electrohydraulic lithotripsy (EHL) was performed by introducing the Autolith probe through an extractor balloon. The fragmentation of the stones was completed by choledangiography with SpyGlass and EHL.

Conclusions There are no previously described cases of gastroenteroanastomosis bridge in patients with Billroth II for the performance of ERCP. This procedure is feasible with lumen-apposing metal stent and may be useful in some cases in which the afferent limb cannot be accessed.

OP65V ANTEROGRADER BILIARY DRAINAGE AS SECOND STEP AFTER EUS HEPATICOGASTROSTOMY (ABD-HG) FOR MANAGING BENIGN BILIO-DIGESTIVE ANASTOMOTIC STRICTURES

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Introduction and aims Benign strictures of bilio-digestive anastomoses (ABDS) are classical complications after biliary surgery. We propose an approach in two consecutive steps:
1. EUS-guided HG to create an access to the biliary tree;
2. anterograde treatment of the stricture.

The objectives were to evaluate the feasibility, the safety, and the efficacy of this strategy.

Methods Monocentric retrospective study including patients with ABDS managed by ADB-HG. One month after the first step was scheduled an anterograde treatment being:
1. anastomotic dilatation using 8 mm balloon + double pigtail stents (DPS) placement if the ABDS was crossed;
2. anterograde cholangioscopy (+ electro-hydraulic lithotripsy) in case of lithiasis.

Results 12 patients (mean of 61 years) were included. Nine had a hepaticojejunostic stricture, 2 biliary stricture with duodenal occlusion, and one a post-hepatectomy defect of the convergence. The symptoms were 50% of cholangitis, 50% of jaundice.

First step: the technical and clinical success were 100% (SEMS placement in 9 cases, DPS and/or naso-biliary drain in 2, and dilatation + DPS in one case. There
were 4 post-operative adverse events (3 cholangitis, 1 abscess) managed conservatively. Second step was done after 7 weeks evaluation. The ABDS was crossed in 36.4%, allowing for dilation and DPS placement. In other cases (63.6%), hepatogastric stents were placed (4 DPS; 4 SEMS). Two patients had anterograde cholangioscopy with electro-hydraulic lithotripsy for macrolithiasis (Video). Then, a mean of 4.4 subsequent ambulatory endoscopies were performed, with final crossing and dilation of the ABDS in 75% (+DPS). There was no complication. In a mean follow-up of 100 weeks [11–213], one patient had one dilatation without recurrence, the 11 others undergo stent exchanges every year and remain asymptomatic.

**Conclusion** The management of ABDS with this two-steps approach, allowed for stricture repermeabilization rate of 75% and constant clinical symptoms regression.

**OP66V BURIED LUMEN-APPOISING METAL STENT (LAMS) IN ESOPHAGO-GASTRIC ANASTOMOSIS: THE LAMS-IN-LAMS RESCUE TREATMENT**

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A 61-year-old man presented with progressive dysphagia and post prandial vomiting one year after undergoing esophago-gastric anastomosis for adenocarcinoma of the gastroesophageal junction. Upper endoscopy revealed a high regrowth in the anastomotic area. The best acceptance among the endoscopists. This technique involves placing another stent covering in its entirety the inside of the trapped stent. In stent "technique for removal of embedded covered metal stents has gained background. Afferent limb syndrome (ALS) is a rare complication of duodenopancreatectomy resulting from the mechanical obstruction of the afferent limb usually after local malignancy recurrence. Conventional management of ALS (ie surgery and conservative palliative therapy) is often unsatisfactory.

**Methods** we present here five cases of EUS guided internal drainage of the afferent limb using lumen apposing metal stents (LAMS). IRB approval/written consent not needed.

**Results** All procedures were successful with no related complications, two patients had a complete regression of their symptoms, one experienced cholangitis recurrence after 3 months, two patients died after some weeks due to their malignancies.

**Conclusions** EUS-guided entero-enterostomy by LAMS offers a convenient and safe palliative solution for patients presenting ALS due to progressive malignancy after duodenopancreatectomy.

**OP68V FIRST SUCCESSFUL SCAR EXCISION, RE-VASCULARIZATION AND TRANSPALATION OF SMALL INTESTINAL MUCOSA TO THE CERVICAL ESOPHAGUS IN MAN**

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A 62 year old man had undergone a curative circumferential tubular endoscopic submucosal dissection (ESD) from 20–27 cm aborally in july 2015 due to an early SCC located in the upper esophageal sphincter area. Different means to prevent scar area was first excised in a tubular fashion from the upper esophageal sphincter over 7 centimeters and a PEG tube placed into the stomach. Two polyurethene vacuum sponges were implanted into the cervical esophagus and changed every 3–4 days over 20 days in order to stimulate neovascularization. In a second intervention a 3 cm segment of small intestine was harvested surgically, specially prepared and transplanted to the priorly conditioned scar area. The specimen was temporarily fixed against the wall using a non-covered nitinol stent. Two month after the second procedure several islands of histologically proven vital PAS positive small intestinal mucosa could be observed. In the meantime, small intestinal mucosa can clearly be visualized at the transplantation site. Clinically the patient has recovered completely from the intervention and works full time as engineer. Our case shows the feasibility of a new concept: endoscopic scar excision, induction of neo-vascularization in analogy to plastic surgery over 3 weeks and transplantation of surgically harvested and specially prepared small intestinal mucosa the pretreated area. The concept offers a new prospective for the treatment and potentially the prevention of scar formation after primary tubular mucosal excision in the esophagus.
OP69V SUBMUCOSAL TUNNELING ENDOSCOPIC RESECTION (STER) FOR OBSTRUCTIVE DUODENAL LIPOMA

Authors

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A 35-year-old male presented with a 6-month history of postprandial epigastric pain and nausea. Gastroscopy revealed a 3 cm soft subepithelial mass that originated from the duodenal bulb and prolapsed into the antrum. Endoscopic ultrasonography showed a hyperechoic homogeneous mass that originated from the submucosal layer of the duodenum, consistent with a lipoma. The mass had a broad base, preventing the application of endoscopic loop ligation. Therefore, submucosal tunneling endoscopic resection (STER) technique was applied. A mixture of hydroxyethyl starch (500 ml) with methylene blue (1 ml) and epinephrine (1 mg) was injected above the pylorus. Then, a submucosal pocket was created at the lesser curvature of the antrum that was extended all along the length of the superior wall of the duodenal bulb. The endoscope was advanced between the superior pole of the lesion and the duodenal wall. Dissection of the inferior and posterior part of the lesion was achieved with a blunt tip knife in order to diminish the risk of perforation due to poor visualization or due to tangential access. In addition, a tapered tip cap was used in order to push the endoscope into the tight space between the mass and the underlying duodenal mucosa. Finally, the lesion was completely resected and the specimen was retrieved with a basket. At the end of the procedure small incisions were made around the edges of the entrance of the tunnel. These superficial defects allowed clip grip for traction and apposition. Using two clips, the mucosal defect was partially closed. Complete closure was achieved with additional clips. The patient was discharged after 24 hours and had an uneventful recovery. At 10 months of follow up the patient remains asymptomatic and endoscopy showed a smooth passage of the gastroscope to the duodenum.

OP70V EUS-GUIDED TREATMENT OF GASTRIC FUNDAL VARICES WITH COMBINED INJECTION OF COILS AND CYANOACRYLATE GLUE: INITIAL EXPERIENCE OF A BRAZILIAN ACADEMIC INSTITUTION

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Conventional endoscopic treatment of gastric fundus varices (GOV 2/IGV 1) consists of the application of cyanoacrylate glue, however, such technique is associated with risk of embolization and re-bleeding.

The aim of this study was to evaluate the efficacy and complication rate of combined injection of coils and cyanoacrylate glue in the secondary prophylaxis of gastric fundus variceal bleeding.

Single-center retrospective review of prospectively collected data investigating consecutive patients that underwent EUS-guided treatment of gastric fundal varices with combined injection of coils and cyanoacrylate glue March 2018 and June 2018, at an Academic Institution. A trained operator performed procedures. Standard diagnostic upper endoscopy was first performed. EUS was performed using a forward-viewing curved linear array echoendoscope. Active flow within GFV was confirmed by color Doppler before treatment. The transesophageal approach was preferred. EUS-directed intravascular puncture of the GFV was performed using a standard FNA needle (19G) and two embolization coils 14 mm were delivered into the varix through the FNA needle. The immediate injection of 1 ml aliquots of n-butyl-cyanoacrylate after coil deployment was made through the same needle. The main outcomes measured were hemostasis, obliteration on surveillance EUS, post-treatment bleeding rate and adverse events.

The technical success occurred in 6/6 cases (100%) and the therapeutic success in 6/6 cases (100%). There were no adverse events. Control with echendooscopy at 8 weeks showed no doppler flow in all six cases. During the follow-up period (156 days, range 56 – 206), there was no recurrence of bleeding. EUS-guided treatment of gastric fundal varices with combined injection of coils and cyanoacrylate glue proved to be safe and effective in this small series of cases. Especially in patients with portosystemic shunt, combined EUS-guided treatment should be considered.

OP71V UNDERWATER RESECTION OF DUODENAL SUBMUCOSAL TUMOR AND ENDOSCOPIC FULL THICKNESS SUTURING

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A 61-year-old man was referred to our institute for subepithelial lesion of the duodenal bulb. Echographic imaging showed a 15-millimeter in diameter, homogeneous, hypoechoic lesion of the fourth layer of the inferior wall of the duodenal bulb. The EUS-guided fine needle aspiration showed a gastrointestinal stromal tumor (GIST). The increasing in size of the GIST with respect to the previous examination indicated resection, which remains the only modality that can offer a permanent cure of GISTs, and avoid tumor rupture and injuries to the pseudocapsule.

Considering the will of the patient and in order to avoid major surgery, a multidisciplinary team (endoscopist, oncologist, and surgeon) proposed an endoscopic mini-invasive approach. The procedure was performed under general anesthesia with administration of prophylactic antibiotics. Dissection was performed using an O-type HybridKnife (Erbe Elektromedizin, Germany) and we just and only inflate saline solution in the lumen in order to prevent retroperitoneal CO2 leak and the consequent subcutaneous emphysema. We performed a full-thickness resection to achieve a radical oncological resection. The excision resulted in a complete duodenal wall defect, about 25 x 25 mm in length, which was closed with tree endosutures placed using OverStitch Endoscopic Suturing System (Apollo Endosurgery, USA). In the post-procedural phase, the patient developed hypochondriac pain easily controlled with single dose of ibuprofen and oral intake was restarted in the fourth post-operative day. In the successively two months follow-up the patient remained asymptomatic.

In conclusion, endoscopic full-thickness resection of duodenal GIST appears to be safe even if skill demanding and can be a valid mini-invasive alternative to surgery.

OP72V MULTIPLE OVER-THE-SCOPE CLIPS (OTSCs) AS FIRST-LINE THERAPY OF WIDE DUODENAL BLEEDING ULCER IN ANTICOAGULATED PATIENT: A VIDEO REPORT

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The Over-The-Scope Clip (OTSC, Ovesco Endoscopy GmbH, Tübingen, Germany) is a safe and effective tool for the treatment of bleeding and perforations of the gastrointestinal (GI) tract. Concerning GI bleeding, it is recommended as rescue therapy after failure of primary hemostasis, but it is also useful as first-line therapy, particularly in high-risk lesions located in difficult sites (i.e. angleus, posterior duodenal wall) or in high-risk patients (ongoing anti-thrombotic therapy).

To the best of our knowledge, the successful placement of 3 adjacent OTSCs as primary hemostasis of a wide high-risk duodenal ulcer has not been described in medical literature.
Here, we report the case of a 76-years-old man hospitalized for pneumonia complicated by new-onset atrial fibrillation. After the beginning of anticoagulation therapy, melena and anemia occurred. Emergency upper GI endoscopy showed a wide (40 mm in diameter) Forrest Ia ulcer, with 3 bleeding vessels, on the supero-anterior duodenal wall, near to the Vater papilla. Considering the overall high risk of therapeutic failure and rebleeding, three non-traumatic 11/6 mm OTSCs adjacent to each other were successfully deployed with suction technique, paying attention to avoid any involvement of Vater papilla. Complete hemostasis was obtained and no lumen stenosis occurred.

Few days later, second endoscopic look confirmed the 3 OTSCs with progressive ulcer’s healing and the patient was discharged home on anti-thrombotic therapy.

In conclusion, even though the procedure is challenging, the closely placement of 3 OTSCs is feasible and effective as first-line treatment of wide high-risk ulcer in patient ongoing anti-thrombotic therapy. However, particular caution is necessary to avoid biliary and/or pancreatic injuries.

**OP73V ENDOSCOPIC REMOVAL OF MIGRATED ADJUSTABLE GASTRIC BANDING**

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**Background and aims** Intragastric band migrations or dysfunctions are common long-term complications of laparoscopic adjustable gastric banding (Lap-Band) that classically require surgical treatment. In this video case we describe the endoscopic removal of partially eroded Lap-Bands.

**Material and methods** We present the case of a 61-years old female that underwent a Lap-Band in 2002 for morbid obesity (weight 150 Kg, BMI 55.1). In November 2017 she had abdominal pain and an EGD showed erosion of the gastric mucosa and partial intragastric migration of the Lap-Band (>50%).

After surgical removal of the subcutaneous reservoir an endoscopic procedure was planned to remove the migrated gastric band. The procedure was performed under general anesthesia, with CO2 insufflation and using a therapeutic gastroscope (GF-TT 160, Olympus, Japan).

**Results** The ring was captured with a guidewire (Jagwire, Boston Scientific, MA) under endoscopic control and fluoroscopic control in a ‘loop shape’. The endoscope was then removed, and a mechanical lithotripter (Endobair, London, UK) was placed over the 2 extremities of the wire and a biliary lithotripsy device was used to cut the migrated band. The band was pushed into the stomach, captured with a snare and pulled out. There were no procedure related complications.

**Conclusions** Endoscopic removal of intragastric migrated Lap-Band is safe, repeatable and procedure is a viable alternative over surgery.

**OP74V ENDOSCOPIC TREATMENT OF A DIVERTICULAR OESOPHAGEAL Duplication**

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**Aims** Oesophageal duplications are rare congenital malformations, presenting as cystic, tubular or diverticular. Oesophageal duplications can remain asymptomatic for decades, and clinical manifestations can occur at any moment.

**Methods** We present the case of a 24-year-old man with an oesophageal duplication, who received successful endoscopic treatment.

The patient, with mental retardation, had a history of dysphagia since the childhood. Dysphagia worsened recently, and was associated with regurgitation and abdominal pain. For this reason, he underwent barium oesophagram and esophagogastroduodenoscopy that showed a paraesophageal diverticulum suggestive for diverticular oesophageal duplication.

Open surgery was attempted, but eventually the diverticulum was not excised, being the resection considered too dangerous.

The patient was thus referred to our Unit.

Preliminary esophagogastroduodenoscopy confirmed the presence of a diverticulum, extended for 7 cm, and starting at 35 cm from the upper incisors. A cap-assisted seotomy was performed. The endoscopic procedure was done with the patient supine, under general anaesthesia. The septum between the original oesophageal lumen and the diverticulum was carefully cut with a needle-knife.

At the end of the procedure, endoscopic clips were placed at the base of incision, to prevent bleeding and perforation.

**Results** Post-operative course was uneventful. A water-soluble contrast study on first post-operative day confirmed the absence of leakages or stasis into the diverticulum. On second post-operative day the patient started oral feeding and, two days later, he was discharged.

Six months after the treatment he is in good clinical conditions, having normal diet, without dysphagia or regurgitation.

**Conclusions** To our knowledge, this is the first report of a completely endoscopic treatment of diverticular oesophageal duplication. The procedure was relatively easy and extremely rapid. Recovery after the operation was very quick, with an early oral feeding. This procedure should probably be considered as first line therapy of this rare disorder.

**OP75V ENDOSCOPIC CLOSURE OF COMPLEX OESOPHAGO-PLEURO-CUTANEOUS FISTULA**

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**Aim** Oesophageo-pleural fistula is a difficult complication to treat in post gastrectomy patients, often requiring surgical interventions. However, recent advances mean that endoscopic techniques can provide a safe and effective alternative. Here, we describe a case of successful endoscopic closure of an oesophago-jejunal-pleurocutaneous fistula using multimodality endoscopic closure.

**Methods** A 64-year-old lady, who previously had a total gastrectomy for a neuroendocrine tumour presented with malnutrition and postprandial back pain. Investigations confirmed a fistulous tract at the site of oesphago-jejunal anastomosis into the right pleura which was tracking into the posterior thoracic wall.

Initial attempts with naso-jejunal feeding as well as three attempts of fibrin glue injection failed to heal the fistula. Malnutrition and poor functional status precluded surgical intervention. Hence, endoscopic closure of fistulous tract was attempted.

After careful inspection, the tract was vigorously brushed using biliary cytology brush, to encourage formation of granulation tissue to assist healing. Argon plasma coagulation was then applied to the area around fistula opening. Surgifoam was then placed into the tract, followed by Fibrin glue injection. An OVESCO anchor was used to pull the opening of fistula and a 12T OVESCO clip was applied to the edges of the defect with constant soft suction to achieve watertight closure. Following deployment of an over the scope OVESCO clip, technical success was confirmed by direct endoscopic visualization and by fluoroscopic confirmation, showing no contrast extravasation.
Results Once normal feeding was established, the patient was discharged. She has been followed up at 2 weeks and a few months, with no evidence of recurrence of the fistula.

Conclusion Although surgery remains the preferred treatment for anastomotic fistulae, recent advances in endoscopic techniques have provided a safer and more effective alternative. This case demonstrates the safety and effectiveness of a multimodal endoscopic approach in the managing complex fistulae.

OP78 FUTURE KEY PERFORMANCE INDICES FOR DEVICE ASSISTED ENTEROSCOPY; WHAT WE CAN LEARN FROM CURRENT PRACTICE

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Aims: Introduction ESGE has recommended device-assisted-enteroscopy (DAE) is used to confirm and treat small bowel lesions. DAE is relatively new and lacks Key Performance Indices (KPI). Quality of DAE would have significant impact on patient outcome; assessment of current practice could highlight important future KPIs.

Methods DAE procedures from 2014 – 2017 were included. Electronic records were reviewed including small-bowel capsule-endoscopy (SBCE) reporting system, Demographics, indication, findings, histology, intervention and complication rates were documented. Data was analysed according to potential KPI and compared using a Chi2 test, a p < 0.05 was considered significant.

Results 251 DAE cases were reviewed; 146 (58%) male; mean age 59±17 years. Of DAE-procedures, 186 (74%) were antegrade; average depth of insertion was significantly longer 2.39 (0.97) vs. 1.69±0.66 m for antegrade versus retrograde, p < 0.0001 (95% CI 1.05 – 1.58). 83% (n = 206) had small bowel imaging. The overall diagnostic yield was 58% (n = 145); 30% (n = 74) involved a therapeutic procedure, and tattooing was undertaken in 36% (n = 99). Complications was low, 2 (0.8%); one post-polypectomy bleed and one mild pancreatitis.

Diagnostic yield was higher for patients with a prior SBCE (64%, n = 103/162) compared to both those with prior radiology (51%, n = 21/47) or with no prior small bowel imaging (47%, n = 42/89), p = 0.02, OR 1.95 (95% CI: 1.15 – 3.33). Therapeutic intent was achieved in 98%(n = 74/75) of cases including APC, polypectomies and tattooing for localisation. Independent trainees, under supervision or a consultant performed 21%, 49% and 30% of procedures respectively. Reporting of positive findings was significantly higher 66% vs. 49% (p = 0.02) by independent trainees.

Overall reporting quality was good with approach, indication and bowel preparation clearly documented in 99.6%(n = 250), while depth of insertion was reported in 95%(n = 238) and findings in 100%.

Conclusions DAE in our practice was effective and associated with few complications. Our data suggests that pre-screening with SBCE could be a future KPI, enhancing diagnostic yield and targeting approach.
Methods This is a retrospective review of chronic users of anticoagulants or antiplatelet agents who underwent VCE for SSBB. Small bowel findings were evaluated using Miracam VCE (Intromedic, Korea).

Results 264 patients (134 women, mean age 72.3 years, 55% occult SSBB) underwent VCE from January 2014 to March 2018 for SSBB. 162 out of 264 patients were taking antiplatelets or anticoagulants agents. 44 patients were taking 100 mg of enteric-coated aspirin, 24 taking thienopyridine (ticlopidine or clopidogrel), 39 taking aspirin combined with thienopyridine (combined group), 27 taking warfarin and 28 patients taking NOAC (20% dabigatran, 32% apixaban, 48% rivaroxaban). Diagnostic yield in this specific cohort was 54.9%. Relevant lesions were most frequently detected in the “combined” group (74.3%) among the five groups (aspirin group 52.2%, NOAC group 50%, warfarin group 48.1%, thienopyridine group 41.6%) (p<0.05).

Conclusions The risk of small bowel bleeding related to antiplatelet/anticoagulant therapy seems to be increased in patients taking the combination of aspirin and thienopyridine and preventive strategies in this group should be established. The risk related to novel oral anticoagulants seems to be similar to that for warfarin and aspirin alone.

OP80 PAN-ENTERIC CAPSULE IN PATIENTS WITH MELENA AND A NEGATIVE UPPER ENDOSCOPY: A PILOT STUDY

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Aims Melena can be caused both by bleeding from upper sources and from mid/lower gastrointestinal bleeding. Colonoscopy is frequently used to investigate melena after a non-diagnostic EGD but retrospective studies showed that its diagnostic and therapeutic yield is low. Aim of our study was to perform a pan-enteric capsule endoscopy (PCE) with PillCam Colon2 capsule and evaluate its ability to avoid unnecessary colonoscopies when performed on patients with melena after an initial negative upper endoscopy.

Methods Between January and September 2018 patients with melena, negative gastroscopy and the need to be hospitalized for drop of haemoglobin level, were prospectively included. After a negative upper endoscopy examination, a PCE was performed after a split, high-volume preparation. After the passage through the stomach, the capsule was “forced” to acquire images of the small bowel at a rate similar to that of current-generation small-bowel capsules.

Results 12 patients (8 female, mean age 76 years) met the criteria. Capsule was egested “on” in 11 out of 12 patients. PCE found small bowel findings in 6/12 patients (blood in lumen in 2 patients, angiodysplasias in 2 patients, ileal ulcer in one patient and jejunitis with substenosis in one patient); colon findings were revealed in 4 patients (polyps in 1 patient, diverticulosis with hermorrhagic stigmata in 1 patient, blood in caecum in 1 patient and right colon cancer in another patient) and both small bowel and colon findings in 2 patients. One patient had a negative, incomplete study. The pan-enteric study led to a double ballon enteroscopy in six cases and a colonoscopy in 5 patients.

Conclusions In this small, prospective, study, the PCE was useful to identify the site of bleeding in 92% of patients with melena and a negative gastroscopy and was able to guide the subsequent endoscopic treatments. In particular, PCE resulted in less unnecessary colon investigations.

OP81 COMPARISON OF THE DIAGNOSTIC YIELD OF “PILLCAM SB3” AND “OMOM” CAPSULE ENDOSCOPY IN SMALL BOWEL BLEEDING

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Aims Capsule endoscopy (CE) is considered the gold standard for the diagnosis of small bowel bleeding (SBB). The CE Pillcam SB3 has a diagnostic yield above 80% for SBB. CE OMOM offers an adequate diagnostic yield with a lower price.

The objective of this study is to compare the diagnostic yield of the Pillcam SB3 and OMOM CE in SBB.

Methods This is a prospective, comparative, observational, randomized and blinded study. Patients with suspected SBB were included. All the patients were given randomly both CE (OMOM Smart Capsule 2 and Pillcam SB3) with a difference of 24 hours between them and were read by two endoscopists. Saurin’s classification was used to divide the findings into P2, P1 and P0. The diagnostic yield and functionality between the two CEs were analyzed.

Results We included 20 patients with SBB, 45% female and 65.3 years old. Small bowel complete visualization was achieved in 18 SB3 and in 19 OMOM (p = 0.548). The median intestinal transit time was 355 with SB3 and 240 with OMOM (p = 0.445). The battery time was significantly longer with SB3 (821 vs. 703 minutes, p<0.001) and the download time was shorter with the OMOM (31 vs. 117 minutes, p<0.001). Both CEs presented a failure. The cause of the bleeding was identified in 18 SB3 (90%) and 16 OMOM CE (80%) (p = 0.331). P2 lesions were observed in 12 SB3 (60%) and 11 OMOM (p = 0.749). P1 lesions were identified in 3 patients with both capsules and extraintestinal lesions were found in 3 patients with SB3 and in 2 with OMOM (p = 0.633).

Conclusions No significant differences were found between the two CEs for the identification of the P2 lesions. Significant differences were observed in the battery life and the download time of both ECs.

OP82 THE RELATION BETWEEN SMALL BOWEL CAPSULE ENDOSCOPY TRANSIT TIME AND DIAGNOSTIC YIELD AMONG PATIENTS PRESENTED WITH IRON DEFICIENCY ANAEMIA

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Aims Investigate small bowel capsule transit times in relation to diagnostic yield and detection of angiodysplasias.

Methods We retrospectively reviewed small bowel capsule endoscopy (SBCE) reports of patients referred with iron deficiency anaemia (IDA) between April 2011 and April 2017 to our center. Exclusion criteria were; tests with capsule retention, inadequate intestinal views due to poor bowel preparation and unrecorded small bowel transit time (SBTT). We assessed demographics, significant outcomes that explain IDA, SBTT and number of detected angiodysplasias (AD). A positive diagnostic yield (PDY) was detection of a significant pathology that explains IDA.

Results We investigated a total of 766 SBCE reports with indication of IDA. Capsule retention was recorded in thirteen patients (1.7%). A total of 675 reports were analysed following the exclusion of 91 SBCE procedures as per the protocol above. Mean age was 61.6 years +/- 13.6. Male to female ratio: 313/362. The overall PDY was 24.3% (164/675) with a mean small bowel transit time (SBTT) of 236.73 minutes +/- 88.81. Mean SBTT was significantly higher in those with a PDY compared to those without (254.6 min +/- 89.2 vs. 231 min +/- 88, P value 0.003). While mean Age was significantly higher in those with a PDY (63.6 yrs +/- 14.2 vs. 63 yrs +/- 13.3, P = 0.029), Gender did not seem to have an impact on the outcome (Males = 24.9% vs. Females = 23.7%, p = 0.71). On subgroup analysis, SBTT did not influence the number of AD lesions detected (267.8 min +/- 103 for a single AD vs 243.5 min +/- 82.3 for multiple ADs, P = 0.17).

Conclusions In patients with IDA undergoing SBCE, identifying a clinically significant pathology increases significantly with the increase in SBTT and Age. We recommend either repeating test using bowel anti-motility drug or considering alternative diagnostic methods in tests with rapid SBTT.
OP83  CECDAIIC – A NEW SCORE FOR PANENTERIC EVALUATION IN CROHN’S DISEASE PATIENTS

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Aims Crohn’s Disease (CD) is a chronic and progressive disease. Panenteric capsule endoscopy has been used to assess both the small and large bowel in a single examination. The Capsule Endoscopy Crohn’s Disease Activity Index (CECDAI) was initially devised to measure mucosal disease activity in small bowel, although in 2018 it was extended to the colon for standardization of inflammatory activity (CECDAIc).

The aim of this study was to apply the CECDAIc in a cohort of CD patients that underwent panenteric capsule to evaluate the inter-observer agreement among 3 observers and the correlation between this score and inflammatory parameters.

Methods CECDAIc was calculated after dividing the bowel in 4 segments (1 = proximal small bowel, 2 = distal small bowel, 3 = right colon, 4 = left colon) and according to the formula defined by the authors (A1 xB1+C1)+(A2xB2 +C2)+(A3xB3+C3)+(A4xB4+C4). A-inflammation; B-extent of disease and C-presence of strictures.

The videos were read and scored by the 3 independent and experienced operators, blinded to the results of the standard workup.

Statistical analysis was performed with SPSS, using Kendall’s Coefficient to evaluate the interobserver agreement. Spearman correlation (rS) was used to access the correlation between the score and inflammatory biomarkers.

Results Included 22 patients, 59.1% (n = 13) male gender with median age 28.0 (17 – 54) years. In 3 patients (13.6%) the capsule was not exteriorized within the battery time. The median CECDAIc score was 9.17 (0 – 37). The overall CECDAIc score Kendall coefficient was 0.94, demonstrating a statistically significant (p<0.001) excellent agreement between the 3 observers.

We found a very good correlation between CECDAIc and Calprotectin (rS = 0.82; p = 0.012) and a moderate correlation with C-reactive Protein (rS = 0.50; p = 0.019).

Conclusions CECDAIc is a new score with excellent inter-observer agreement and with a strong correlation with calprotectin. These characteristics, associated with its ease of application, may enable CECDAIc to become the tool of choice when reviewing panenteric capsule endoscopy, in order to more accurately and objectively assess CD inflammatory activity.

OP84  THE ROLE OF CAPSULE ENTEROSCOPY IN COELIAC DISEASE: RESULTS OF A PROSPECTIVE STUDY IN A TERTIARY REFERRAL CENTER

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Aims Coeliac disease (CD) is a chronic enteropathy, rarely complicated with refractory disease (RCD type1, 2) and malignancies. Capsule enteroscopy (CE) is a useful tool to evaluate patients with persistence or recurrence of symptoms despite an ongoing gluten free diet (GFD). The aim of this study was to evaluate the diagnostic performance of CE in detecting CD-related complications.

Methods Between 2014 and 2017 we prospectively enrolled patients undergoing CE for suspected complicated CD, non-adherence to GFD or for follow-up in known RCD. CE was defined as positive in case of CD-related findings in SB (i.e. atrophy, erosions, ulcers or masses). Patients with a final diagnosis of RCD or malignancy were defined as complicated CD.

Results 121 CD patients were enrolled and 143 CE were performed. 61% of patients underwent CE for suspected CD complication, 25% for non-adherence to GFD and 14% for RCD follow-up. The mean follow-up time after CE was 13 ± 9 months. As a result, 17% were diagnosed as complicated CD (11 RCD-type1, 8 RCD-type2 and 2 lymphoma). CD-related findings were detected in 55%. CE sensitivity for the detection of mucosal atrophy was 62% and specificity was 81%. The incidence of complications in patients with suspected complicated CD and non-adherence to GFD was 5.7%. Among patients with known RCD, two patients (1.6%) developed EATL. Patients with positive CE were significantly older at CD diagnosis compared to patients with negative CE (p = 0.005). Moreover, CD-related findings were more frequently detected in patients aged > 50 years old (p = 0.01). Any statistical correlation was found with positive CD serology and incorrect GFD (p > 0.05).

Conclusions CE plays a pivotal role in detecting atrophy, extension of SB lesions and in identifying CD-related complications. According to our results, complicated CD is an uncommon condition; however patients aged > 50 years old and with older age at CD diagnosis should be considered at higher risk of complications, thus accurately investigated with CE.

OP85  HIGH REBLEEDING RATE IN PATIENTS EVALUATED FOR OBSCURE GASTROINTESTINAL BLEEDING AFTER A FALSE-NEGATIVE DEEP ENTEROSCOPY

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Aims Data on the long-term outcomes after a false-negative enteroscopy in obscure gastrointestinal bleeding (OGB), following capsule endoscopy (CE) with positive findings is scarce.

Aim To evaluate rebleeding rate, risk factors and characteristics of rebleeding in OGB patients with false-negative enteroscopy after positive CE.

Methods Retrospective single-center analysis of 24 patients with false-negative enteroscopy, after a positive CE. Patients: 62.5% female, median age 64.5 years-old (IQR 50.2 – 74.0), 37.5% presenting with overt-OGB.

Results Previous CE findings: subepithelial lesions (n = 9), blood (n = 6), inflammatory lesions (n = 5), angioectasias (n = 2), polyps (n = 2). The lesions were isolated in 20 patients and multiple in 4, and located in duodenum (n = 1), jejunum (n = 1), ileum (n = 11), and multiple segments (n = 2). Enteroscopy was performed via the oral route in 15 patients, anal route in 8, and oral + anal in 1 patient. 13 patients had no findings at the enteroscopy, and 11 patients had non-significant findings.

Rebleeding occurred in 45.8% (n = 11). The rebleeding rate at 1 month, 1, 2 and 4 years was 20.8%, 25.2%, 35.9%, 50.6% and 62.9%, respectively. 90.9% (n = 10) of rebleeding patients underwent further radiological/endoscopic evaluation, of which only 4 had a conclusive diagnosis and treatment (2 vascular lesions and 2 small-bowel tumors). Rebleeding patients had higher median transfusion requirements (p = 0.001) and lower hemoglobin (p = 0.02) [4 IQR 2 – 8], 7.7 IQR [6.2 – 8.8]) than non-rebleeding patients [0 IQR 0 – 1], 10.3 IQR [8.2 – 11.0]), respectively and presented more often with overt-OGB (p = 0.001, 88.9% vs. 20%). No association between the presence of comorbidities or the use anticoagulants/antiplatelet drugs and rebleeding was found.

Conclusions Patients with a false-negative enteroscopy have a high rebleeding rate. Despite further evaluation after a rebleeding episode, a conclusive diagnosis is obtained in only 36.4% of the patients. Patients with overt-OGB,
lower hemoglobin and higher transfusion requirements have higher rebleeding rate. These patients need close follow-up.

**OP86 NEED FOR ENTEROSCOPY IN OBSCURE DIGESTIVE HAEMORRHAGE: VALIDATION OF DISCRIMINATIVE SCORE**

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**Aims** Capsule endoscopy (CE) is the first-line diagnostic method in obscure GI bleeding (OGIB). Balloon-assisted enteroscopy may also be weighted, however, its use is not always necessary. Uchida et al. score recently described for enteroscopy need after CE for OGIB, includes the type of OGIB (occult/manifest), blood transfusion and CE findings. The present study aims to evaluate and validate the proposed score as discriminator for enteroscopy need in OGIB.

**Methods** Retrospective, unicentric study including all CE performed for OGIB between 2010 – 2017. Demographic, clinical and analytical data as well as CE reports were analyzed. The proposed score was calculated and acuity in patient selection for the need of enteroscopy was assessed. Enteroscopy was considered necessary according to the criteria established by Uchida et al.

**Results** 207 patients were selected, 187 with OGIB. 54.0% (n = 101) were female, mean age 64.5 ± 15.1 years. Mean hemoglobin 8.5 ± 2.1 g/dl. Occult OGIB was the indication for CE in 71.5% (n = 148), manifest OGIB in 28.5% (n = 59). Enteroscopy was considered necessary in 53.1% (n = 110). OGIB type, blood transfusion requirements and CE findings were significantly associated with the need for enteroscopy (p < 0.001). The score ranged from 0 – 7, with mean = 2.3 ± 1.9. The proposed cutoff of 2.5 allowed differentiation between patients requiring enteroscopy (p < 0.001), with sensitivity 78.4%, specificity 84.6%, positive predictive value 81.7% and negative predictive value 81.6%. Enteroscopy was required in 81.7% of patients with a score > 2.5 and 18.4% with a score < 2.5. The area under the ROC curve for predicting the need for enteroscopy was 0.81 (95% CI, 0.75 – 0.88, p < 0.001).

**Conclusions** The present data support the use of the score proposed by Uchida et al., through a cutoff of 2.5, as a predictor of the need for enteroscopy. It’s use in OGIB may allow a more efficient patient management.

**OP87 CLIP CLOSURE OF LARGE NON-PEDUNCULATED COLON POLYPS WITH AVERAGE AND HIGH RISK OF DELAYED BLEEDING**

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**Aims** The efficacy of clip closure (CC) of the mucosal defect after colonic endoscopic mucosal resection (EMR) to prevent a delayed bleeding (DB) is unclear. Previous studies included unselected cases with a wide range of DB risks. Our aim was to evaluate the efficacy of clip closure after EMR of large (>= 20 mm) non-pedunculated colon polyps (LNPCP) in selected cases with average or high risk of DB.

**Methods** Multicentre single blind randomised controlled clinical trial. The bleeding risk was established using a previous published score (Albeniz et al. CGH 2016). The inclusion criteria were consecutive cases of EMR of LNPCP>=20 mm with average or high DB risk, defined as a score>=4. A sample size of 200 cases of EMR of LNPCP>=20 mm was estimated. The participants were randomised 1:1 to complete mucosal defect clip closure (CC) or control groups. The main outcome measure was the DB rate. The intention to treat (ITT) analysis included all randomised participants and the per protocol (PP) analysis included cases that achieved a complete mucosal closure.

**Results** A total of 210 cases were included in 11 hospitals (104 CC, 106 control). Both groups were comparable in terms of baseline characteristics. In the CC group, 54% achieved a complete closure, 31% partial closure and 15% failure to close. In the ITT analysis, DB risk was 11.3% vs. 5.8%, p = 0.015 in control and CC groups respectively. In the PP analysis, DB risk was 11.3% vs. 1.8%, p = 0.036 in control and CC groups respectively.

**Conclusions** Complete clip closure of the mucosal defect is effective to prevent a delayed bleeding after a large colonic endoscopic mucosal resection with average or high delayed bleeding risk.

However it is not possible to achieve a complete closure in roughly half of the cases due to the great size or the difficult localization.

**OP88 ELECTROCAUTERY SETTING DOES NOT AFFECT EFFICACY AND SAFETY OF ENDOSCOPIC RESECTION OF LARGE COLORECTAL POLYPS**

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**Aims** The type of electrocautery setting that should be used for polyp resection has long been a matter of debate. It remains unknown whether the type of electrocautery setting affects resection efficacy, risk of adverse events, or recurrence rates. We aimed to compare two commonly used electrocautery...
settings for endoscopic mucosal resection of large colorectal polyps in a multicenter, randomized trial.

Methods Patients with a ≥20 mm non-pedunculated colorectal polyp were randomized in a 2 × 2 design to clip closure or no clip closure of the mucosal defect (reported at DDW 2018) and to one of two electrocautery settings: forced coagulation or Endocut (ERBE). Related to electrocautery setting, the primary outcome was the incidence of severe adverse events during or within 30 days following the procedure (per patient analysis). Secondary outcomes were technical resection characteristics and recurrence at first surveillance colonoscopy (per polyp analysis).

Results 928 patients (mean age 65, 59% men) were randomized, 919 patients completed 30-day follow-up, and 658 patients (71%) completed the first surveillance colonoscopy after a median of 6 months. Resection with Endocut more frequently caused intra-procedural bleeding than forced coagulation (17% vs. 11%, p = 0.02), while other technical outcomes were similar (e.g., complete resection, piecemeal resection, need for adjunctive means, time of resection). Severe adverse events occurred in 7.3% and 8.0% in the respective groups, with no difference in the occurrence of types of events. Similarly, no difference was seen in polyp recurrence at surveillance colonoscopy, which was observed in 17.7% in the Endocut group and 17.5% in the forced coagulation group.

Conclusions This first randomized trial on electrocautery settings for the resection of large non-pedunculated colorectal polyps showed a difference in intra-procedural bleeding; however, neither setting was superior with respect to important safety and efficacy outcomes. Selection of electrocautery setting may therefore be based on expertise and preference of the endoscopist.

OP91 CLINICAL MANAGEMENT OF COLORECTAL POLYPS: RESULTS OF AN INTERNATIONAL SURVEY

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Aims To better understand endoscopists opinion regarding cancer risk of diminutive polyps, current use and barriers for implementation of the resect-and-discard strategy and preferred polypectomy approaches.

Methods A survey using Google Form was distributed through national and international endoscopy, gastroenterology and surgical societies. Study domains included demographics and practice characteristics, perception of cancer risk for diminutive polyps, uptake and barriers to the resect-and-discard strategy, preferred polypectomy techniques for 1–20 mm polyps and uptake of novel techniques, such as cold snare polypectomy.

Results 808 endoscopists participated in the survey. 48.4% (95% CI 45.0%-51.9%) of endoscopists believe that leaving diminutive polyps in place is associated with an increased cancer risk and 54.7% (95% CI 53.6%-60.4%) believe that doing so within current CT-colonography screening increases associated risk of cancer. 80.3% (95% CI 77.5%-83.0%) of endoscopists believe that using the resect-and-discard strategy for diminutive polyps will not increase cancer risk. However, 84.2% (95% CI 81.6%-86.7%) of endoscopists are presently not using this strategy and 59.9% (95% CI 56.5%-63.2%) do not believe it is feasible for use in general practice. Main barriers to implementation were: being afraid of making a wrong diagnosis (44.6%), concerns of potential medico-legal issues (53.8%) and being afraid of giving wrong surveillance intervals (58.3%). 87.5% (95% CI 85.2%-89.8%) of responders reported an increased use of cold snare polypectomy in the past 5 years. Cold snare polypectomy is the most frequently applied polypectomy technique for 4 to 5 mm and 6 to 10 mm polyps (67.0% (95% CI 63.7%-70.2%) and 55.2% (95% CI 51.8%-58.6%) respectively).

Conclusions Half of endoscopists think that leaving diminutive polyp might increase the risk of cancer. The majority do not use the resect-and-discard strategy and think it is not feasible for clinical implementation. Cold snare polypectomy has become the preferred polypectomy technique for 4 to 10 mm polyps.

OP89 THE SAFETY OF COLD SNARE POLYPECTOMY (CSP) ON ANTIITHROMBOTIC THERAPY

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Aims Cold snare polypectomy (CSP) is a safer and more efficacious polypectomy technique without electrocautery, therefore it is widely used for the removal of small polyps (<10 mm). Recent studies have revealed that delayed bleeding and perforation are few observed in CSP. However the safety of CSP in patients who are on antithrombotic therapy have not been fully evaluated. The aim of this study was to determine the safety of CSP in patients who are currently on antithrombotic therapy.

Methods 3021 consecutive patients with colorectal polyps (<10 mm) were removed by CSP between March 2016 and Oct 2018. We retrospectively assessed the characteristics of polyps, histological results, and delayed bleeding rates.

Results 5706 polyps in 3021 patients (2266 males and 755 females) were removed by CSP. There were 1197 polyps (19.4%) in 586 patients (antiplatelets to 155, anticoagulants to 83 and both to 28 patients) in the antithrombotic group (group A) and 4509 polyps (80.6%) in 2435 patients in the non-antithrombotic group (group B). Delayed bleeding occurred in 0.51% (3/586) of patients in group A and 0.12% (3/2435) of patients in group B, showing no significant difference (p = 0.09). The patients delayed bleeding occurred in Group A included 2 aspirin users with 2 polyps and 1 aspirin plus rivaroxaban user with 2 polyps. No delayed bleeding occurred in patients on other antithrombotic agents or receiving heparin bridging. There was no significant difference between delayed bleeding rates in group A and group B. No delayed bleeding cases required transfusion and surgery. None of the followings correlated with delayed bleeding: age, gender, polyp location, size, morphology, histology, number of polyps resected.

Conclusions CSP is safety technique for removal of diminutive or small polyp even if patients receive antithrombotic therapy. And without cessation of the antithrombotic therapy, it is possible to reduce the risk of thromboembolism.

OP90 3D POLYPECTOMY: RANDOMISED COMPARISON TO 2D POLYPECTOMY IN AN EX-VIVO MODEL

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Aims Three-dimensional (3D) visualisation has been established for laparoscopy, but not for endoluminal flexible endoscopy. In the actual study we investigated the effects of 3D imaging on endoluminal endoscopic procedures.
Methods The study was conducted as an experimental endoscopic study in an ex-vivo porcine stomach model. Artificial polyps were created by band ligation. For endoluminal polypectomy a commercially available 3D laparoscope from Storz was inserted in a specially designed tube with additional working channels for endoscopic instruments. The task was to perform six polypectomies with two-dimensional (2D) and 3D visualisation with an electric endoscopic snare in a prospective randomized cross-over manner. Participants consisted of ten experts (group 1) and ten novices (group 2).

Duration and completeness were assessed. Before and after each visualisation method the participants had to answer questionnaires and perform tests to evaluate their concentration level and strain.

Results 3D visualisation allowed for significantly faster polypectomy (3D vs. 2D: mean 27 s vs. 36 s; \(p = 0.029\)) and led to a significantly higher frequency of complete polypectomy (3D vs. 2D: 106/120, 88% vs. 81/120, 68%; \(p < 0.01\)) in both groups. Regarding overall workload, the NASA-Task-Load-Index showed similar figures for 3D and 2D. According to the participants, 3D enabled significantly better depth perception than 2D. We noticed blurring at close distance for 3D and a tendency to cause higher eye strain.

Finally, most of the participants favoured the 3D visualisation.

Conclusions 3D imaging may facilitate endoscopic procedures by improving speed and completeness. We did not find increased mental workload and most of our participants preferred the 3D method. The difficulties concerning blurring at close distance could be alleviated by technological progress. Therefore, the development of a flexible 3D endoscope seems promising.

**OP92 SUCCESSFULLY PREDICTING RECURRENCE OF COLORECTAL POLYPS AT RESECTION- A UK TERTIARY REFERRAL CENTRE EXPERIENCE**

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**DOI** 10.1055/s-0039-1681269

**Aims** To identify colorectal polyp features during a complex EMR which could be associated with its recurrence.

**Methods** A retrospective study looking at patients who underwent EMR for complex colorectal lesions from a period of January 2007 to July 2018. It included patients referred to a single endoscopist primarily due to the complexity of the polyp (SMSA level 3 or 4) who underwent a colorectal EMR. It included patients undergoing an ESD with an en bloc resection. Data was collected through the online endoscopy reporting system and pathology reporting system. Events like scarring, size and morphology were documented.

**Results** Total no of polyps resected: 668. Total cases of recurrences: 90 (13.7%).

**Tab. 1**

<table>
<thead>
<tr>
<th>Recurrence (n = 90)</th>
<th>No Recurrence (578)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scarring (n = 95)</td>
<td>20 (22.2%)</td>
<td>75 (13.3%)</td>
</tr>
<tr>
<td>Mean size (mm)</td>
<td>59.6</td>
<td>39.7</td>
</tr>
<tr>
<td>Accessibility</td>
<td>70 (77.73%)</td>
<td>439 (75.9%)</td>
</tr>
<tr>
<td>Morphology- Flat</td>
<td>49 (54.43%)</td>
<td>293 (50.73%)</td>
</tr>
<tr>
<td>Morphology- Sessile</td>
<td>39 (43.73%)</td>
<td>223 (38.63%)</td>
</tr>
<tr>
<td>Morphology- Pedunculated</td>
<td>2 (2.33%)</td>
<td>62 (10.75%)</td>
</tr>
<tr>
<td>Site- Rectum</td>
<td>51 (56.73%)</td>
<td>358 (62.6%)</td>
</tr>
<tr>
<td>Site- Colon</td>
<td>39 (43.35%)</td>
<td>228 (37.45%)</td>
</tr>
</tbody>
</table>

**Conclusions** This study provides crucial evidence in determining factors that could predict recurrence in patients with complex colorectal polyps. It shows that larger polyps and rectal polyps have higher recurrence and interestingly also proves scarring of a polyp may be an important factor in its recurrence. We also noted that scarred polyps had a higher rate of recurrence than non-scarred polyps (21% and 12%). This study may help us to develop a scoring system to predict recurrence.

**OP93 UNDERWATER ENDOSCOPIC RESECTION FOR COLONIC LESIONS IN DIFFICULT AND CHALLENGING SITUATIONS. MULTICENTER – PRELIMINARY RESULTS**

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**DOI** 10.1055/s-0039-1681270

**Aims** Underwater endoscopic resection (uEMR) avoids the need for submucosal injection, and it may be helpful in challenging situations such as non-lifting lesions, or difficult locations. The aims of the study were to assess the safety, utility and technical success rate of the underwater technique for the treatment of challenging colorectal lesions.

**Methods** Clinical, endoscopic and histological data were collected from cases of uEMR performed in 4 centers between January 2016 and July 2018. Inclusion criteria was lesions with no-lifting sign (if a previous endoscopic injection) that were poor candidates for classic EMR, difficult location (ileocecal valve or appendix) or lesions with a previous failed attempt for EMR in an expert center.

**Results** 60 uEMR in challenging situations were performed, of which 41 completed follow-up (mean 168 days) to date. The mean age of the patients was 66.14, being 68% men. There were 37 (61.67%) non-lifting lesions (including recurrent/residual lesions in ICV and appendix, and non-treated lesions), 17 (28.3%) appendicular or ileocecal valve lesions not previously treated, 1 (1.6%) intradiverticular lesion, 2 (3.3%) lesions in complex sigma and 3 (5%) residual lesion including ileocecal valve. The mean size (diameter) of the lesions was 19 mm, and the mean size (largest diameter) of the resection specimen was 15.3 mm (95% CI 13.68–16.99 mm) being the largest specimen of 30 mm in diameter. The histology showed T1 in 4 cases (one of good prognosis), HGD and intramusosal cancer in 8 cases, and no advanced histology (LGD, SSP/A without displasia) in the others. There were no major complications (no major bleeding nor perforations). The success of the technique was 98% with 3 recurrences, that were successfully re-treated endoscopically.

**Conclusions** Underwater endoscopic resection in the colon is a safe and useful technique for challenging colorectal lesions such as non-lifting lesions, appendiceal, ileocecal valve, diverticular, and difficult sigmoid locations.

**OP94 ROLE OF DOUBLE CHANNEL ENDOSCOPE (DCE) IN ENDOSCOPIC MCUCOSAL RESECTION (EMR) COMPARED WITH CONVENTIONAL SINGLE CHANNEL ENDOSCOPE (SCE): EFFECTIVENESS AND SAFETY**

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**DOI** 10.1055/s-0039-1681271

**Aims** EMR may present up to 25% complications and 15% recurrences. Polypectomy assisted with DCE has not been studied. Main objectives were determine clinical success and safety of EMR-DCE compared to SCE.
OP96 CLINICAL OUTCOMES OF RECTAL NEUROENDOCRINE TUMORS TREATED BY ESMR-L

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Aims The therapeutic strategies for the rectal neuroendocrine tumor (NET) have not been still established. We often use endoscopic submucosal resection with ligation device (ESMR-L) for treatment of rectal NET. We conducted this study to evaluate the clinical outcomes of rectal NET treated by ESMR-L.

Methods Between May 2002 and December 2017, 191 patients with 192 rectal NET (G1) underwent ESMR-L in our hospital. Firstly, we investigated association between clinicopathological characteristics including endoscopic findings and therapeutic outcomes. Curative resection was defined as R0 resection without LVI. Subsequently, the long-term outcomes after a 45-months follow-up period were also evaluated.

Results The average age was 52 years, and the majority were male (74%). Most of the lesions were located at Rb (82%), and the average size was 4.6 mm. Of the 192 lesions, 191 and 122 achieved complete and curative resection, respectively. Multivariate logistic regression analyses revealed that the tumor size ≤5 mm (OR: 2.96, 95% CI: 1.60 - 5.45, p=0.001) and presence of central depression (OR: 5.50, 95% CI: 1.68 - 18.0, p=0.005) are significantly associated with non-curative resection. 13 of the 70 lesions with non-curative resection underwent additional surgery, among which 2 cases had histological lymph node metastasis. No case had local or distant metastases during the follow-up period. With respect to complications, one perforation (0.5%) and 13 delayed bleeding (6.8%) were observed, but they were successfully managed conservatively.

Conclusions ESMR-L is a feasible measure as an endoscopic resection for rectal NET. Given that there was no recurrence without additional surgery in cases regarded as non-curative resection, observation without additional surgery might be allowed. Further investigations are needed to establish the indication of endoscopic treatment.

OP97 A PROSPECTIVE, RANDOMIZED, MULTICENTER STUDY COMPARING SEMS PLACEMENT WITH AND WITHOUT BILIARY SPHINCTERECTOMY IN PATIENTS WITH MALIGNANT BILIARY OBSTRUCTION: AN INTERIM ANALYSIS

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Aims Aim of the study was to investigate the outcomes of patients with malignant biliary obstruction undergoing self-expandable metallic stent (SEMS) placement with and without endoscopic sphincterotomy (ES). NCT number 03628001.

Methods This is an interim analysis of an ongoing multicenter randomized prospective study conducted in four international tertiary referral centers from March 2016 to October 2018 in patients with malignant distal biliary obstruction with indication to SEMS placement. Patients were randomized to ES prior to fully covered (FC) SEMS placement (ES, G1) versus FCSEMS placement leaving the papilla without (No ES, G2). The primary outcomes were immediate (periopercedural) and delayed (<30 days) post-ERC adverse events (AE) including PEP, SEMS migration, bleeding and perforation (defined according to the ASGE lexicon).

Results 152 patients (82 (54%) female) of mean age 69.7 (range 43–91 years) with distal malignant biliary obstruction were included in the study. FCSEMS were successfully deployed in all patients in both groups. 76 patients (G1) were randomized to perform ES before placement of SEMS, and 76 patients to no ES (G2). Overall, complications occurred in 24 (31.5%) patients in G1 and in 17 (22.3%) in G2 (p=0.0208). Although not statistically significant there was a trend toward increased risk of PEP in the G2 compared to the G1 (15.8% vs. 11.8%, p=0.4807). Fatal AEs occurred in 1 patient because of choledolithiasis in G1 and in 1 patient because of post ERC pancreatic fistula in G2.

Conclusions At interim analysis, placement of biliary FCSEMS without prior ES in patients with distal common bile duct obstruction showed a lower rate of cumulative AEs. On the other hand patients in G2 reported a higher incidence of PEP (although not statistically significant). We aim to complete enrollment to the target sample size before making final conclusions.
Introduction
The accuracy of brush citology (BC) plus intraductal forceps biopsy (IFB) in diagnosis of common bile duct strictures (CBDs) is about 60%. It is unknown whether the order of performing both methods improves accuracy.

Objective
To compare the accuracy of BC plus IFB sampling in diagnosis of CBDs regarding the order of perform both.

Main outcome measures
Accuracy of BC plus IFB sampling from CBDs.

Secondary outcomes measures
Sensitivity, specificity and accuracy of BC and IFB separately and combined.

Method
Open label randomized controlled trial.

Participants
Patients with CBDs.

Intervention
We randomly assigned patients to BC plus IFB or IFB plus BC sampling from CBDs.

Results
We included 130 patients. Age: 72.5 ± 13.84y; 54.6% men. The 63.1% of CBDs were malignant (48.8% pancreatic tumours, 48.8% cholangiocarcinomas and 0.2% others). The diagnostic accuracy, defined as the confirmation of the initial diagnosis during a follow-up by 6 months, reached 95.8% in benign strictures and 79.3% in malignant. Take ≥3 tissue samples increases accuracy in 7% respect take <3. Separately BC reached a 75.4% and IFB, 76.9%, which rise up to 85.4% in combination. There was no difference according to the order of method perform; BC plus IFB was 82.4% and IFB plus BC was 88.7%, p = n.s.

The specificity and PPV of BC and IFB was 100% while the sensitivity was 62.7% with BC; and 63.7% IFB, which increase until 78% when both methods were combined.

Conclusions
The order of perform brush citology plus intraductal forceps biopsy does not change the diagnostic accuracy in common bile duct strictures.

The diagnostic accuracy and sensitivity substantially increase when both methods are combined and ≥3 tissue samples are taken.

Methods
4 referral centers included 98 Spyglass DS cholangioscopy recordings performed for indeterminate biliary strictures (IDBS) whose final diagnosis was known by histology or follow-up for more than 1 year. 7 experts in cholangioscopy participated in the development of a consensual reading grouping 20 semilological criteria. The videos were analyzed individually by each expert after randomization according to the reading grid. A hypothesis diagnosis was issued for each examination. After a statistic analysis a second meeting with the same methodology were held for criteria validation.

Results
98 IDBS videos from 95 patients of mean age 66 years (13–89) were analyzed; there were 38 benign and 60 malignant strictures. The Sensitivity ranged from 68% to 81% and specificity from 55 to 71%. The univariate and multivariate analysis identified 4 significant criteria. One for benign lesions: the presence of endobiliary material odds ratio (OR)= 0.649; 95% confidence interval (CI), 0.427 – 0.988. Three for malignant lesions: villous pattern OR = 1.477; 95% CI, 0.98 – 2.21; irregular vessels OR = 2.042; 95% CI, 1.35 – 3.08; redish aspect OR = 1.67; 95% CI, 1.09 – 2.53.

Conclusions
Simple criteria’s could assist malignancy diagnosis and enhance the performance of cholangioscopic visual diagnosis of IDBS.

OP100 ENDOSCOPIC RADIOFREQUENCY ABLATION PROLONGS SURVIVAL IN PATIENTS WITH ADVANCED HILAR CHOLANGIOCELLULAR CARCINOMAS

Aims
Patients with an unresectable advanced hilar cholangiocellular carcinoma (CCC) suffer from a particularly short life expectancy. Endoscopic radiofrequency ablation (ERFA) of the malignant biliary obstruction may substantially prolong survival in these patients.

Methods
All CCC cases with an ERFA of the biliary tract, performed at our tertiary referral center between a six-year period from 2012 to 2017, were retrospectively analyzed. For survival analysis using Kaplan-Meier method, these cases were compared to historical control cases who received the endoscopic standard treatment of sole stent application. Historical controls were chosen from an equal time-period (from 2006 and 2011) in which ERFA was not yet available at our tertiary referral center.

Results
ERFA was performed in 32 patients with malignant biliary strictures that were mainly caused by Bismuth III and IV hilar CCCs (66%). 44% of these patients had multiple ERFAs accounting for an overall performance of 54 ERFAs. ERFA procedures were successfully completed in all cases, for a technical success rate of 100%. In all patients, endoscopic stents were applied (100%). Complications occurred in 18.5% of cases of which a post-interventional cholangitis was most frequently observed (11.1%) followed by cases with a post-interventional pancreatitis (3.7%). No mortalities occurred due to procedure-related side effects.

The case-control analysis revealed that the survival time of cases with unresectable Bismuth type III and IV hilar CCCCs (n = 20) treated with stent placement in combination with ERFA significantly prolonged survival in comparison to controls (n = 22) treated with sole endoscopic stent placement (342 vs. 221 days; p = 0.046).

Conclusions
ERFA significantly prolongs survival in patients with an unresectable Bismuth type III and IV hilar CCC. Therefore, it provides an easy-to-use, effective and safe palliative treatment option for these patients.
OP101 THE ROLE OF "ROSE" FOR ERCP-GUIDED BRUSHING ON INDETERMINATE BILIARY STRICTURES: EXPERIENCE OF A REFERRAL CENTER

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Aims Endoscopic Retrograde CholangioPancreatography (ERC), although nowadays used only for therapeutic purposes, still has a prominent diagnostic role in patients with indeterminate biliary strictures and no evidence of mass lesion. The use of biliary brush brushing is a safe, easy, cheap and fast way to acquire cytological specimen from the determination of the etiology, but the sensitivity can be as low as 50%. Rapid On-Site Evaluation (ROSE) of the sample has been used for years in referral centers for the determination of the adequacy of EUS-guided FNA cytological specimens, improving its sensitivity and specificity. Nevertheless, there are currently no studies evaluating its role for ERC brushing. The aim of this study was to assess the diagnostic yield of ERCP brushing of indeterminate biliary strictures when supported by ROSE.

Methods Retrospective single-center study enrolling consecutive patients undergoing ERC and brush cytology supported by ROSE for indeterminate biliary strictures, from January 1st 2010 to May 31st 2018. Data recorded included patient’s characteristics, clinical/radiological/ELS features. ERC features (structure features, number of brush passages, final cytology or histology when biopsy was performed as an adjunct, cholangioscopy or confocal laser endomicroscopy use, final diagnosis after surgery or follow-up). The diagnostic yield of ERC-guided brushing with ROSE was then calculated.

Results 96 patients underwent ERC for indeterminate biliary stenosis, 50% males, mean age 68.1 years, 80% having an extrahepatic biliary stricture. 90 patients underwent brushing+ROSE and were included in the analysis, with 86.7% of patients having an adequate sample at ROSE. The preliminary diagnostic yield calculated showed sensitivity = 80%, specificity = 82%, accuracy = 81%, positive predictive value = 92% and negative predictive value = 61%.

Conclusions The availability of ROSE in patients undergoing ERC with indeterminate biliary stricture without a mass lesion increases the diagnostic yield of brushing, decreasing the need of further procedures, such as cholangioscopy and confocal laser endomicroscopy and can, therefore, decrease costs and increase safety.

OP102 UNILATERAL VERSUS BILATERAL BILIARY DRAINAGE IN PATIENTS WITH BILIARY ANASTOMOTIC STRICTURES AFTER RIGHT-LOBE LIVING DONOR LIVER TRANSPLANTATION

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Aims Although there are usually two bile duct anastomosis sites, i.e. right anterior segment duct (RASD) and right posterior segment duct (RPSD) after right lobe (RL)-living donor liver transplantation (LDLT), studies comparing unilateral and bilateral biliary drainage are largely lacking. This study aimed to evaluate efficacy and safety of unilateral and bilateral biliary drainage in patients with biliary strictures following RL-LDLT.

Methods From January 2005 to December 2017, of the 232 patients suspected to develop biliary anastomotic strictures RL-LDLT at Seoul National University Hospital, 110 patients who have two duct-to-duct anastomosis sites including RASD and RPSD were enrolled. During follow-up, ERC was performed if biliary anastomotic strictures were suspected. Patients were classified into unilateral and bilateral biliary drainage group according to the results of first ERC. The clinical success rate, complication rate, and 180-day mortality were compared between the unilateral and the bilateral group.

Results The mean age at the time of LDLT was 54.2 years. The duration from LDLT to initial biliary anastomotic strictures was 215.6±187.3 days. At the initial ERC, unilateral drainage was performed in 55 (50.0%) patients and bilateral drainage in 11 (10.0%) patients. In unilateral drainage group, endoscopic retrograde biliary drainage to RASD was predominant. (41/55, 74.5%). There was no significant difference in clinical success rate (80.0% vs. 90.9%; P = 0.669), complication rate (16.4% vs. 18.2%; P > 0.999), and 180-day mortality (1.8% vs. 0%; P > 0.999) between the unilateral and bilateral drainage group. During follow-up, 71 patients (64.5%) required bilateral drainage more than once while only 27 patients (24.5%) reached resolution with unilateral biliary drainage.

Conclusions Most patients required bilateral biliary drainage more than once during follow-up while only one quarter of the patients were treated with unilateral drainage. An active attempt to drain bilaterally is needed in patients with biliary anastomotic strictures following RL-LDLT.

OP103 SEQUENTIAL MULTISTENTING TECHNIQUE FOR TREATING BILIARY ANASTOMOTIC STENOSIS FOLLOWING LIVER TRANSPLANTATION

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Aims Biliary complications following liver transplantation (LT) range from 8% to 35%. Anastomotic stricture (AS) is the most common complication. Endoscopic Retrograde Cholangiography (ERC) with sphincterotomy and pneumatic dilation with multiple stents placement is the gold standard for treating AS.; ERC/stent exchange should be repeated every three months to get the morphological recovery of the stenosis. The success rate is approximately 70%-80%. In patients responding to endoscopic therapy, the risk of AS recurrence is around 18%. We describe sequential multistenting technique as a novel cost-effective strategy, in which one additional stent is placed during sequential ERCS, without stent removal/exchange.

Aims AS resolution, endpoint was no (or minimum) waist on cholangiography and a 12-mm extraction balloon could easily pass through the anastomosis. 2. Clinical success, as the AS resolution plus the normalization of cholestatic indices (CI) for more than one month following the last procedure. 3. Recurrence, diagnosed by an increase in the CI plus imaging tests diagnostic for steatosis. 4. Adverse events clinically related with endoscopic treatment.

Methods Prospective observational study at single tertiary center. All consecutive patients with diagnosis of AS after LT, underwent sequential multistenting therapy. The patients included in the analysis had at least 6 months of follow-up.

Results From May 2012 to May 2018, 88/395 patients who underwent LT, developed duct-to-duct anastomotic stricture. These patients were consecutively enrolled and treated with sequential multistenting technique. Initial stricture resolution was achieved in 87 patients (98.8%) and all of them showed normalization of CI after one month by the end of endotherapy. The mean follow-up time was 989.4 days (SD ± 619.2). During follow-up, seven adverse events (8%) (five cholangitis, one migration and one cholestasis) and seven recurrences (8%) were recorded.

Conclusions Current study shows, in a large cohort of patients with AS post-LT, the high efficacy and the low recurrence rate of sequential multistenting technique.
**OP104 NO BENEFIT OF PERFORMING ENDOSCOPIC SPHINCTEROTOMY BEFORE STENT PLACEMENT IN PATIENTS WITH DISTAL MALIGNANT BILIARY STRICTURES: A META-ANALYSIS OF RCTS**

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**Aims** Endoscopic sphincterotomy (ES) before stent placement in patients with distal malignant biliary obstruction is still a controversial issue. Some authors suggested that ES before stent deployment has a protective role in avoiding the risk of post ERCP pancreatitis but this attitude is not currently evidence-based. We performed a systematic review and meta-analysis to investigate the role of ES versus non endoscopic sphincterotomy (NES) before stent placement in patients with distal malignant biliary strictures.

**Methods** We searched multiple databases (Medline, Embase, Cochrane) to identify RCTs comparing the execution of ES vs. NES before stent placement in patients with distal malignant biliary obstruction. Outcome measures were the risk of PEP, successful stent insertion, stent migration, cholangitis, bleeding and procedure time. Results were reported as odds ratios (OR) with 95% confidence intervals (95% CI) Fixed and random models were used as appropriate. Heterogeneity was assessed by measuring I².

**Results** We identified 4 RCTs for a total of 548 patients respectively randomized to ES (274) and to NES (274). No difference emerged in the rate of PEP (OR 0.62 95% CI 0.21 – 1.88), nor in stent migration (OR 1.71 95% CI 0.60 – 4.87), bleeding (OR1.18 95% CI 0.93 – 4.74) and successful stent insertion (OR 1.70 95% CI 0.60 – 4.79). Unfortunately, only one RCT reported bleeding and procedure time rates, favoring NES (p = 0.02).

**Conclusions** There is no increased risk of PEP in the NES group compared to and procedure time rates, favoring NES (p = 0.02).

**OP105 PHOTODYNAMIC THERAPY IN THE TREATMENT OF LARGE DUODENAL PAPILLA AND EXTRAHEPATIC BILE DUCTS CANCER**

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**Aims** Cancers of Vater’s papilla and extrahepatic bile ducts are hardly accessible tumor localizations characterized by extensive tumor growth and poor prognosis. Surgical resection provides limited success with rather high recurrence rate. Photodynamic therapy (PDT) is a new technique, providing both, adequate tumor destruction and minimal damage to surrounding tissue. The aim of this study was the development of PDT technique for the treatment of both Vater’s papilla and extrahepatic bile duct cancer in inoperable patients for improvement of their quality of life and increase of their survival time.

**Methods** PDT has been performed in 29 patients. The average age was 68.5 years. Cancer of Vater’s papilla was diagnosed in 20 patients, cancer of the common bile duct in 3 patients, cancer of the liver port in 1 patient, and cancer of the gall bladder in 4 patients. Photodizaine (a chlorin-e6 derivative) was used as photosensitizer, diode laser was used for irradiation via either endoscopic or transhepatic route. Patients were divided into several groups. Outcomes were assessed by determining the median survival.

**Results** The treatment was well-tolerated by the patients. The median survival time was 18 months (minimum -11 months, maximum – 24 months. There were no lethal outcomes. In patients who had only one PDT session during the year, the median survival was 12.5 months; in patients who had two or more PDT sessions, the median survival was 23 months.

**Conclusions** Results of PDT treatment for cancer of this localization are quite comparable with the results of radical surgeries and are better than palliative surgeries.

Decrease of tumor growth rate and longer survival period in patients with residual tumor after PDT treatment are determined by vascular mechanisms produced by PDT which lead to vascular thrombosis and impaired tumor blood supply, these factors provide long-term process stabilization. Repeated PDT courses significantly improve treatment results.

**OP106 DOUBLE STENTING SEEMS TO BE BETTER THAN DOUBLE BYPASS IN CASE OF COMBINED MALIGNANT BILIARY AND DUODENAL OBSTRUCTION: META-ANALYSIS AND SYSTEMATIC REVIEW**

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**Aims** To assess feasibility and optimal method of double stenting of malignant duodenal and biliary obstruction compared to surgical double bypass.

**Methods** A systematic literature search was performed to assess feasibility and optimal method of double stenting of malignant duodenal and biliary obstruction compared to surgical double bypass in terms of technical and clinical success, adverse events, reinterventions, and survival. A total of 72 retrospective and 8 prospective studies published until July 2018 were enrolled.

**Results** The technical and clinical success of double stenting was 97% (95% CI: 95 – 99%) and 92% (95% CI: 89 – 95%), respectively. Technical success showed no difference, but clinical success of endoscopic biliary stenting was higher than that of surgery (97% [95% CI: 94 – 99%] vs. 86% [95% CI: 78 – 92%], p < 0.001). Double stenting was associated with less adverse events (14% [95% CI: 9 – 19%] vs. 24% [95% CI: 16 – 34%], p = 0.033) but with more reinterventions (22% [95% CI: 17 – 27%] vs. 9% [95% CI: 3 – 18%], p < 0.01).

Mean survival was similar in the groups. No difference was found between technical and clinical success and reintervention rate of ERCP, PDT and EUS-BD. ERCP was associated with the least adverse event (4% [95% CI: 1 – 8%]), followed by PDT (10% [95% CI: 0 – 37%]) and EUS-BD (28% [95% CI: 17 – 41%]).

**Conclusions** In the difficult-to-treat cohort of patients with combined malignant biliary and duodenal obstruction, substantially high technical and clinical success rate can be reached with double stenting. ERCP should be recommended as the first choice for biliary stenting as a part of double stenting. Prospective comparative studies with well-defined outcomes and patient cohorts are needed to determine those who may benefit the most from double stenting.
OP107 ENDOSCOPIC SUBMUCOSAL DISSECTION OF GASTRIC TUMOURS: EXPERIENCE FROM THREE LARGE EUROPEAN TERTIARY CENTRES

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Aims We aim to review the efficacy and safety of ESD for early gastric neoplasia from three large European referral centres.

Methods Data was prospectively collected on an electronic database. We analysed this database and patient’s electronic record. Parameters related to ESD outcome were collected.

Results A total of 175 gastric neoplasia were resected between 2009 and 2017 (152 ESD, 23 hybrid ESD), 51.4% were in proximal stomach. Mean size was 29 mm. Only 13 (7.42%) were sub-epithelial lesions. Table (1) shows outcomes and procedure-related complications. The overall en-bloc resection, R0 (deep), and R0 (deep and lateral) rates were 92.5%, 83.4%, and 61%, respectively. Proximal location of the lesion was a predictor for R1 outcome (p value 0.011). Size of the lesion was not significantly related to the R0 rate. The overall adverse event rate was 11.3%. Bleeding occurred in 17 (9.71%) and perforation in 3 (1.71%) cases. 95% of these patients were treated conservatively or endoscopically, only 1 patient required surgical intervention for bleeding. There was no 30-day procedure related mortality. Recurrence at 3 months occurred in 7 patients (4%).

Conclusions In this large European gastric ESD series, we have demonstrated the feasibility and safety of this technique in a European setting. Lesion’s site within the stomach was a predictor of R1 outcome. Despite the low R0 rate, our recurrence rate is low and comparable to Japanese data. This suggests that western endoscopists are dissecting too close to the lesion’s margin and diathermy artefact could be leading to the increased R1 rate.

OP108 FEASIBILITY OF CONSCIOUS TRANSNASAL HYBRID ENDOSCOPIC SUBMUCOSAL DISSECTION FOR EARLY GASTRIC CANCER IN ELDERLY PATIENTS

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Aims Endoscopic Submucosal Dissection (ESD) is technically difficult and time-consuming procedure which is performed under sedation. Therefore, ESD has definite risks especially for elderly patients. Transnasal hybrid ESD without sedation maybe alternative therapeutic option for achieving, safe, easy and short-time en-bloc resection for superficial gastrointestinal neoplasms.

Methods After informed consent was obtained, transnasal Hybrid ESD was performed for elderly patients whose age were over 80 years old and clinical characteristics and outcomes were evaluated retrospectively. 10 gastric lesions were resected by transnasal Hybrid ESD between April 2016 and October 2018. All of the hybrid ESD steps were performed using a newly developed multifunctional snare ‘SOUTEN’ (Kaneka Medics, Tokyo, Japan) which is design to achieve Hybrid ESD which is available through the transnasal endoscope. The knobshaped tip attached to the loop top helps to stabilize the needle-knife, making it less likely to slip during circumferential incision and enables partial submucosal dissection.

Results The mean age was 83.7 ± 6.5 years old, the male to female ration was 7:3. The lesions locations were U/M/L:1/3/6. Mean tumor size and resected specimen size were 9.5 ± 3.2 mm and 19.6 ± 6.0 mm. And mean procedure time was 13.7 ± 3.1 min. En-bloc R0 resection rate were 100% respectively. In all patients, face scale was 1 and oxygen saturation could keep more than 95% during procedure, therefore oxygen administration was not needed.

Conclusions We confirmed favorable clinical outcomes of Hybrid ESD without sedation. We believe transnasal hybrid ESD without sedation is a useful therapeutic technique for early gastric cancer in elderly patients.

OP109 PREDICTIVE MODEL FOR NON-NEOPLASTIC PATHOLOGY RESULTS AFTER ENDOSCOPIC RESECTION OF EARLY GASTRIC CANCER

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Aims Rate of non-neoplastic pathology (NNP) results after endoscopic resection (ER) of gastric epithelial neoplasia (GEN) has been reported as 3–7%. However, pretreatment characteristics for NNP results have not been identified to date. The aim of this study was to develop a predictive model for NNP results after ER.

Methods Among 817 patients who underwent ER for GEN, factors associated with NNP results were identified by univariate and multivariate analyses. Weighted points considering β coefficient were allocated to each variables which were significant after multivariate analysis. Predictive score was calculated by total points. Area under receiver operating curve (AUROC) of the predictive score was calculated.

Results The rate of NNP results was 8.8%. After multivariate analysis, poor demarcation from the background, no ulcer, flat appearance, and low grade dysplasia were significant factors for NNP results. One point was allocated in no ulcer, flat appearance, and low grade dysplasia. Two points were allocated in poor demarcation from the background. Predictive score ranged from 0 to 5 point. Patients were categorized as low risk group (point 0,1,2), or high risk group (point 3,4,5) for NNP results. AUROC was 0.82 (p<0.01, 95% CI 0.77 – 0.88). With cut-off points of 2.5, the sensitivity and specificity of predictive score was 0.72 and 0.84, respectively.

Conclusions We developed a predictive model for NNP results after ER. Endoscopic rebiopsy or re-evaluation by pathologists is strongly recommended in high risk group.

OP110 THE USE OF AN ADDITIONAL WORKING CHANNEL (AWC) IN ENDOSCOPIC MUCOSAL RESECTION (EMR+) COMPARED TO CONVENTIONAL EMR

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Aims Endoscopic mucosal resection (EMR) can be enhanced by a new external additional working channel (AWC, Ovesco Endoscopy, Tuebingen, Germany) to “EMR+”. The AWC is mounted on a standard endoscope similar to the setup known from the full-thickness resection device (FTRD). So far, we do not have much data evaluating EMR+. We compared EMR+ to the gold standard of classical EMR.

Methods The trial was conducted prospectively in an ex-vivo animal model with pig stomachs placed into the EASIE-R simulator (Endosim, Hudson, USA), a well-established model for research and endoscopic training. Prior to intervention, we set standardized lesions, measuring 1 cm, 2 cm, 3 cm or 4 cm. In all resections, a 33 mm snare (Boston Scientific Captivator) and an FTRD grasper (Ovesco Endoscopy) was used.
Results Overall, 152 procedures were performed. In lesions of 1 cm, both EMR and EMR+ were very reliable with a R0 resection rate of 100%. In 2-cm lesions, EMR already dropped to 54.55%. Classical EMR did not provide sufficient resection rates for lesions with 3 cm or even 4 cm (18.18% and 0%). EMR+ still presented very satisfying results in 3 cm-lesions (86.36%) but also relevantly decreased at 4 cm (60.00%). Moreover, we observed a perforation rate of 15% in the latter.

Conclusions EMR+ enables a grasp-and-snare technique and consequently facilitates en-bloc resection of larger lesions compared to conventional EMR, which shows its advantages in the resection of lesions <2 cm. Consistently, we found no additional benefit of EMR+ in these lesions. From a size of 2 cm, EMR+ outdoes its advantages, especially concerning the rate of R0 resections. At 3 cm, EMR+ reaches its best discriminatory power. At 4 cm, also EMR+ comes to its inherent limits and the risk of perforations rises. Then, ESD or surgery should be considered.

EMR+ could help to close a therapeutic gap in interventional endoscopy with manageable technical complexity, time and costs.

OP112 IMPACT OF ANTIPLATELET USE ON THE RISK OF BLEEDING AFTER ENDOSCOPIC SUBMUCOSAL DISSECTION FOR GASTRIC ADENOMA AND EARLY GASTRIC CANCER

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Aims It has been reported that the rate of bleeding after gastric endoscopic submucosal dissection (ESD) is 0.6–26.9%. Recently, as the prevalence of cardiovascular disease increases, the frequency of performing ESD is common in patients taking antplatelet agents. We aimed to evaluate the rate of bleeding after ESD and the risk of thromboembolic events after cessation of antiplatelet agents, and to determine the optimal time of drug cessation.

Methods We retrospectively analyzed patients who received ESD for early gastric cancer and adenoma by using EMR databases at a single large referral hospital in Korea, between January 2010 and December 2016. We classified the patients into three groups according to the use of antplatelet agents as follows: non-user, continuation (patients who continuously used antplatelet or resume within 3 days) and interrupted group (patients who interrupted antiplatelet more than 3 days), and compared the rate of post-ESD bleeding and thromboembolic event. We also identified predictive factors of post-ESD bleeding by using multivariate analysis.

Results Of total 1379 patients, 1101 were non-users, 114 were continuation group and 164 were interrupted group. Post-ESD bleeding within 30 days occurred in 67 patients overall, while result shows statistically higher rate in the continuation group than in non-users or interrupted group (14.0 vs. 3.9 vs. 4.9%; p = 0.001). However, there were no significant differences between non-users and interrupted group. None of the patients showed thromboembolic events within 30 days. In multivariate analysis, continuous antplatelet use was a risk factor of post-ESD bleeding (OR 3.58, 95% CI 1.94–6.59). The specimen size (≥4 cm) and procedure time (≥40 min) were also independent predictors of post-ESD bleeding.

Conclusions Continuous use of antplatelet agents increased the risk of bleeding after gastric ESD. Discontinuation of antplatelet agents within 3 days is appropriate to prevent bleeding and thromboembolic-related complications.

OP113 GERMAN ESD REGISTRY – FIRST RESULTS

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Aims In Europe, endoscopic submucosal dissection (ESD) is not yet the standard treatment for premalignant or early malignant lesions in the gastroin-
testinal (GI)-tract. High quality data is limited to single center studies. In this study, we present the first results of the German ESD registry which was set up to evaluate and assess the technical success, curative resection rate, economic aspects as well as long term outcomes of ESD procedures performed in Germany.

Methods The German ESD registry study is a prospective, multicenter trial. Management and evaluation of collected data is done in a central data base at Klinikum Augsburg, Germany. Data is collected anonymously via electronic case report form (CRF).

Results In the year 2017, 18 hospitals included a total amount of 381 ESDs. A total of 139 resected lesions were located in the rectum, 109 lesions in the esophagus, 105 lesions in the stomach, 26 lesions in the colon and 2 lesions in the duodenum.

An overall en bloc resection rate of 94 percent was achieved; the highest en bloc rate was in the esophagus with 98% and the lowest en bloc rate in the colon with 88%.

The overall histological R0 resection rate was 81%; the highest R0-Rate was in the rectum (88%) and the lowest in the colon (73%). The overall complication rate was 15%; when colonic- ESDs were excluded, the complication rate dropped to 8.5%.

Conclusions A total of 381 ESD procedures were registered in 2017 with favourable R0 resection and complication rates. The German ESD registry represents a first step towards establishing ESD as a standard treatment of favorable R0 resection and complication rates. The German ESD registry study is a prospective, multicenter trial.

Aims Endoscopic submucosal dissection (ESD) has become a widely accepted for the en bloc resection of large superficial tumors in the gastrointestinal tract. ESD is less invasive when compared to surgery but complications such as bleeding, perforation and pain can be associated. Proton pump inhibitor (PPI) is frequently used to prevent post ESD bleeding but unlike the bleeding from peptic ulcers, proper dosing for post ESD period is still questionable. We can speculate that high dose PPI infusion would be more effective to ameliorate the post ESD pain. Therefore, this study was conducted to find out optimal dose of PPI in terms of minimizing complications after ESD.

Methods We randomly assigned patient as high dose PPI infusion group (esomeprazole 80 mg i.v. loading → 8 mg/hr for 48 hours) and standard dose PPI group (esomeprazole 40 mg i.v. daily). After first 48 hours, single dose of oral esomeprazole 40 mg was given to both groups. Prospective analysis was conducted in terms of clinical, endoscopic, and pathologic results from January 2015 to September 2017 at a tertiary teaching hospital.

The primary outcome was rebleeding rate and the use of painkillers such as tramadol and pethidine.

Results 214 patients were randomly assigned as high dose PPI group and 215 patients were assigned to infuse regular dose PPI. Clinicopathological characteristics of enrolled patients were similar between two groups except location of the tumor. Rebleeding was observed for 13 patients (5.0%) in high dose PPI group and 11 patients (4.5%) for non high dose PPI group respectively. Use of painkiller and maximal VAS (Visual analogue scale) score between two treatment groups also didn’t showed significant difference.

Conclusions Bleeding rate and post procedural pain reduction was not associated with the use of high dose PPI. Therefore, we concluded that the effect of standard dose PPI is comparable to that of high dose PPI.
Eighty-nine patients underwent CR and 31 patients underwent non-CR. Of the non-CR cases, 6 underwent total gastrectomy of the remnant stomach and none of them was found to have lymph node metastasis. The remaining 25 non-CR cases included 2 patients who underwent additional argon plasma coagulation and 23 patients placed under follow-up observation. The 5-year survival rate was 92.3% (95% confidence interval: 83.4–96.5) in the entire population, 93.3% (82.9–97.5) in the CR group, and 89.5% (63.6–97.3) in the non-CR group. No patient experienced metastasis or recurrence or died of gastric cancer. Death due to other causes was reported in 8 and 3 patients in the CR and non-CR groups, respectively (cancer in other organs in 5 and 2 patients, respectively).

Conclusions Despite its technical complexity, ESD in the remnant stomach provided good outcomes, with a 5-year survival of 92.3% (89.5% even in the non-CR group). However, other organs need to be carefully monitored as well because of the relatively frequent occurrence of metachronous cancer in other organs.

OP117 MEASURING KRAS MUTATIONS IN PANCREATIC CYST FLUID BY DROPLET DIGITAL PCR AND NEXT-GENERATION SEQUENCING

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Aims DNA-based testing of pancreatic cyst fluid, obtained with endoscopic ultrasound-fine needle aspiration (EUS-FNA), may be useful in the evaluation of pancreatic cystic neoplasms (PCN). Mutations in KRAS/GNAS are highly specific for mucinous pancreatic cystic neoplasm and can be detected by next generation sequencing (NGS; multiple genes simultaneously) or by droplet digital PCR (ddPCR; one gene at a time, but presumed higher sensitivity). The aim of this pilot study was to evaluate and compare NGS and ddPCR for measuring KRAS mutations in cyst fluid.

Methods In this pilot study, pancreatic cyst fluid from patients who underwent EUS-FNA were included. KRAS mutation analysis was performed using ddPCR (Bio-Rad) and next-generation sequencing (Ion Torrent PGM). The detection of mutant alleles in cyst fluid by the different techniques was compared and correlated with histopathology.

Results Twenty-four EUS-FNA obtained cyst fluid specimens of patients who subsequently underwent surgery were included for analysis (2007–2014). Surgical pathology showed 13 IPMNs, 7 MCNs, 3 SCNs and 1 cNET. Among these cases, 14 specimens were satisfactory for molecular testing by NGS (6 IPMNs, 5 MCNs, 1 cNET, 2 SCNs), whereas 17 specimens by ddPCR (9 IPMNs, 6 MCNs, 1 cNET, 1 SCN). Mutations in KRAS were detected in 3/6 and 9/9 IPMNs by NGS and ddPCR, respectively. In addition, KRAS mutations were identified in 0/5 and 2/6 MCNs by NGS and ddPCR. One mutation was identified in cNET by ddPCR. No mutations were identified in SCNs.

Conclusions In this pilot study, ddPCR was superior to NGS for the detection of mutations in cyst fluid in concordance with surgical pathology. Although the sensitivity of both ddPCR and NGS assays is often limited by the amount of DNA that can be evaluated, less DNA is required for mutation analysis by ddPCR. The lower limits of detection of ddPCR should still be determined.

OP119 LEOPARD STUDY: ITALIAN MULTICENTER PROSPECTIVE STUDY OF PANCREATIC CYSTIC LESIONS WITH CONFOCAL ENDOMICROSCOPY: FEASIBILITY AND SAFETY EVALUATION

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Aims Despite significant improvements in imaging technology, the diagnosis and management of pancreatic cystic lesions remains a significant clinical challenge. Needle-based confocal laser endomicroscopy (nCLE) is a unique imaging technique, enabling microscopic observation of solid organs and cystic tumors, in vivo and in real-time, during an EUS-FNA procedure.

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This multicenter prospective study evaluates the feasibility and safety of nCLE during EUS-FNA of pancreatic cystic lesions.

**Methods** 59 patients presenting for EUS-FNA of pancreatic cyst were enrolled for nCLE examination. The nCLE procedures were performed using the AQ-Flex 19 preloaded in a 19G EUS FNA needle. After IV injection of fluorescein, (2.5 mL of 10% fluorescein) confocal images were acquired then the probe was retrieved from the needle, and fluid acquisition was performed as appropriate for cytology and tumor markers (CEA, Amylase). Adverse events were recorded either during or after the procedure (immediate, within 24 hours and delayed) and classified in mild, severe (according to the requirement of specific care) and fatal.

**Results** 59 cases were enrolled, including 23 cysts located in head/uncinate (40%) of pancreas and in 53% of cases the cyst was unilocular. In 56 cases (95%) the procedure was technically feasible and in 81% was considered “easy” by operator. 3 cases were considered as procedure’s failure, one case due to device malfunction and 2 cases due to impossibility to retrieve the probe at the end of nCLE imaging acquisition. 6 (10%) adverse events occurred after the procedure: 3 severe (acute pancreatitis, 3 mild (2 intracystic self-limiting bleeding and 1 cyst infection); the cases of acute pancreatitis only required patient hospitalization.

**Conclusions** Our study demonstrates an excellent feasibility rate and an acceptable safety profile for nCLE in the pancreatic cysts via a 19G needle under EUS guidance.

**OP120 RISK SCORE FOR EARLY PREDICTION OF INVASIVE CANCER OF BD-IPMN ACCORDING TO MORPHOLOGICAL CHARACTERIZATION IN EUS IN PATIENTS WHO UNDERWENT TO PANCREATIC SURGERY**

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**Aims** To develop a risk score for early prediction of invasive cancer of BD-IPMN according to morphological characterization in EUS, using the surgical specimens as gold standard.

**Methods** Retrospective multicenter observational study in patients with BD-IPMN who underwent EUS and a surgical treatment between 2005 and 2017. Morphological features by EUS were evaluated. A score using a logistic regression model was performed to assess the risk of invasive cancer.

**Results** One-hundred and thirty-one patients (50% men, mean age: 66 ± 11 years) were included. The presentation was incidental in 40% of cases and contrast enhancement was performed in 34.6%. The low-intermediate grade dysplasia, high grade dysplasia and invasive cancer rates were and 51.9%, 24.4% and 23.7% respectively.

Size ≥ 30 mm (p = 0.011), enhancing nodules (p < 0.001), pancreatic duct ≥ 10 mm (p < 0.001), lymph nodes (p < 0.001) and abrupt change (p < 0.001) were associated with cancer in univariable analysis. By multivariable analysis, compared to 0 points: A (0 – 1), B (1.5 – 3), C (3.5 – 5), D (5.5 – 8.5 points) presented a positive predictive value of 8.5%, 42.1%, 57.1% and 100% rates of invasive cancer.

**Conclusions** This EUS predictive score estimates the risk of invasive cancer in patients with BD-IPMN with a high accuracy.

**OP121 NEEDLE-BASED CONFOCAL LASER ENDOMICROSCOPY FINDINGS IN 101 CONSECUTIVE UNDIFFERENTIATED PANCREATIC CYSTS: DOES ROUTINE USE OF CYTOPATHOLOGY CHANGE MANAGEMENT?**

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**DOI** 10.1055/s-0039-1681297

**Aims** Pancreatic cysts are common and cyst fluid cytology lacks sensitivity. We aimed to describe needle-based confocal laser endomicroscopy findings (nCLE) and measure the yield of cytology after successful nCLE.

**Methods** Review of 100 consecutive patients undergoing nCLE (CellVizio, Mauna Kea, Paris, France) of undifferentiated pancreatic cystic lesions (PCLs) in a French referral centre between April 2016 and August 2018. Data was analysed retrospectively from a prospectively collated database. Descriptive statistics and x² were employed.

**Results** 101 lesions were examined in 100 patients after administration of fluorescein and prophylactic antibiotics. Seven patients were excluded from analysis for technical failure (n = 1) or findings of rare cysts (cystic lymphangioma, n = 6). nCLE and cytology findings were concordant in 32 PCLs (4 operated and 2 were concordant) and nCLE was diagnostic in the setting of non-contributory cytology in a further 40 PCLs (4 operated and 3 were concordant). Two PCL diagnosed as MCN by nCLE were reported as benign inflammatory cysts by cytology, both were confirmed MCN on surgical specimens (one with high grade dysplasia). The resultant diagnostic yield for nCLE was 77% (72/94). There were 9 PCL in which cytology was positive after nondiagnostic nCLE (4/6 excluded cystic lymphangiomas; serous cystadenomas (SCA), n = 1; mucinous cystic neoplasm (MCN), n = 1; and neuroendocrine tumour, n = 1) (2 operated and concordant). Fifteen PCL were not diagnosed by either modality (none operated). For the diagnosis of serous cystadenoma, nCLE had a sensitivity of 88% and specificity of 100%. There were 3 complications (pancreatitis, n = 2; and infected cyst, n = 1).

**Conclusions** Our data did not show a benefit for cytology when nCLE was diagnostic; there were two cases where relying on cytology would have missed two MCN. Cytology altered the diagnosis in 37.5% of patients where nCLE was non-diagnostic. Complications were rare.

**OP122 DIFFERENTIATION OF PANCREATIC CYST TYPES BY ANALYSIS OF RHEOLOGICAL BEHAVIOR OF PANCREATIC CYST FLUID**

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**DOI** 10.1055/s-0039-1681298

**Aims** Differentiation between mucinous and non-mucinous pancreatic cysts (PC) is exceedingly important, yet remains difficult. The relative viscosity of PC fluid has proved useful for distinguishing mucinous from non-mucinous cysts.
We aimed to assess the utility of the rheological properties (measured by a rheometer) of PC fluid, as compared with standard-of-care analysis in differentiating PC types.

**Methods** Consecutive subjects with PC’s underwent EUS-FNA. In addition to routine cyst fluid, a rheological behavior curve of the cyst fluid was generated. PC’s were classified as mucinous or non-mucinous based on surgical and/or clinical findings (presentation, imaging, fluid analyses and follow-up).

**Results** A total of 22 patients with PC underwent EUS-FNA. Overall, 10 lesions (45.45%) were classified as mucinous, while 12 (54.54%) were classified as non-mucinous, 5 of which (22.72%) were considered pseudocysts.

For the rheological assessment, flow curves were drawn up, with the viscosity, η, plotted against the shear rate, γ. Three types of rheologic curves were identified, where two types correlated with non-mucinous cysts, and the third type corresponding to mucinous cysts. Using the optimal cutoff value, the sensitivity, specificity, and accuracy of cyst fluid viscosity – based diagnosis of mucinous versus non-mucinous were 70%, 91.7%, and 81.8%, respectively. In comparison, string-sign test showed a sensitivity, specificity and accuracy of 50%, 66.7%, and 59.1%, respectively. The overall accuracy of the viscosity-based technique (81.8%) was greater than that of CEA (72.7%), cytology (72.7%) and string-sign (59.1%). When considering cyst fluid viscosity, jointly with patient age, the sensitivity and the accuracy increased to 100% and 95.5%, respectively, but the specificity remained 91.7%.

**Conclusions** Cyst fluid rheological analysis appears to accurately differentiate pancreatic cyst types. This simple and rapid diagnostic tool can be implemented on-site and provides for a low variability rate compared to the commonly used, subjective string sign technique.

**OP123 ENDOSCOPIC ULTRASOUND-GUIDED FINE-NEEDLE ASPIRATION FOR Pancreatic Solid LESIONS: CYTOMETRY, HISTOLOGY OR BOTH?**

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**DOI** 10.1055/s-0039-1681299

**Aims** Endoscopic ultrasound-guided fine-needle aspiration (EUS-FNA) is the gold standard procedure for obtaining pathological diagnosis of pancreatic solid lesions. The specimen obtained by EUS-FNA can be prepared for either cytological or histological (cellblock) examinations. The aim of our study was to compare diagnostic accuracy of cytology, cellblock and both, in the absence of on-site pathologist.

**Methods** We performed a retrospective study including all patients submitted to EUS-FNA of pancreatic solid lesions at an oncology centre between January 2006 and October 2018. Data were collected from electronic medical reports. Final diagnosis was based on surgical pathology or clinical follow-up. Patients with either cytology or cellblock specimen considered ‘insufficient for diagnosis’ were excluded.

**Results** A total of 129 patients were included (median age: 67 ± 17 years, male:70 (54.3%). The median size of lesions was 32.0 ± 14.5 mm; a 22G needle was used in 91.5% and median number of passages was 3 ± 1. Most lesions were adenocarcinoma (58 (45%)) and neuroendocrine tumours (23 (17.8%)) and were mostly located in the pancreatic head (54 (41.9%)) and body (32 (24.8%)). Three (2.3%) procedures were complicated with self-limited bleeding. Sensitivity, specificity, positive and negative predictive values and accuracy, for the diagnosis of malignancy were 92.3%, 82.4%, 97.0%, 63.6% and 90.9% for cytology; 96.9%, 75.0%, 97.9%, 66.7% and 95.2% for cellblock and 98.2%, 76.5%, 96.5%, 86.7% and 95.3% for both, respectively. All values obtained were statistically significant. No differences were found in diagnostic accuracy between different needle sizes (p = 0.235) or number of passages (p = 0.465).

**Conclusions** Combined cytological and histological analysis for diagnosing pancreatic solid lesions may increase the diagnostic yield of conventional EUS-FNA without on-site cytology. These results are similar to rates reported in the literature.

**OP124 ENDOSCOPIC ULTRASOUND-THROUGH-THE-NEEDLE MICROFORCEPS BIOPSY IN Pancreatic Cystic LESIONS: A SYSTEMATIC REVIEW**

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**DOI** 10.1055/s-0039-1681300

**Aims** The Moray microforceps biopsy device (MFB) is a disposable tissue acquisition device that can be passed through a 19-gauge needle and it has been recently introduced to facilitate the EUS-guided biopsy of pancreatic cystic lesions (PCLs). Our aim was to perform a systematic review of studies evaluating the technical aspects, safety and efficacy of the EUS-guided microforceps biopsy for PCLs.

**Methods** A literature search was performed in three major databases, PubMed, Embase and Web of Science in October, 2018. The search terms used were: “through-the-needle”, “biopsy forceps”, “microforceps”, “endoscopic ultrasound”, and “endosonography”. Case reports and case series with less than 15 patients were excluded from the analysis.

**Results** Altogether 7 retrospective studies reporting on 269 patients were included. Mean age of the patients was 66.3 years, with a slight female predominance (59.5%). The size of the PCLs ranged from 11 to 88 mm and most of them were located in the head or body of the pancreas (69%). Technical success of EUS-guided MFB was reported in 258/269 cases (96%). Main reasons for technical difficulties were inability to access the cyst while the echoendoscope was fully flexed, difficulty to push the instrument through the needle, and difficulty to visualize the forceps on EUS scan. The tissue acquisition yield reported was 88% (171/194). EUS-guided MFB was able to establish the correct final diagnosis in 151 PCLs out of 212 (diagnostic accuracy, 71%).

Nineteen cases with adverse events (7%) were reported: abdominal pain (1.8%), intracystic hemorrhage (3%), mild acute pancreatitis (1.5%), postprocedural infection (0.7%) and atrial fibrillation after procedure (0.3%).

**Conclusions** EUS-guided MFB is technically feasible, safe and has a high diagnostic accuracy for PCLs. These results should be, however, interpreted with caution. Given the novelty of EUS-guided MFB, further ongoing studies are expected to offer a better understanding of its safety profile and diagnostic accuracy.
OP125 ENDOSCOPIC ULTRASOUND-GUIDED FINE NEEDLE ASPIRATION CYTOLOGY VS FINE NEEDLE BIOPSY FOR THE DIAGNOSIS OF PANCREATIC NEUROENDOCRINE TUMOURS

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Aims Endoscopic ultrasound-guided fine needle aspiration (EUS-FNA) as a method of obtaining preoperative diagnosis of pancreatic neuroendocrine tumours (PNETs) has been reported in several series. Fine needle biopsies (FNB) are increasingly employed to obtain core specimens during EUS. However, the differences in efficacy between these sampling methods in the diagnosis of PNETs still need to be defined.

Methods Over a 12-year period, all patients who underwent EUS-guided tissue sampling of suspicious pancreatic lesions identified by pancreatic protocol CT or MRI, with clinical, endoscopic and pathologic details were entered into an electronic database. Lesions underwent EUS-FNA or FNB sampling, or a combination of the two, if feasible. The accuracy and safety of different EUS guided sampling methods for confirmed PNETs were investigated.

Results A total of 91 patients (M:F: 42/49, median age: 57 years, range: 26–87 years), who underwent a 102 EUS procedures, had a final diagnosis of PNET confirmed by histopathological examination as well as multidisciplinary review and clinical follow up. Preoperatively, both EUS-guided sampling modalities were used in 28 procedures, EUS-FNA alone was used in 61 cases, while EUS-FNB alone in 13 cases. The diagnostic yield of EUS-FNA and EUS-FNB alone, including the adequate specimens, was 77.5% (95% CI: 68.9 – 86.2%) and 85.4% (95% CI: 74.6 – 96.2%), respectively. The combination of both sampling modalities established the diagnosis in 96.4% (95% CI: 89.6 – 100%) of cases (27/28), and was significantly superior to EUS-FNA alone. The diagnostic accuracy among the adequate samples for EUS-FNA, EUS-FNB and for the combination of the two methods were 88.4% (95% CI: 80.9 – 96.0%), 94.3% (95% CI: 86.6 – 100%) and 100% (95% CI: 100 – 100%). There was one reported complication, a post-FNA bleeding, treated conservatively.

Conclusions EUS-FNB improves the diagnostic accuracy and confers additional information to cytological assessment of PNETs.

OP126 PANCREATIC CANCER ANGIogenesis ASSESSMENT BY CONFOCAL LASER ENDOMICROSCOPY AND ANTI-CD 105 ANTIBODY IN PANCREATIC CANCER – A PILOT STUDY

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Aims Pancreatic ductal adenocarcinoma (PDAC) remains one of the most aggressive types of cancer with a limited number of therapeutic options. Confocal laser endomicroscopy (CLE), with various miniprobes available is accessible tool for different lesions providing a live diagnosis. To assess neoangiogenesis PDAC diagnosed patients by two fluorescently labeled antibodies on fresh biopsy samples imaged with CLE.

Methods Ten consecutive patients diagnosed with PDAC following FNA -endoscopic ultrasound underwent curative therapy with tumor resection. Fresh specimens were washed in saline solution and incubated for one hour in the dark at 37°C, with Alexa-Fluor 488 anti-CD 105 (Endoglin antibody (mouse anti-human IgG2a, Exbio Prague, Czech Republic). We also tested mesothelin as positive for PDAC. CLE imaging was performed to assess the microvascularization in an ex vivo setting by direct contact with the specimen. All acquired images were assessed with a dedicated processing software to obtain a Z projection of confocal serial stacks. Next we measured the vascular density and vessel diameters within 50 μm × 475 μm rectangular regions previously chosen. We also compared the results with classic immunohistochemistry technique.

Results CD 105 expression on CLE was present within PDAC samples with a microvascular density of 13.56 ± 6.88 compared to normal pancreatic tissue 1.1 ± 0.857 (p < 0.001). Mesothelin was clearly proved to be present in every PDAC samples suggesting a potential direct target for future oncologic therapies.

Conclusions This pilot study proves that CLE targeted CD 105 for tumoral vascular network might represents a potential tool for future studies regarding PDAC neangiogenesis and future therapies.

Friday, April 5, 2019 11:00 – 13:00
Video EUS 2
South Hall 1A

OP127V ENDOSCOPIC ULTRASOUND-GUIDED BIOPSY OF SUBEPITHELIAL GASTROINTESTINAL LESIONS – JUST WET-IT

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Introduction Endoscopic ultrasound-guided fine-needle aspiration biopsy (EUSFNAB) is the main method for acquisition of tissue from gastrointestinal subepithelial lesions (SELS). Despite the development of new needles, diagnostic yield remains low. The reason may be an ineffective transmission of negative pressure with the dry technique, as these lesions often have high cellular cohesion. A new method of aspiration has been described, where the needle is filled with saline (wet suction technique, WST), with promising results in pancreatic lesions. This method hasn’t been tested in SELs.

Aims and Methods Prospective single centre study to assess the diagnostic yield of EUSFNAB+WST in the diagnosis of SELs, without the use of rapid on-site evaluation. In mesenchymal tumours, the diagnosis was considered positive only when immunohistochemistry (IHC) could differentiate between gastrointestinal stromal tumour (GIST) and leiomyoma. The diagnostic yield of this prospective cohort between July 2015 and December 2017 was compared with a retrospective cohort using dry technique from the same institution.

Results Seventy-one patients with SELs were included (49% male, mean age 66 years). Mean SEL size was 32 mm (min 10, max 120 mm), mean number of passages was 3 (± 0.7). A 22G needle was used in 58 patients (82%), 19 G in 8 (12%) and 25 G in 5 (7%). We obtained a conclusive cytopathological diagnosis in 60 cases (diagnostic yield of 85%) and IHC was performed in 58 cases (82%). The most frequent diagnoses were GIST (37%), leiomyoma (14%) and metastases (13%). When compared with a retrospective cohort of 56 cases, diagnostic yield was significantly higher (85% versus 25%, p < 0.0001).

Conclusion Wet suction technique allowed an excellent diagnostic yield in the EUS-guided evaluation of SELs. We suggest that, after proper replication of these results, WST may become the first-line method in the management of these lesions.
**OP128V**  **EUS GUIDED LUMINAL REMODELING AS A NOVEL TECHNIQUE TO RESTORE GASTRODUODENAL CONTINUITY**

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*DOI: 10.1055/s-0039-1681304*

**Background**  
Pyloric closure is a method of treatment for duodenal injury. Surgery is usually needed to restore digestive continuity in due time, yet a new surgical procedure can be challenging due to fibrotic adhesion development.

**Methods**  
We present here a retrospective case series of three patients’ with pyloric exclusion who underwent EUS guided duodenal repermeabilization using metallic stents. IRB approval was not needed for this paper, written informed consent was obtained from all patients before the procedures.

**Results**  
All procedures were successful with no complication and allowed regular feeding.

**Conclusion**  
This case series shows that EUS guided recanalization is a feasible and safe procedure that can help avoid surgery.

**OP129V**  **SINGLE-SESSION EUS-GUIDED CHOLECYSTOUDUODENOSTOMY AND TRANSCYSTIC RENDEZVOUS AS RESCUE OF FAILED ERCP BILIARY ACCESS**

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**Introduction**  
EUS-guided rendez-vous (EUS-RV) carries a 30% failure rate. Several transluminal endoscopic interventions within the gallbladder (GB) via EUS-guided anastomoses have recently been reported in non-surgical patients with prior EUS-guided GB drainage (EUS-GBD). We report single-session EUS-guided cholecystoduodenostomy and transduodenal cholecystoscopy aiming at transcystic RV to overcome failed ERCP.

**Description**  
An elderly male with multiple comorbidities and Billroth-I gastrectomy presented with cholangitis and CBD and GB stones. The papilla could barely be seen, hidden among redundant folds so EUS-RV was chosen for biliary access. After EUS-guided puncture of the CBD, echosonde instability resulted in guidewire dislodgment and contrast extravasation. Interposed vessels, decompressed CBD and US artifact precluded a second CBD puncture, whereas lack of intrahepatic bile duct dilation ruled out transhepatic EUS-RV. We decided to perform EUS-GBD to obtain a portal for transcystic antegrade CBD access. A 15 × 10-mm lumen-apposing metal stent (LAMS) was placed free-hand into the GB. LAMS was balloon dilated and cholecystoscopy was performed through it with a standard upper endoscope. An 8.5 Fr transcystic catheter was used to help direct the guidewire into the duodenum across the papilla. The gastroscope was removed leaving the catheter-guidewire in place and a duodenoscope was then passed alongside it. The guidewire was retrieved with a snare and over-the-wire RV sphincterotome with stone removal was completed. The patient was admitted for post-procedure abdominal pain and right-inferior-lobe pneumonia, being finally discharged.

**Comments**  
EUS-guided cholecystoduodenostomy with a LAMS afforded single-session transcystic antegrade RV for sphincterotomy and stone removal after failed cannulation and EUS-RV in an elderly patient with Billroth-I anatomy. This approach might be considered in selected non-surgical patients with CBD stones and in situ gallbladders if standard biliary access is not possible, as the GB offers a larger target than the CBD and LAMS provide a relatively leak-proof platform for intervention.

**OP130V**  **NOVEL EUS GUIDED TREATMENT OF GASTRIC VARICES WITH A LIQUID NON-ADHESIVE NEUROVASCULAR EMBOLIZATION AGENT**

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*DOI: 10.1055/s-0039-1681306*

**Aims**  
Endoscopic Injection of adhesive agents as N-Butyl-2-Cyanoacrylate (NBC) is used for the management of gastric varices. Recently the combination of NBC and coils has been used with endoscopic ultrasound assistance. Adhesive properties can blockage instrumentation material and damage endoscopes. Adverse events include ulcers, vascular necrosis, rebleeding and distal embolism. We describe a novel gastric varices embolization therapy with EUS injection of a composite non-adhesive endovascular liquid agent: Ethylene-vinyl alcohol (EVOH), Tantalum as contrast media and Dimethylsulfoxide (DMSO) as primer. It has been extensively used in interventional radiology to treat cerebral arteriovenous malformations. Has the advantages of being radiopaque and immediate polimerization.

**Methods**  
3 men and 2 women, 50 – 65 years with gastric fundus varices, portal hypertension and Child-B hepatic cirrhosis who presented previous bleeding were treated. Two patients had previously been treated with NBC and rebleding. The endoscope was advanced to the gastroesophageal junction. The selected gastric varix punctured using a 22 Gauge needle. EVOH volume ranged between 1.5 and 3cc. Vascular flow obliteration was real time monitored by EUS.

**Results**  
Patients were discharged on the same day. The mean follow-up was 12 months. Endoscopic and radiological control was performed at 1 and 3 months.

**Conclusions**  
EUS guided embolization of gastric varices with EVOH can be considered as efficient alternative. The procedure promises advantages in terms of number of sessions required, local or systemic adverse events and endoscopes damage. Prospective multicenter study with greater number of cases and cost evaluation against coils alone or combined are required.

**OP131V**  **EUS-GUIDED DOUBLE BILIARY DRAINAGE FOR COMPLEX MALIGNANT HILARY BILIARY OBSTRUCTION**

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**Introduction**  
Endoscopic ultrasound guided biliary drainage (EUS BD) is a novel technique to rescue patients who had failed ERCP biliary drainage due to significant stricture or because of surgically altered anatomy. The situation would be more challenging in the patient who had failed ERCP or incomplete drainage due to high grade malignant hilarity biliary obstruction (MHBO). In those patient percutaneous biliary drainage (PTBD) or EUS BD would be the only options.

For high grade hilar obstruction, the efficacy of EUS hepatoc gastrotomy (HGS) for the left intrahepatic duct (IHD) and hepaticoduodenostomy (HDS) for the right IHD drainage were demonstrated in different studies. However number of cases and studies in particular for the right IHD drainage are
scarce. On the other side there is no universal consensus on the optimal strategy to perform EUS-BD, and the decision is largely based on the patient’s anatomy and level of obstruction. Here we are demonstrating double EUS-BD, to drain intrahepatic bile ducts in two cases with malignant high grade hilar obstruction.

**Method** In both cases the ERCP drainage failed to provide complete biliary drainage even after the first EUS guided biliary drainage both cases had IHD obstruction so they underwent second IHD biliary drainage which successfully relieve obstructive symptoms.

In those patient we achieved technical success in both cases with no major complication related to the procedure. However our second patient had only partial clinical improvement.

**Conclusion** We believe, double EUS BD for intrahepatic duct drainage is relatively safe and feasible procedure for completion of biliary drainage in complex malignant hilar obstruction.

This procedure need to be done by experienced endosonographic in a tertiary hospital setting.

There is no universal consensus on the optimal strategy to perform EUS-BD and more case studies required.

**OP132V ENDOSCOPIC ULTRASOUND (EUS)-GUIDED SINGLE-STEP MULTIPLE GATEWAY DRAINAGE OF COMPLEX WALLED-OFF NECROSIS (WON) WITH LUMEN APPOSING METAL STENT (LAMS): A PRELIMINARY EXPERIENCE**

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**DOI** 10.1055/s-0039-1681308

**Background** EUS-guided drainage is suggested as the first approach in the management of symptomatic, complicated WON. A step-up approach is proposed in case of either refractory or complex collections. Recently, a new LAMS with an integrated electrocautery delivery system have been developed, facilitating drainage, reducing procedural timing and hospital stay. Although a single transluminal access is preferred, multiple step-up gateway technique is proposed in case of multiple, large or low-responding WON.

**Methods** We present our preliminary experience on patients with symptomatic complex WON, defined as large (> 12 mm), septated or multiple, drained with a single-step, multiple gateway technique using EC-LAMS. All procedures were performed after 4 weeks from the onset and conservative treatment failure. Patients demographic, technical and clinical success, procedure time, necrosectomy sessions, further treatment needed, adverse events and post-procedure hospitalization were recorded and statistically analyzed.

**Results** This is a retrospective analysis of prospective collected data of five consecutive patients with symptomatic complex WON. WON were single with sepsis in 3 patients, multiple in 2 patients. 10 EC-LAMS were deployed with both transgastric and transduodenal approach. Technical success was 100%. The mean time for procedure was 29 min. Necrosectomy was completed in up to 3 sessions, achieving clinical success in 3 cases (80%), with no recurrence in all the patients. One patient required a concomitant percutaneous drainage. We reported one moderate bleeding, in the first post-operative day (POD) treated endoscopically and one severe bleeding, on 10th POD, requiring embolization and surgery with concomitant necrosectomy.

**Conclusion** Patients affected by multiple, septated, large WON can be considered “hard-to-treat-patients” and a single gateway could represent an insufficient treatment. Our case series showed that a single-step multiple gateway technique using EC-LAMS is safe and feasible.

However further prospective, randomized, controlled studies are needed to define the long-term outcomes of this approach.

**OP133V SALVAGING EUS GUIDED GASTROJEJUNOSTOMY PERFORMED TO TREAT SMA SYNDROME BY "CONTROLLING THE TWO ENDS OF THE WIRE" TECHNIQUE**

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**DOI** 10.1055/s-0039-1681309

60 year old male presented with vomiting and weight loss. Abdominal CT was consistent with SMA syndrome. EGD showed extrinsic compression at D3.

He declined surgery or tube feeding and agreed to endoscopic treatment.

An overtube was mounted on an endoscope. A wire was advanced to the jejunum.

The endoscope was removed, CRE balloon catheter was advanced over the wire inside the overtube. The CRE balloon was positioned past the narrowing opposing the gastric silhouette.

The balloon was inflated. An Echoendoscope with hot axios was advanced to the stomach opposing the balloon. The Axios catheter was advanced using electrocautery inside the balloon causing balloon rupture. A long wire was advanced inside the jejunum. The distal flange slipped outside the jejunum during deployment. The proximal flange was deployed. The echoendoscope was removed, keeping the wire in place.

A pediatric colonoscope was advanced to the proximal jejunum. The distal end of the wire was pulled back to the mouth as the colonoscope was removed. Both ends of the wire were controlled. The deployed axios was retrieved.

A therapeutic gastroscopy was advanced over the proximal end of the wire to the gastrojejunosotomy site.

A 15 mm axios was advanced over the wire through the gastrojejunosotomy to the small bowel. A pediatric Endoscope was advanced on the side of the therapeutic endoscope to the second part of the duodenum confirming the position of axios catheter in the small bowel.

The distal flange of the stent was deployed under endoscopic visualization in the small bowel.

The proximal flange was then deployed in the stomach. The stent was dilated to 18 mm.

The patient had no adverse events and tolerated soft diet.

Postoperative CT showed gastrojejunosotomy with decompress of the stomach.

In a follow-up visit, he was asymptomatic and gaining weight.

**OP134V GASTROYEUNOSTOMY AND COLEDOCODUODENOSTOMY FOR BILIARY DRAINAGE IN PATIENT WITH DUODENAL AND BILIARY STENOSIS DUE TO PANCREATIC NEOPLASM**

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**DOI** 10.1055/s-0039-1681310

**Introduction** We describe a case of a 62-year-old man with a history of cholecystectomy due to repetitive biliary colic. The patient was diagnosed with locally advanced pancreatic adenocarcinoma cT4cN1M0, in the context of constitutional syndrome and obstructive jaundice. The pancreatic mass...
produced dilation of the intra and extrahepatic bile duct, as well as Wirsung (6.5 mm) and stenosis of the third duodenal portion. For this reason, we decided to do an endoscopic derivation of the bile and duodenal stenosis.

Short Description of the Technique: Due to the impossibility of passage the guidewire to the distal duodenum we could not put a duodenal prosthesis.

Because of that we decided to perform an endoscopic gastrojejunoscopy and endoscopic bilary duct derivation, at the same procedure.

Firstly, we introduced the endoscopic ultrasound (EUS) in order to identify a loop of small intestine close to the stomach. Then, the bowel was punctured with a 19 G needle so as to introduce contrast and methylene blue in order to distend the loop. The endoscopic gastrojejunoscopy was performed using lumen-apposing metal stent (LAMS) (HOT Axios 15 × 10 mm) by the “free-hand” technique. After that, we verified the correct position in the jejunum by direct vision and seeing the exit of methylene blue to the stomach.

For the derivation of the biliary stenosis, we identified the dilated bile duct (2.6 cm) at the duodenal bulb level. Subsequently, we punctured it with a 19 G needle and passed a guidewire to the common bile duct. Finally, we performed a choledochoduodenostomy with 8 × 8 mm HOT Axios and verified its correct placement.

Conclusions The EUS allows the performing of the drainage of the biliary tract and the biliary stenosis at the same procedure, using lumen-apposing metal stent without complications.

OP135V  EARLY GASTRIC ADENOCARCINOMA OF THE FUNDIC GLAND (CHIEF CELL PREDOMINANT TYPE): A NEW CHALLENGE FOR AN ENDOSCOPIST AND A PATHOLOGIST

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A 65-year-old female patient was referred to Yaroslavl Regional Cancer Hospital for screening upper gastrointestinal endoscopy. A 6 mm elevated lesion at the greater curvature of the upper part of gastric body was detected. The lesion had a poorly demarcated border and a whitish regular surface with dilated branching vessels by conventional white light imaging (WLI) endoscopy. Magnifying narrow-band imaging (M-NBI) observation of the lesion identified the indistinct demarcation line with a regular microsurface and a microvessel pattern. No atrophic changes were confirmed at the background gastric mucosa, Helicobacter pylori infection was not detected. Targeted forceps biopsy was taken for histological assessment of the lesion. Histology showed carcinoma mimicking the normal gastric fundic glands with an irregular branching structure. Endoscopic submucosal dissection (ESD) was performed for en-bloc resection of the lesion. Histological examination of the post-ESD specimen showed well-differentiated gastric adenocarcinoma of fundic gland (GAFG) with submucosal invasion < 500 micrometers (sm1). The tumor was located in the deep region of the fundic gland and was totally covered by non-neoplastic foveolar epithelium. Immunohistochemically, the lesion had diffuse positivity for pepsinogen I (chief cell differentiation), and focal positivity for H +K+-ATPase (parietal cell differentiation) suggesting a chief cell-predominant type of a cancer. Endoscopic resection was assessed as complete (R0) with negative horizontal and vertical margins of the specimen, no lymphatic and venous infiltration were found. GAFG is a rarely diagnosed gastric neoplasm of oxyntic mucosa which is considered to be a limitation for M-NBI diagnosis and therefore should be identified by careful WLI endoscopy only [Ueyama et al., 2014]. A recent literature search through PubMed was conducted to obtain 111 cases of GAFG (mainly from Japan) [Benedict et al., 2018]. To the best of our knowledge this is the first report of this type of gastric cancer in Russia and Europe.

OP136V  ENDOSCOPIC BAND LIGATION WITHOUT RESECTION OF SMALL-SIZED SUBMUCOSAL TUMOURS: RESULTS IN SHORT-MEDIUM FOLLOW-UP TERM OF A MULTICENTER PROSPECTIVE STUDY (BANDING-SMT)

Authors  Bas-Cutrina F1, Consiglieri CF1, Loras C2, Andújar X2, Huertas C3, Albert M3, Ballester R4, González-Huix F4, Guarner-Argente C5, Pardo A6, Bosch-Schips J7, Gomals JB8
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Aims The endoscopic-band-ligation (EBL) without resection combined with single-incision-needle-knife (SINK) biopsy is a little reported option in the management of submucosal-tumours (SMT). The main aim was to determine the efficacy of this technique. Secondary aims: to evaluate its safety and the diagnostic yield of biopsy.


Results Sixty-four cases (44% of the sample calculation); EUS-control 4–6 weeks n = 51. Esophagus n = 3, stomach n = 49, duodenum n = 11, rectum n = 1. SMT medium-size: 9.5 mm (4.5–15 mm). EBL technical success: 87.5% (n = 56/64). Clinical success at 4–6 weeks: 92.2% (n = 47/51), overall clinical success: 79.7% (n = 47/59). SMT dependence of superficial vs. deep layer subanalysis: technical success 93% vs. 75%; overall clinical success 87% vs. 65%. SMTs > 10 mm vs. > 10 mm: technical success 100% vs. 68%; overall clinical success 97% vs. 54%. Pathological diagnosis: 62.5% (30/48); no differences between SMT-size, SMT-layer, or number or biopsies. Two mild adverse events (3%): bleeding, pain. Incidences: epigastralgia (6 h: 33%; 24–48 h: 30%; 7 days: 14%; 4–6 weeks: 2%).

Tab. 1 Technical and clinical success subanalysis

<table>
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<th>Clinical Success</th>
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</tr>
<tr>
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<tr>
<td>SMT &gt; 10 mm</td>
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Conclusions Preliminary results in the short-medium follow-up term indicate that EBL of small SMT, supplemented with SINK biopsy, seems to be a feasible and safe technique. The limitations of its technical and clinical success seem to be associated with the SMT size and deep layers dependence.
OP137V  ENDOSCOPIC PERORAL DRAINAGE (EPOD) OF PERITONEAL POST BARIATRIC SURGERY COLLECTION AND ABDOMSES

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Aims Pancreatic collections endodrainage is a rationale for Endoscopic Peroral Drainage (EPOD) in cases of peritoneal abscess after Bariatric surgery leaks. Reoperation has a high morbidity and CT-drainage has limitations.

Methods We included 80 consecutive patients from 2007 to 2015 (48 Sleeve gastrectomy, 32 gastric bypass) with post operative leaks between 5 to 21 days. Patients Heart rate was over 120 bpm. Tomography showed left subphrenic, peri-gastric or free abdominal collections. Upper CO2 endoscopy allowed through the leak access to peritoneum (9,8 or 5,8 mm diameter gastro-scope). In patients orifices < 5.8 mm balloon dilatation of the leak was performed. The abscess content was suctioned out (100 to 700 ml) and sample taken for bacterial culture. Cavity was flushed and cleaned with sterile saline (200 – 2000 ml). If needed surgical drains were repositioned or replaced using endoscopic forceps and snare by one of the following approaches: 1- advancing endoscopes to the skin orifice, pulling the drains tubes into the peritoneum and leave them close to the leak. 2-searching for one laparoscopy port inside peritoneum, re-opening it under endoscopic vision, advancing through it drainage catheters and pulling back to place them close to the leak. In 8 patients forceps or knives endoscopic liberation of adhesions was required. Leaks were treated with SEMS.

Results Heart rate returned to normal within 24 hours. In 50% of patients it happened immediately after drainage. Average time was 55 minutes. Abdominal catheters were removed between 7 and 18 days once full resolution of the debit was achieved. Twenty patients were discharged within the first 24 hours and the rest between within 8 days. SEMS were placed for 6 to 8 weeks leading to complete closure of leaks. There were no adverse events.

Conclusion EPOD for peritoneal abscesses secondary to Bariatric surgery leaks is feasible, safe and highly effective.

OP138V  PERCUTANEOUS ENDOSCOPIC GASTROSTOMY – “REMOVAL UNEXPECTED COMPLICATION”

Authors  Fernandes J1, Araújo T2, Ramos R1, Vicente C1, Teles T3, Cunha R3, Azvedo C1, Lucas F4, Canena J5, Lopes L2,6,7, Casteleiro C1

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Description Percutaneous endoscopic gastrostomy (PEG) tube removal is recommended after patients resume oral intake.

There are three main techniques described to remove a PEG tube: (1) external traction at the skin level, (2) the cut and push technique, and (3) retrograde esophageal exteriorization under endoscopic control. The choice depends mainly on endoscopist’s preferences and local guidelines.

Several risk factors for tube deterioration have been described, such as heat and fungal colonization.

We report the case of an 83-year-old patient with a PEG inserted 2 years ago, due to dysphagia in the context of Parkinson’s disease. After placement, patient missed all booked appointments. Two years later, the patient’s relatives contacted our Department to inform that the patient had resumed oral intake one year ago, and that they weren’t using the feeding tube ever since.

Initially, we tried to remove the tube endoscopically through the mouth as is standard practice in our department. During the procedure an esophageal laceration occurred at the lower esophageal sphincter due to the rigidity of the bumper. Given the risk of attempting to remove through the esophagus, we decided to remove the PEG tube through the gastrostomy tract. Given the rigidity of the bumper, we performed multiple radial incisions on the bumper using laparoscopic scissors inserted through the gastrostomy tract, to facilitate its collapse when extracting it through the stoma.

At the end of the procedure we confirmed that the PEG tube was rigid, demonstrating marked decrease in its elasticity. Culture of the PEG material showed fungal colonization (hyphae growth).

Motivation We highlight this case by the possibility of using the gastrostomy as an alternative gateway. Moreover, endoscopists which remove PEG tubes through the oral route, should be aware that several factors can modify the tubes’ original properties and therefore hinder the exteriorization using the oral route.

OP139V  ENDOSCOPIC SUBMUCOSAL DISSECTION USING THE SHORT TYPE CLUTCH CUTTER FOR SUPERFICIAL NON-AMPUPLARY DUODENAL EPITHELIAL TUMORS

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Background and study aim Endoscopic submucosal dissection (ESD) using conventional knives for superficial non-ampullary duodenal epithelial tumors (SNADET) is technically demanding and the reported perforation rate was 25%. The aim of this study was to evaluate the efficacy and safety of ESD using the short type CC for SNADET.

Patients and methods From September 2009 to March 2018, 15 consecutive patients (6 men, 9 women; mean age 60 years, range 52 – 91) with a diagnosis of SNADET confirmed by preliminary endoscopy, EUS, and endoscopic biopsies, were enrolled into this prospective study. The short type CC (blade length 3.5 mm) was used for all steps of ESD (mucosal incision, submucosal dissection, and hemostatic treatment). The therapeutic efficacy and safety were assessed.

Results Tumor location included 2 lesions in the bulbus, 10 lesions in the 2nd portion, and 3 lesions in the 3rd portion. The final histopathological diagnoses of the resected specimens were 5 cases of adenocarcinoma, 9 cases of adenoma, and 1 case of heterotopic gastric mucosa. The mean sizes of the SNADETs and resected specimens were 19 ± 11 mm and 28 ± 11 mm respectively. The mean operating time was 119 ± 80 minutes. The rates of en-bloc resection and R0 resection were 93% (14/15) and 67% (10/15), respectively. We encountered intraoperative perforation in 1 case (7%), which was successfully treated by following endoscopic clipping and conservative treatment. There were no perforations or bleeding after ESD using the short type CC.

Conclusions ESD using the short type CC appears to be a relatively safe and technically efficient method for resecting SNADET.

OP140V  ENDOSCOPIC TREATMENT OF INTRALUMINAL DUODENAL (“WINDSOCK”) DIVERTICULUM WITH DIVERTICULOTOMY

Authors  Gatto Paulo AC1,2, Alves da Cruz Teixeira L1,2, Andrade Franciscani Peixoto A1,2, Alves Retes F1,2, Coelho Fraga Moreira P1,2, Souto Bittencourt PF1,2, Alberti LR1,2, Fraga Moreira E1,2

Institute 1 FELUMA – Fundação Educacional Lucas Machado, Belo Horizonte, Brazil; 2 Hospital Felicio Rocho, Belo Horizonte, Brazil

Aims Intraluminal duodenal diverticulum (IDD), also known as windsock’s diverticulum is a rare congenital anomaly, which results from an incomplete recanalization of the foregut in the embryonic formation. Although most patients are asymptomatic, the most frequent symptoms are nausea, vomit, early satiety and epigastric discomfort. Complications are rare and include gastrointestinal bleeding, obstruction, pancreatitis and cholangitis. Endoscopic therapeutic can be used as an alternative treatment in symptomatic cases. Methods Case report of endoscopic treatment of IDD in a Brazilian tertiary reference center. Results A 19-year-old female with uncontrollable nausea, vomit and weight loss with twenty-days evolution. Laboratory tests and abdominal ultrasonography showed no alterations. Symptoms worsened during hospitalization with refractoriness to the clinical treatment. Introduction of total parenteral nutrition was necessary. Upper gastrointestinal endoscopy revealed a large IDD in the second duodenal portion partially occupying the lumen and with a small orifice in distal portion. The duodenal papilla was identified proximal to the diverticulum. Endoscopic diverticulotomy was recommended after multidisciplinary discussion. The septotomy was performed with needle-knife from the proximal to the distal portion, pulling the catheter in a contralateral direction to the wall of the diverticulum and thermal hemostasis was done with a coagrasper, with complete diverticulotomy and allowing easy passage of the endoscope. A laceration area was observed in the second duodenal portion, contralateral to the diverticulotomy, and metal clips were placed. Patient presented massive hematemesis, one day after the procedure, which was resolved with placement of metal clips and injection of adrenaline solution. Oral diet was started without new intercurrences. Conclusions IDD are rare and generally asymptomatic. New minimally invasive techniques have been described for the treatment of symptomatic cases. The endoscopic approach by diverticulotomy may be the treatment of choice, with good success rates as described in the literature.

OP141V ENDOSCOPIC RETROGRADE DESINVAGINATION WITH DOUBLE BALLOON ENTEROSCOPE: A NEW ENDOSCOPY TREATMENT FOR SMALL BOWEL

Authors Pérez-Cuadrado Martínez E1, Sánchez Melgarejo JF1, Rubio Mateos JM1, Sánchez Fernández MJ1, Pérez Fernandez A1, Delgado PE1, Pérez-Cuadrado Robles E2

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Introduction Symptomatic intussusception of a long ileal segment in the colon has surgical treatment. Large-channel double balloon enteroscopy (DBE) (3.2 mm) is providing new therapeutic solutions.

Case report During a colonoscopy in a 42-year-old patient with rectal bleeding and symptoms of subocclusion, an invaginated mass was identified through Bahuin. A DBE (via anal) identified the head of the same (large polyp) by cecal retroversion. After optimal positioning aligned with terminal ileum, the invaginated segment is reintroduced, pushing the lesion with the distal end of the enteroscope with inflated balloon, locating its implantation site at 60 cm from Bahuin but without identifying pedicle. With the enteroscope proximal to the lesion and its balloon inflated, then we retracting the lesion until its clear exposure (semipediculate very wide) and perform adrenaline infiltration for mucosal resection. The lesion was removed and schar closed with clips with tattoo of this site. The control with capsule of the asymptomatic patient shows the tattoo and eschar in good condition 70 minutes before Bahuin orifice.

Comments The lesion should not be removed from the colon by: 1) possibility of perforation of the invaginated serosa and 2) after polypectomy the lesion could return to its implantation origin site, leaving the eschar outside the scope of the treatment (almost always necessary). The scheme of this new technical variant is presented. First description of disinvagination and treatment of its cause in ileum by EDB by VA. Inflation/deflation of both balloons has been shown to be useful for optimal positioning and reduction of intussusception. We have only found an anterograde disinvagination in small bowel in the jejunum (Yamamoto H et al Gastrointest Endosc 2004), but no retrograde cases treatment with DBE are performed.

OP142V TUNNEL DISSECTION FOR ESOPHAGEAL GLOMUS TUMOR

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Our patient, a 67-year-old male, presented with a long history of COPD. Regular thoracic CT revealed a tumor in esophagus arising from the lateral posterior wall, measuring 3.0*2.0*2.7 cm, with mediastinal lymphadenopathy. Endoscopy with ultrasound showed a mass in the proximal third of the esophagus, of heterogeneous structure, arising from 4th layer. The initial impression was that of a gastrointestinal stromal tumor. However, there were too many doubts.

He was then scheduled for a total biopsy via endoscopic tunnel access. The mass was successfully removed through the esophagus. The tumor, 27 × 25 × 23 mm in size, was composed of epithelioid cells with rounded small nuclei and eosinophilic cytoplasm. The mitotic figures were scarce [3/50 high-power fields (HPF)]. Immunohistochemically, the tumor cells were moderately positive for α-SMA, muscle-specific actin (MSA); positive for synaptophysin and CD 56 (weakly); negative for CD34, CD 117, DOG1, desmin, HMB45, chromogranin A, melan A and S-100 protein. Ki-67 was from 2 to 10%. This features suggested glomus tumor.

The patient had an uncomplicated postoperative course and was discharged from the hospital 2 days after surgery. He remains healthy without any recurrence to date two months after surgery.
comes, measured by TBWL (total body weight loss), % TBWL and % excess weight loss (% EWL).

**Results** There were no intra-procedural nor early serious adverse events. All patients were discharged the day after the procedure. The average procedure time evolved from 120 min for the first 3 patients to 35 min for the last 3 patients). The average number of full thickness automatic sutures placed was 2.6 (range 2 – 3).

TBWL, % TBWL and % EWL were: at 1 month (n = 10): 9.3 kg, 8.9% and 33.4% respectively; at 3 month (n = 6): 11.8 kg, 11.5% and 46.1% respectively and at 6 month (n = 2): 20.9 kg, 20.9% and 95.3%. At 1 month endoscopic control showed that sutures were in place. The study is ongoing.

**Conclusions** Endozip procedure allows a minimally invasive automated suturing of the stomach. First in human results showed safety, feasibility and effectiveness in a short duration procedure. Some evolution in navigation and visibility will be key to include this procedure in the available BET.

**OP144 SAFETY PROFILE OF THE POSE PROCEDURE**

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**DOI** 10.1055/s-0039-1681320

**Aims** Bariatric surgery, diet and lifestyle modifications, and non-exogenous drugs, have not managed to stop obesity worldwide expansion. Several bariatric endoscopic techniques emerge as safe and cost-effective promising alternatives. Our aim was to evaluate the security of the POSE (Primary Obesity Surgery Endolumenal) procedure.

**Methods** Prospective registry of intraoperative incidents, and adverse effects in a consecutive cohort of 518 obese patients (BMI 30 – 44.9) subjected to POSE method within a multidisciplinary program of lifestyle changes. Interventions were carried out by two endoscopists between June-2012 and June-2017. All patients signed the consent informed. Interventions were performed under general anesthesia, antibiotics, and CO2, inserting an ultrathin gastroscope in the incisionless operating platform (IOP), performing 12 – 18 transmural plications in fundus and distal body, in an inpatient basis. Intraoperative incidents, symptomatology, and adverse effects were described.

**Results** The procedure could be performed in 515 patients (99.4%), failing to pass the IOP through the esophagus in 3. Average surgical time: 25 minutes. Minor events: anesthetic mild complications: 2%; intraoperative submucosal bruising: 24.8%, without clinical impact; mucosal snagging with IOP or forceps were infrequent, and 100% solvable. In 5 we treated hemorrhagic points. Symptomatology: most patients had mild to moderate epigastric pain lasting 24 – 72 hours, requiring opioids in 3.5%; slight cervical pain: 62%; chest pain: 4.8%; low fever: 1.5%; postoperative vomiting: 5%; Major events: 2 gastric bleedings, one within 24 hours, resolved with adrenaline/clips. Another after 3 weeks in context of NSAIAs due to gout in a thrombocytopenia-HIV patient, requiring transfusions. There was an asymptomatic pneumoperitoneum. Up to 97% of patients were discharged in <24 hours.

**Conclusions** The POSE method is safe and feasible in a short surgical time. Its commonest symptom is mild epigastric pain, being its biggest drawback is asymptomatic mural bruises production. Only three major complications were registered.

**OP145 EUROPEAN ENDOSCOPIC SUTURING REGISTRY FOR BARIATRIC PATIENTS**

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**DOI** 10.1055/s-0039-1681321

**Aims** Full-thickness endoscopic suturing has demonstrated multiple uses, including endoscopic sleeve gastroplasty (ESG) as a primary bariatric procedure and a reduction of dilated gastrojejunal anastomosis (TORe: transoral outlet reduction) in patients who have weight regain after bariatric surgery. This prospective observational multicenter registry allows monitoring feasibility, safety and weight loss of patients that underwent endoscopic suturing with Overstitch system (Apollo Endosurgery).

The aim of this Registry is to determine practice patterns, complications and weight loss results in the use of this device.

**Methods** Multicenter, longitudinal, data registry for ESG and TORe. We expect to include a representative collection of European centers performing these procedures without a hard target goal of patients for each procedure (estimated 240 – 300 per year). Demographic, procedural and follow-up outcomes will be recovered. Longitudinal data collection will extend up to 2 years. Eight centers are enabled to enroll consecutive patients from April 2018. The study is ongoing.

**Results** To date of December 1st a total of 175 procedures were included. These included 139 ESG (117 Primary Obesity Therapy and 22 Bridge to other bariatric techniques) and 36 TORe (trans endoscopic outlet reduction) procedures. For TORe procedure, the mean number of sutures placed for outlet reduction was 1.94 ± 1.2 (66.6% interrupted and 33.3% running sutures) and 1.3 ± 0.6 sutures were placed for pouch volume reduction (70.8% interrupted and 29.1% running sutures). At ESG patients the suturing pattern used was 60.8% U or triangular pattern and 39.2% Zeta suture pattern. There was only 1 complication, 1 gastric perforation in a Primary obesity ESG, solved successfully with full endoscopic treatment. No patients required surgical intervention.

**Conclusions** Data collection for mid/long term efficacy, suturing patterns and safety is still ongoing, and accumulating a significant body of evidence on endoscopic full thickness suturing for bariatric patients of different European countries.

**OP146 TRANSORAL OUTLET REDUCTION FOR WEIGHT REGAIN AFTER GASTRIC BYPASS: ONE YEAR FOLLOW-UP**

**Authors** Bove V1, Boikoski I1, Landi R1, Gibino G1, Laterza L1, Mangiola F1, D’Avella F1, Familiari P1, Tringali A1, Attili F1, Perri V1, Costamagna G1

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**DOI** 10.1055/s-0039-1681322

**Aims** Enlargement of gastrojejunal anastomosis is associated with weight regain in patients with Roux-en-Y gastric bypass (RYGB). Endoscopic transoral outlet reduction (TORe) has proven safe and effective for treatment of weight regain. The objective of this study was to evaluate the safety and the efficacy in weight loss and quality of life after TORe.

**Methods** Patients with at least 50% of weight regain and enlarged gastric outlet after RYGB treated at our centre were retrospectively identified from a prospectively collected database. Endoscopic outlet reduction was performed with Overstitch (Apollo-Endosurgery). Before suturing the outlet rims were cauterized with pulsed Argon Plasma Coagulation on 40 Watts,1 l/min (VIO 300D, ERBE Elektromedizin GmbH). Follow-up was done at 1,3,6 and 12 months. The quality of life was evaluated according to the Quality Of Life Scale (QOLS).

**Results** Thirty-three patients (29 female, mean age 43.7) underwent TORe from January 2015 to April 2017. Baseline mean BMI was 37.9 (range 31 – 50). Mean number of 2.3 stitches per patient were placed (range 2 – 4) on the level of the gastric outlet. After suturing the patency of the redone outlet was tested with a standard gastroscope. There were 2 (6%) complications: one patient developed fever due to a small retrogastric collection and was treated
OP147 ENDOSCOPIC SLEEVE Plication (ESP) for Treatment of Obesity I-I. PRELIMINARY RESULTS OF 2 sites with the New Pattern for Gastric Emptying Delay

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Doi 10.1055/s-0039-1681323

Aims Obesity is major disease in our society. Intragastric balloon is the endoscopic gold standard on short time weight loss. Endoscopic plication can offer us better middle long term results than balloon for its durability.

Methods This is a multi-center, prospective pilot study intended to evaluate the safety and efficacy of the Endoscopic Sleeve Plication procedure (mid & distal body plications) (ESP).

Study was Ethics approved at institutions. Written consent obtained. Indications have been obesity grade II. Use of the Incisionless Operating Platform (IOP)™ (USCI Medical, San Clemente, CA, USA) with a defined new pattern of disposition of the transmural plications with the g-cath EZ suture anchors in the greater curvature shortening and tubulizing the stomach to potentially delay gastric emptying and reduce gastric volume/accommodation for an enhanced physiological effect.

Follow up data will be obtained prospectively every 2 weeks initially for the first 2 months and then monthly for the next 10 months on as part of our long term follow-up program that also emphasized changes in unhealthy eating/lifestyle habits.

Results 17 operations in 17 patients were successfully performed (M: 9 F: 8). Mean age was 44.1 (25 – 59). Mean BMI 37.4 (Range 35.2 – 40.0). Mean number of anchors placed was 18.6 (range 14 – 21). All patients were discharged ≤ 24 hours. There were no serious adverse events (SAE). % Mean Total body weight loss at 2 months for the 17 patients was 11.17 ± 2.33 Kg and the % Excess Weight loss at 2 months was 34.26 ± 8.23%. All patients reported less hunger and earlier satiety post-procedure.

Conclusions The ESP procedure seems to be a safe intervention without significant adverse effects to date. Initial results in weight loss are encouraging. However, long term follow-up and further study remains necessary to assess its value in treating the multi-factorial etiology of obesity.

OP148 BARIATRIC ENDOSCOPY: COMPARISON OF 962 PATIENTS OF 4 DIFFERENT TECHNIQUES WITH SAME ENDOSCOPIST AND SAME FOLLOW UP TEAM

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Aims New bariatric endoscopic techniques (BET) have been developed for the obesity treatment. Most centers tend to specialize in one procedure, such as Endoscopic sleeve gastropasty (APOLLO gastropasty), Primary Obesity Surgery Endolumenal (POSE method) or Intragastric Balloon (IGB) (Orbella or Dual), so it is difficult to compare different techniques results. The objective of this study is to evaluate different BET performed by the same endoscopist and same follow up team.

Methods Prospective single-center study over 962 patients (28.2% men) that underwent a BET between March 2012 and December 2017, in the Bariatric Endoscopy Unit of Madrid HM Sanchinarro University Hospital, with at least 1 year of follow-up. Distribution of techniques was: Orbella IGB 389, Dual IGB 92, APOLLO gastropasty 247 and POSE method 234. Mean initial BMI and age were 37.8 kg/m² and 45.3 years. The same multidisciplinary team (nutrionist and psychologist) carried out the follow up. Lineal regression analysis was used to evaluate the % TBWL at 1 year adjusted by gender, age, initial BMI, procedure type and % of attendance at concerted visits with the team.

Results At 1 year of follow up, mean TBWL, % TBWL and EWL were 18 kg, 16.3% and 51% respectively Analyzing responding rates: 2/3 of the sample reached > 10% and 1/3 > 20% of % TBWL. APOLLO gastropasty patients obtained higher TBWL, % TBWL and % TBWL> 20%. Predictive variables of higher % TBWL were: higher % of attendance (B = 0.082. p < 0.001) and higher initial BMI (B = 0.495. p < 0.001).

Conclusions BET can be considered an effective treatment with high rate of responders weight loss. Adequate follow-up and selection of patients, should be one of the main objectives as it is closely related to achieving better results.

OP149 TRANSORAL OUTLET REDUCTION WITH SEMI-CIRCUMFERENTIAL ENDOSCOPIC SUBMUCOSA DISSECTION IS SUPERIOR TO ARGON PLASMA COAGULATION

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Aims Roux-en-Y gastric bypass (RYGB) is a standard bariatric and metabolic procedure to induce weight-loss. Years after the intervention, a dilated gastrojejunal anastomosis (GJA) leads to weight regain or dumping syndrome. Recently, transoral outlet reduction (TOR) to GJA-dimination has been established by endoscopic suturing after tissue ablation with argon plasma coagulation (APC). However, rupture of sutures before scarring can lead to recurrent dilation of GJA. In this study, we compared a semi-circulated endoscopic submucosa dissection (ESD) as a novel approach for its superiority over APC before TOR.

Methods Data of patients who underwent APC-TOR or ESD-TOR were prospectively collected and retrospectively analyzed. The main objectives were reduction in GJA diameter and ruptured sutures. Technical success, complications, total weight loss (TWL), percent of total and excess weight loss (% TWL and % EWL) at 3 and 12 months, were assessed. Fisher’s exact test, Student’s t-test, Chi-Square-test and regression analyses were performed.

Results Forty-one patients with comparable baseline characteristics were enrolled (APC-TOR: 26, ESD-TOR: 15). ESD-TOR resulted in significantly fewer ruptured sutures (20% vs. 69%, p = 0.004) and a higher reduction of GJA (major: 20% vs. 0%, minor: 54% vs. 37%, no: 13% vs. 58%, p = 0.015) for 3 months. ESD-TOR was also identified as prediction parameter for fewer broken sutures and larger GJA reduction. TWL, % TWL or % EWL revealed no significant differences between both groups. Technical efficacy, examination time and rate of complications were comparable.
Conclusions ESD-TOR resulted in a significantly higher reduction in GJA diameter and lower risk of ruptured sutures compared to APC-TOR.

**OP150 DUODENO-JEJUNAL BYPASS LINER FOR THE TREATMENT OF DIABETES MELLITUS IN OBSESE PATIENTS: COMPLETENESS OF DUODENAL BLINDING AS THE KEY FACTOR FOR EFFICACY**

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**DOI** 10.1055/s-0039-1681326

**Aims** The global increase in obesity incidence results in an increase of type 2 diabetes mellitus (T2DM). Surgical treatment has proven to be effective, however it carries a high risk of complications. The duodenal-jejunal bypass liner (EndoBarrier, GI Dynamics, EB) is an endoscopic implant that mimics the intestinal bypass portion of the Roux-en-Y Gastric Bypass. It results in weight loss and improvements in glucose control in obese patients with T2 diabetes mellitus (T2DM). We aimed to identify factors associated with an outcome of EB for T2DM.

**Methods** This is a analysis of a prospective, controlled, multicentre study.

**Results** Seventy subjects (45 with an implant, 25 controls) were included in the study. The groups were comparable with respect to age, gender, BMI (mean 41.7 vs. 39.5 kg/m²), T2DM duration (7.8 vs. 8.3 years), HbA1c level (88 vs. 86 mmol/mol) and T2DM treatment. In the EB group, all devices were successfully implanted. Only 6 devices had to be explanted prior to the end of the 10 months study period (bleeding, dislocation and need for ERCP because of choledocholithiasis). At 10 months there was significantly greater weight loss and % EWL (19% vs. 7% and 43 vs. 12) and significantly improved long term compensation of T2DM marker HbA1c (decreased by 25 vs. 10 mmol/mol) in the EB group. T2DM medical treatment could be reduced in more device subjects than controls. There was no serious adverse event. Deepness of anchor ingrow, lower initial BMI and lower body height were identified as positive factors for efficacy of EB for T2DM compensation.

**Conclusions** The EB is safe when implanted for 10 months, and results in significant weight loss and HbA1c reduction. Deepness of anchor ingrow, lower initial BMI and lower body height could be positive factors for efficacy.

**OP151 THE ROLE OF MULTIDISCIPLINARY APPROACH IN ENDOSCOPIC SLEEVE GASTROPLASTY**

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**DOI** 10.1055/s-0039-1681327

**Aims** Endoscopic sleeve gastroplasty (ESG) is a relatively novel endoscopic procedure that reduces the gastric lumen with proven less complications and less 6 months weight loss compared to laparoscopic sleeve gastroplasty. At present there are no studies investigating the role of multidisciplinary approach in ESG. The aims of the present study were to evaluate the role of multidisciplinary assessment (MA) prior ESG, weight loss outcomes and quality of live improvements.

**Methods** From May 2016 to May 2018 all pts that underwent ESG were retrospectively evaluated from a prospective database. Until September 2017 before ESG only psychiatric evaluation was requested, while after this date all patients were evaluated on a multidisciplinary fashion prior ESG, composed by: gastroenterologist, surgeon, psychiatrist, endocrinologist and dietitian. Pts were divided in 2 groups: group 1 were pts with ESG before MA and group 2 were pts with ESG after MA. We compared this 2 groups in terms of weight loss outcomes and quality of live improvements (BAROS scale). All procedures were done with the Apollo Overstitch suturing system (Apollo Endosurgery) and a double channel gastroscopy Olympus 2TGF-160 (Olympus Japan). All procedures were done in general anesthesia and with CO2-insufflation. All patients had ambulatory visit at 1,3 and 6-months after ESG and the outcomes were measured in terms of Excess Weight Loss (% EWL), Total Body Weight Loss (% TBWL) and BAROS scale. Statistical analysis was done with chi-square test and<0.05 value was considered significant.

**Results** 31 pts were identified (20 f;mean age 45.4, range 23 – 73). Mean BMI at inclusion was 41.6 (range 31.6 – 62.4). Mean % EWL and % TBWL at 6-months was 37.1 and 16.7 respectively. No procedure related complications were observed. Comparing the two groups there was significant (P<0.05) difference in terms of % EWL (26.5% Vs.42.2%) and % TBWL (14.7% Vs.18.8%), with better results in group 2. There was also a significant improvement in the BAROS scale in the patients in group 2 (2.5 Vs. 5.7).

**Conclusions** MA before ESG has a fundamental role in terms of better procedure outcomes for both weight loss and quality of live in obese pts.

**OP152 BODY COMPOSITION ALTERATIONS WITH THE ENDOSCOPIC TREATMENT OF OBESITY WITH INTRAGASTRIC BALLOON (IGB). IS IT THE BEST FOLLOW UP STRATEGY?**

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**DOI** 10.1055/s-0039-1681328

**Aims** IGBs are part of the therapeutic arsenal in the fight against obesity. Body mass index (BMI) is the most widespread method used worldwide to classify the degree of obesity. Since BMI is an imprecise method for analyzing body composition, there is an urgent need to adopt more objective methods for patient follow-up and the treatment of obesity, helping in the adoption of strategies for maintaining weight after withdrawal of the accessory.

**Methods** We retrospectively analyzed the results obtained after endoscopic treatment of obesity with IGB. The sample consisted of 46 patients. The variables considered were the decrease in TBWL, BMI, changes in body composition and metabolic rate. Subgroup analysis was done according to the degree of obesity. We used means and standard deviation, Wilcoxon and the T-test. In order to analyze the difference between the groups, the Kruskal-Wallis and the Dunn test were used.

**Results** The initial mean weight was 90.6 ± 16.1 kg and after removal of the IGB was 75.7 ± 12.5 kg, and the BMI ranged from 34.1 ± 4.8 to 28.6 ± 3.7 p<0.05. The percentage of fat free mass presented an increase of 9.4%, from 61.5 ± 4.2 to 67.3 ± 5.8 p<0.05. The percentage of body fat ranged from 38.5 ± 4.2 to 32.6 ± 5.8 p<0.05. The metabolic rate decreased from 1731 ± 303 to 1589 ± 268. Patients with grade 2 and 3 obesity presented higher total body weight loss, decreased BMI, and greater loss of fat free mass. Regarding the metabolic rate, the grade 2 and 3 obesity groups presented a statistically greater reduction.

**Conclusions** Treatment with IGBs presents consistent results in weight loss, changes in body composition and metabolic rate. Follow-up considering changes in body composition and metabolic rate is efficient and may suggest different strategies for each result obtained.
OP153 MORE DETECTED POLYPS PER PATIENT WITH 1L NER1006 VERSUS STANDARD BOWEL PREPARATIONS: META-ANALYSIS OF 1749 PATIENTS IN THREE RANDOMISED PHASE 3 CLINICAL TRIALS

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Aims Effective colonoscopy requires adequate bowel cleansing to detect polyps of 5 mm or more in size. The 1L polyethylene glycol (PEG) NER1006 recently demonstrated superior high-quality colon cleansing efficacy over standard bowel preparations with, between them, comparable cleansing efficacies on validated cleansing scales. To explore the clinical value of improved high-quality cleansing, this meta-analysis of three randomised clinical trials assessed the mean lesion detection rates per patient for NER1006 versus standard treatments.

Methods Colon cleansing efficacy of split-dosing NER1006 was assessed as either overnight dosing (N2D) versus 2L PEG + ascorbate (2LPEG; MORA trial) or oral sulfate solution (OSS; NOCT trial), or as day before dosing (NDB) versus sodium picosulfate + magnesium citrate (SPMC; DAYB trial). Morning only dosing of NER1006 (N1D) was also assessed in MORA. Polyp- and adenoma detection were key secondary endpoints and these lesions were detected by site endoscopists as usual clinical practice. Per-patient averages of overall colon polyps and adenomas were calculated for NER1006 versus comparators, per treatment and at an aggregate phase 3 level.

Results From 185 randomised patients, 1749 with available lesion counts were included (Table). At the aggregate level, NER1006 demonstrated a significantly higher mean polyp detection per patient than the comparators (Mean [SD]: 1.23 [2.69] vs. 1.00 [1.73]; P = 0.014). Within each trial, NER1006 also demonstrated numerically higher mean polyp detection per patient than its comparator.

Tab. 1 Mean number of overall colon polyps detected per patient with 1L PEG NER1006 versus older treatments.

<table>
<thead>
<tr>
<th>Phase 3 trial</th>
<th>MOROA</th>
<th>NOCT</th>
<th>DAYB</th>
<th>Phase 3 aggregate: DAVB (MORA/NOCT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Split-dosing bowel preparations</td>
<td>N2D (n = 256) vs. N1D (n = 256) vs. 2LPEG</td>
<td>N2D (n = 251) vs. OSS (n = 258)</td>
<td>N2D (n = 229) vs. SPMC (n = 230)</td>
<td>N1D (n = 250) vs. N1D (n = 1002) vs. SPMC, 2LPEG or OSS (n = 745)</td>
</tr>
<tr>
<td>Overall colon polyp count per patient, NER1006 vs. Comparator; mean ± SD; p-value</td>
<td>1.25 ± 0.94 vs. 1.06 ± 1.28; 0.033</td>
<td>1.04 ± 0.68 vs. 0.77 ± 1.13; 0.004</td>
<td>1.23 ± 0.69 vs. 1.00 ± 1.73; 0.014</td>
<td>1.06 ± 0.73 vs. 0.50 ± 1.29; 0.001</td>
</tr>
<tr>
<td>Overall colon adenoma count per patient, NER1006 vs. Comparator; mean ± SD; p-value</td>
<td>0.95 ± 0.74 vs. 0.75 ± 1.54; 0.003</td>
<td>0.34 ± 0.54 vs. 0.35 ± 0.87; 0.363</td>
<td>0.61 ± 0.73 vs. 0.30 ± 1.29; 0.001</td>
<td>0.63 ± 0.73 vs. 0.30 ± 1.29; 0.001</td>
</tr>
</tbody>
</table>

Conclusions Bowel preparation with the NER1006 (PLENVU) enables greater detection of overall colon polyps per patient than the pooled use of standard alternatives SPMC, 2LPEG or OSS.

OP154 MORE LESIONS PER PATIENT DETECTED WITH HIGH-QUALITY VERSUS ADEQUATE COLON CLEANSING: A POST HOC ANALYSIS OF UNIFORM SEGMENTAL CLEANSING SCORES USING THE HAREFIELD CLEANSING SCALE

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Aims Effective colonoscopy requires colon cleansing success which is usually based on the least clean colon segment; one poorly cleansed segment triggers an overall failure. This complicates the analysis of cleansing quality versus lesion detection. We therefore analysed the relative lesion detection in patients who had the same cleansing score in all colon segments.

Methods Three similar phase 3 clinical trials assessed the colon cleansing efficacy of 1L NER1006 (PLENVU) versus standard bowel preparations. Cleansing quality assessment was standardised with treatment-blinded central readers using the validated Harefield Cleansing Scale (HCS). Lesions were detected by site endoscopists as per usual clinical practice. Trial results were pooled for this post hoc analysis. The mean number of polyps (MPP) and adenomas (MAP) per patient were calculated in patients with uniform segmental scores ranging from zero (failure) to four (high-quality). One-sided t-tests assuming equal variance assessed MPP and MAP of HCS 4+4+4+4+4 versus lower score groups.

Results Among 1749 patients included in this analysis, 469 had uniform segmental scores (Table). HCS 4+4+4+4 demonstrated a higher MAP vs. HCS 2+2+2+2+2 (1.18 vs. 0.51; P = 0.001) or HCS 1+1+1+1+1 (1.18 vs. 0.10; P = 0.034). MPP was improved with HCS 4+4+4+4+4 vs. HCS 1+1+1+1+1 (1.92 vs. 0.60; P = 0.048). Four patients had HCS uniform scores of zero; no lesions were detected in these patients.

Tab. 1 Uniform segmental HCS scores vs. lesion detection

<table>
<thead>
<tr>
<th>Uniform segmental HCS scores</th>
<th>High-quality 4+4+4+4+4</th>
<th>High-quality 3+3+3+3+3</th>
<th>Adequate 2+2+2</th>
<th>Failure 1+1+1+1+1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample size, N</td>
<td>39</td>
<td>37</td>
<td>375</td>
<td>47</td>
</tr>
<tr>
<td>Polyps per patient, Mean (SD)</td>
<td>1.92 (2.39)</td>
<td>1.27 (2.05)</td>
<td>P = 0.103</td>
<td>1.21 (2.59)</td>
</tr>
<tr>
<td>Adenomas per patient, Mean (SD)</td>
<td>P-value vs. 4+4+4+4+4</td>
<td>0.18 (0.32)</td>
<td>P-value vs. 4+4+4+4+4</td>
<td>0.255</td>
</tr>
<tr>
<td>P-value vs. 4+4+4+4+4</td>
<td>0.51 (1.18)</td>
<td>P = 0.001</td>
<td>0.10 (0.32)</td>
<td>P = 0.034</td>
</tr>
</tbody>
</table>

Conclusions Despite variable sample sizes, this analysis demonstrated a higher MAP for high-quality versus adequate cleansing success and a consistent trend towards improved lesion detection with higher cleansing quality.

OP155 RANDOMIZED STUDY SHOWS THAT SIMPLE, SPECIFIC VERBAL INSTRUCTIONS IMPROVE THE QUALITY OF BOWEL PREPARATION IN INPATIENTS UNDERGOING COLONOSCOPY

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DOI 10.1055/s-0039-1681331

Aims Bowel preparation for colonoscopy is often inadequate in hospitalized patients. We aimed to explore the effect of specific verbal instructions on the quality of inpatients bowel preparation.

Methods Randomized (1:1), two strata (ambulatory vs. bedridden; 3:2) trial of consecutive inpatients from 4 tertiary centers who received either specific, simple, verbal instructions (SSI) about bowel preparation or the standard verbal instructions (SSVI) about bowel preparation or the standard ward instructions (SI). Endoscopists were blinded. Mean BBPS score, very good
(BBPS score $\geq 7$, no segment score $< 2$) and adequate (BBPS score $\geq 6$, no segment $< 2$) colon preparation comprised the study endpoints.

**Results** We enrolled 300 (180 ambulatory) inpatients; 155 (51.7%) men; aged 71.7 ± 15.1 years. 151 (50.3%) patients were randomized to the SI and 149 (49.7%) to the SSVI groups, respectively. We excluded 39 incomplete examinations due to bowel obstruction or patient intolerance. Overall, the mean BBPS score was significantly higher in the intervention group (6.74 ± 2.3 vs. 6.07 ± 2.4; p = 0.02), significantly more patients in the SSVI group achieved adequate bowel preparation (75/129 (58.1%) vs. 57/132 (43.2%); OR (95% CI): 1.83 (1.12 – 2.89)) and more patients in the SSVI group achieved adequate colon preparation (90/129 (69.8%) vs. 82/132 (62.1%); OR (95% CI): 1.36 (0.81 – 2.28)) compared to those of SI. Among ambulatory patients, the mean BBPS score (7.2 ± 1.9 vs. 6.4 ± 2.1; p = 0.02), the rates of very good [41.7% vs. 45%. OR (95% CI): 2.12 (1.02 – 4.39)] bowel preparation were significantly higher in the SSVI group. Among bedridden patients the benefit of provision of SSVI was not observed either on the mean BBPS score (6.06 ± 2.1 vs. 5.52 ± 2.8; p = 0.5) or on the rate of very good [41.7% vs. 40.4%. OR (95% CI): 1.05 (0.47 – 2.34)] or adequate [50% vs. 55.8%. OR (95% CI): 0.79 (0.36 – 1.74)] colon preparation. 

**Conclusions** The quality of bowel preparation significantly increases by providing SSVI to inpatients. However, this effect is restricted among the ambulatory patients, while bedridden patients do not benefit from this intervention.

**OP156 IMPLICATIONS OF REINFORCED EDUCATION IN HIGH QUALITY COLONOSCOPY PREPARATION USING A SMARTPHONE APPLICATION: RESULTS FROM THE COLOPRAPP-STUDY**

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**Aims** Sufficient bowel preparation is crucial for successful screening and surveillance colonoscopy. We investigated the effects of reinforced patient education using a smartphone application for colonoscopy preparation.

**Methods** In this prospective, endoscopist-blinded, multi-center study, standard instructions pertaining to split-dose preparation were provided orally and in a written format to all patients during the initial appointment. Patients were then randomly assigned (1:1) to a group that received reinforced education starting 3 days before the colonoscopy (APP group) or a control group without further education. The primary outcome was quality of bowel preparation according to the Boston Bowel Preparation Scale (BBPS). The secondary outcomes included adenoma detection rates (ADR), patients’ perceived discomfort of the preparation procedure and complete implementation of laxative intake and diet assessed by a self-reporting questionnaire.

**Results** So far, 440 patients have been included. Indication for colonoscopy was CRC-screening (n = 212) or surveillance after previous polypectomy (n = 228). Mean BBPS score was significantly higher in the APP group (7.5 ± 0.1) than in the control group (6.3 ± 0.2) (P < 0.0001). The ADR was significantly higher in the APP group (39 vs. 28%) (P = 0.0084) showing that ADR correlates with BBPS. Patients randomized for the APP group reported a lower level of discomfort during preparation 7.5 vs. 7.1 (NRS) (P < 0.0001) and a higher rate of complete ingestion of recommended amount of laxatives 95% vs. 86% (P < 0.001).

**Conclusions** Reinforced patient education using a smartphone application increased bowel cleanliness. Furthermore, using an APP for instruction was associated with an increase in adenoma detection rate and patients’ acceptance.

**OP157 PLAN-DO-STUDY-ACT APPROACH FOR IMPLEMENTING SPLIT REGIMEN OVER SINGLE DOSE (IMPROVES STUDY)**

**Authors** Vanella C1, Hassan C2, De Bellis M3, Giardini M4, Grasso E5, Manning J1, Amlani B2, Hassan C3

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**Aims** Split-dose regimen for colonoscopy is recommended by international guidelines, but its adoption is still suboptimal. The Plan-Do-Study-Act approach (PDSA) is a scientific method used to promote continuous quality improvement of complex processes. The aim of this study was to assess whether PDSA is able to improve adherence to split-dose regimen.

**Methods** According to a PDSA approach, split-dose regimen adoption was assessed in two periods separated by data analysis and tailored interventions, namely: 1) Cycle1: assessment of split dose adherence in consecutive outpatients and inpatients undergoing colonoscopies in 74 Italian centres; 2) Educational intervention: two mandatory meetings with literature review, analysis of Cycle1 data and discussion of hypothetical corrective measures; 3) Cycle2: final assessment of post-interventional adoption of split-dose regimen. Demographic, clinical and procedural variables were systematically collected. Multivariate logistic regression was used to identify predictors of split-dose regimen adoption.

**Results** 8,213 patients (mean age 60.29 (SD 13.58), men 54%, outpatients 88.4%) were enrolled between 2013 and 2016 (4,189 in Cycle1 and 4,024 in Cycle2). The Split-dose regimen adoption raised from 29.1% of Cycle1 to 51.1% of Cycle2 (p < 0.0001), and being enrolled in Cycle2 was an independent predictor of Split-dose regimen adoption (OR 2.9; 95% CI 2.6 – 3.3). The adoption improved in all time slots, including colonoscopies scheduled before 9:30 am. The main corrective measures were: rescheduling of colonoscopies between 9:30 and 11:30 am (OR 2.6; 95% CI 2.3 – 3.1) and after 11:30 am (OR 7; 95% CI 5.9 – 8.4), the cleansing regimen communicated by the Endoscopy Unit (via form: OR 1.6 95% CI 1.3 – 1.9; via visit: OR 2.1 95% CI 1.7 – 2.5) and by more than one modality (OR 2.8; 95% CI 2.3 – 3.3), a decrease in the use of deep sedation (OR 2; 95% CI 1.7 – 2.5).

**Conclusions** An educational intervention with observation-driven corrections according to a PDSA approach was able to substantially increase the adoption of the split-dose regimen.

**OP158 IMPROVED REAL-WORLD LESION DETECTION WITH HIGH-QUALITY VERSUS ADEQUATE LEVEL COLON CLEANSING: POST HOC ANALYSIS OF RANDOMISED CLINICAL TRIALS USING THE BOSTON BOWEL PREPARATION SCALE**

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**Aims** Adequate colon cleansing permits detection of small (> 5 mm) polyps and is defined as a segmental Boston Bowel Preparation Scale (BBPS) score of at least 2 (overall 6). Minimal targeted lesion sizes may however vary by practice. This post hoc analysis of three randomised clinical trials assessed real-world lesion detection versus BBPS scores assessed with academic rigor.

**Methods** Three similar phase 3 randomised clinical trials assessed the colon cleansing efficacy and safety of 1L NER1006 (PLENVU) versus standard bowel preparations. Polyps were detected by site endoscopists as per local practice.
Cleansing quality was assessed by treatment-blinded central readers using the BBPS. This pooled analysis excluded patients with missing segmental cleansing score or lesion count data. Polyp- (PDR) and adenoma (ADR) detection rates plus the mean number of polyps (MPP) and adenomas (MAP) per patient were calculated. One-sided t-tests assuming equal variance compared the lesion detection in BBPS 7–9 (high-quality) versus lower score groups.

**Results** Out of 1985 randomised patients, 1749 were included (Table). High-quality cleansing improved lesion detection versus adequate cleansing for PDR (52% vs. 42%; P < 0.001), ADR (36% vs. 26%; P < 0.001), MPP (1.38 vs. 1.02; P = 0.003) and MAP (0.81 vs. 0.52; P < 0.001). High-quality cleansing also increased lesion detection versus cleansing failures for PDR (52% vs. 41%; P = 0.002), ADR (36% vs. 28%; P = 0.008), and MAP (0.81 vs. 0.51; P = 0.011).

**Tab. 1** Overall colon cleansing quality vs. lesion detection using the BBPS; P-values vs. high-quality cleansing (BBPS 7–9)

<table>
<thead>
<tr>
<th>Overall BBPS scores assessed by treatment-blinded central readers</th>
<th>High-quality BBPS 7–9 (N = 463)</th>
<th>Adequate BBPS 6 (N = 958)</th>
<th>Failure BBPS 0–5 (N = 328)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polyp detection rate: patients, n/N (P-value vs. BBPS 7–9)</td>
<td>240 (463) (72)</td>
<td>399 (958) (42)</td>
<td>135 (328) (41)</td>
</tr>
<tr>
<td>Adenoma detection rate: patients, n/N (P-value vs. BBPS 7–9)</td>
<td>168 (463) (36)</td>
<td>249 (958) (26)</td>
<td>92 (328) (28)</td>
</tr>
<tr>
<td>Polyps per patient, Mean (SD); P-value vs. BBPS 7–9</td>
<td>1.38 (2.86) (36)</td>
<td>1.02 (1.98) (26)</td>
<td>1.09 (2.42) (28)</td>
</tr>
<tr>
<td>Adenomas per patient, Mean (SD); P-value vs. BBPS 7–9</td>
<td>0.81 (2.21)</td>
<td>0.52 (1.28)</td>
<td>0.51 (1.13)</td>
</tr>
</tbody>
</table>

**Conclusions** High-quality cleansing on the BBPS enables a greater real-world detection of polyps, adenomas, mean number of polyps per patient, and mean number of adenomas per patient than adequate-only cleansing quality.

**OP159 FACTORS ASSOCIATED WITH ADEQUATE BOWEL PREPARATION: OBSERVATIONS FROM THE EUROPEAN COLONOSCOPY QUALITY INVESTIGATION (ECQI) QUESTIONNAIRE**

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**DOI** 10.1055/s-0039-1681335

**Aims** To investigate the factors associated with adequate bowel preparation using questionnaire responses from across Europe.

**Methods** The development of the procedure questionnaire, by the European Colonoscopy Quality Investigation (ECQI) Group, has been previously described in posters presented at UEGW, 2015 and 2016. Data collection is an ongoing process. We analysed data collected between 2/6/16 and 30/4/18. A stepwise multivariable logistic regression analysis was performed to investigate which factors are associated with achievement of adequate bowel preparation, defined as a Boston Bowel Preparation Scale (BBPS) score ≥6. Analysis was performed on the following variables: age over or under 50; gender; body mass index (BMI) categories; inpatient/outpatient status; reason for procedure; use of bowel preparation; whether the patient followed instructions; proportion of bowel preparation consumed; total volume of fluid consumed; time period since last dose of bowel preparation; dosing regimen; time of day colonoscopy was performed.

**Results** Data were collected on 6455 procedures, of which whether bowel preparation was adequate (BBPS ≥6) or not could be determined in 6236. Of these, there were 2884 procedures where the results of all selected variables were known: adequate bowel preparation was achieved in 86.96% of these procedures. The first five variables most associated with adequate bowel clearance were, in order:

1. Patient following instructions (89.1% vs. 54.3%, p < 0.0001).
2. Split-dosing or same-day regimen (89.5% split-dosing and 90.8% same-day vs. 77.9% evening, p = 0.004).
3. Outpatient status (88.4% vs. 77.3% inpatient, p < 0.0001).
4. Age < 50 years (93.3% vs. 85.3% > 50 years, p < 0.0001).
5. Lower time period between procedure and last intake of bowel preparation (mean 6.1 hours vs. 8.0 hours in those with inadequate bowel preparation, p = 0.003).

**Conclusions** Patients following instructions is the most important factor associated with achieving adequate bowel clearance followed by using a split-dosing or same-day regimen.

**OP160 COMPARISON OF THE EFFECTIVENESS OF FOUR BOWEL CLEANSING PREPARATIONS BEFORE COLONOSCOPY – RANDOMIZED, SINGLE – BLIND STUDY**

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**DOI** 10.1055/s-0039-1681336

**Aims** The aim of the study is to compare the effectiveness of bowel cleansing preparations. Polyethylene glycol (PEG) as a gold standard of bowel cleansing and low – volume solutions: sulphate-based solution (SBS), low-volume PEG + ascorbic acid (2L-PEG/Asc) and sodium picosulfate + magnesium citric-acid solution (SP/MC).

**Methods** Randomized, single-blind study. Patients with colonoscopy from all indications (except planned therapeutic procedure) have been recruited. Instructions have been provided orally and in printed version with split-dose regimen recommended. The bowel cleansing quality has been evaluated by the experienced endoscopists blinded to the type of a bowel preparation. The effectiveness has been assessed by the degree of bowel cleansing according to Boston Bowel Preparation Scale (BBPS) and polyp detection rate (PDR), Interim analysis presented.

**Results** In the period 09/2017 till 09/2018 304 individuals were included. Split-dose regimen was respected in 84.2%. Adequate bowel cleansing (BBPS total score ≥6 and sub score ≥2 in each colonic segment) was comparable for all groups (96.1% PEG; 94.5% SBS; 93.5% 2L-PEG/Asc; 93.6% SP/MC; p = 0.912). Excellent bowel cleansing (BBPS total score ≥8 and sub score ≥2 in each colonic segment) was significantly often in PEG and SBS group (90.8% PEG; 86.3% SBS; 75.3% 2L-PEG/Asc; 76.9% SP/MC; p = 0.031). Polyp detection rate was comparable for all groups (48.7% PEG; 48.0% SBS group; 40.3% 2L-PEG/Asc; 41.0% SP/MC; p = 0.610).
Conclusions The interim results show the comparable efficiency of bowel preparation for all four tested solutions. Low volume solutions could be appropriate alternative of polyethylene glycol. The results need to be verified on larger set of individuals. Target number of individuals for the study is 400. Supported by the projects MO1012 a Progres Q28/LF1. The study is registered on ClinicalTrials.gov (NCT03242369).

**SPLIT VS. DAY BEFORE AND LOW RESIDUE VS. CLEAR PREPARATION FOR COLONOSCOPY**

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**DOI** 10.1055/s-0039-1681337

**Aims** The data on the salvage option for patients whose bowel preparation is predicted to be inadequate are limited. This study aimed to evaluate the impact of additional oral preparation at the same day of colonoscopy on the quality of bowel preparation in patients showing opaque yellow with particles or brown effluent.

**Methods** Between September 2015 and June 2018, a multicenter, prospective endoscopist-blinded randomized controlled trial was conducted. Patients reporting their last effluent as opaque yellow with particles or brown at the time of arrival to the endoscopy unit were randomized to additional oral preparation (further preparation with 1L of PEG+Asc) group vs. Control (strongly recommend walking without taking additional purgative) group. All colonoscopies were performed on the afternoon. Bowel preparation was considered to be adequate if total Boston Bowel Preparation Scale (BBPS) ≥ 5 points in per-protocol analysis.

**Results** A total of 157 patients were enrolled (male, 53.5%, 61.4 ± 13.9 years old). Adequate bowel preparation was significantly higher in patients assigned to additional oral preparation group compared with control (83.3% vs. 61.0%, p = 0.002). More patients allocated to additional oral preparation group showed nausea during the preparation compared with those in control. There were no difference in willingness to repeat bowel preparation between two groups.

**Conclusions** Additional oral preparation could be considered in patients who is predicted to be inadequate bowel preparation before colonoscopy. Clinical-Trial.gov (NCT02540031).

**SPLIT vs. DAY BEFORE AND LOW RESIDUE VS. CLEAR FLUID REGIMENS ON THE COLONOSCOPY PREPARATION**

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**DOI** 10.1055/s-0039-1681338

**Aims** Colonoscopy is widely used to diagnose and treat colonic diseases. Its' accuracy and quality depends on the colonoscopy preparation. Split dosage of Polyethylene Glycol (PEG) has been shown to improve the colonoscopy preparation in comparison to the “day before” prescription. Also, using low residue diet can improve the patient's tolerance and satisfaction and therefore, his/her co-operation in preparation steps. In this study we have combined and assessed these two concepts on four groups of patients.

**Methods** Four hundred and seventy individuals with a variety of indications for colonoscopy were randomly allocated in 4 groups:

- **Group A** 115 patients receiving PEG in the day before + eating low residue diet;
- **Group B** 110 patients using PEG the day before + liquid diet only;
- **Group C** split doses of PEG + low residue diet: 118 patients;
- **Group D** split doses of PEG + liquids only: 110 patients using PEG the day before + eating low residue diet.

**Conclusions** According to our results, these regimens can be used interchangeably with each other; however, the clear fluid induces a mild better colon preparation in comparison to low residue protocol.

**EUS therapeutic pancreas**

**Friday, April 5, 2019 14:30 – 16:30**

**S273**

**OP163 ENDOSCOPIC ULTRASOUND GUIDED RADIOFREQUENCY ABLATION FOR NEUROENDOCRINE TUMORS: A SINGLE CENTER CASE SERIES**

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**DOI** 10.1055/s-0039-1681339

**Aims** Radiofrequency ablation (RFA) has been used to treat abdominal tumors. Pancreatic tissue is particularly sensitive to external insults, including heat, leading to slower adoption of RFA for pancreatic tumors. RFA provided survival benefit in unresectable pancreatic cancer patients. EUS-guided RFA (EUS-RFA) in the pancreas of animals is feasible, with an acceptable incidence of pancreatitis suggesting its use for managing small pancreatic neuroendocrine tumors (PNETs), above all the functions pNets such as insulinomas. The EUS-RFA system consists of a 19-gauge needle electrode, generator, and internal cooling system (EUSRA system Taewoong). The needle electrode is passed under EUS guidance into the target lesion avoiding pancreatic/bile duct. The echogenic needle tip is positioned at the far end inside the lesion. The energy delivery (10 watt) was applied when the needle tip of the electrode was visualized within the margin of lesion on EUS.

**Methods** We enrolled prospectively ten patients (6 males, mean age 78.6 years) with a diagnosis of pNets obtained with a Cb scan and an eus (with a fine needle biopsy to confirm the nature of the lesions) and all of these patients were not fit for surgery for comorbidities or refused surgery. Among these 3 patients had symptomatic insulinomas with severe difficulties to control glycemic imbalance.

**Results** 10 patients had 11 pNets with a 14.5 mm size (9 – 24 mm) respectively located in 3 cases to the head, 6 to the body, 2 to the tail. The mean duration of hospital stay was 4 days. There were not early or late complications. All the patients at at least 12 months of follow up had complete disappearance of the lesions with no symptoms recurrence.

**Conclusions** Our series confirm the feasibility of EUS-RFA for the treatment of functions or non functions pNets by using a novel EUS-RFA needle electrode. Excellent beneficial effects were immediate and maintained for months with no adverse events.
**OP164 ENDOSCOPIC ULTRASOUND GUIDED RADIOFREQUENCY ABLATION OF INSULINOMAS IS SAFE AND EFFECTIVE**

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**Methods** We used a Pentax EG-3870UTK linear echoendoscope with a Hitachi Preirus or Noblus Ultrasound console and a 150 cm, 19 gauge needle-electrode (EUSRAA Taewoong medical) with RF delivery in the distal 10 mm, connected to a RF generator (VIVA RF STARmed, Korea) settled to deliver 50W.

**Results** Since March 2017, 8 patients (4 females) were treated; all presented with recurrent hypoglycemic events. Median age was 58 (IQR 42.2–65). Seven patients refused surgery and one was referred after a failed surgical attempt. Lesions were located in the uncinate process, head, body and tail in 3, 2, 2, and 1 patient respectively. The median lesion size was 16 mm (IQR 13.37 – 17.25). The tumor was completely ablated in 7 of the 8 patients during a single session with a median of 6 (IQR 2.75 – 7.25) RF applications (impedance 100 – 130 Ohms) during 5 – 12 seconds. No severe adverse events occurred. After a median follow up of 9.25 (range 1.5 – 21) months, all patients had excellent clinical response, judged by normalization of glycemia, by their ability to return to a normal diet and by the absence of symptoms during overnight fast. None of the patients required additional treatment.

**Conclusions** EUS-guided RFA is feasible, safe and effective for the treatment of insulinomas. It represents a promising, less invasive and more cost-effective alternative to surgery.

**OP165 LUMEN-APPROXITING METAL STENTS VERSUS DOUBLE PIGTAIL PLASTIC STENTS FOR ENDOSCOPIC DRAINAGE OF PERIPANCREATIC FLUID COLLECTIONS: RESULTS FROM A MULTICENTER EUROPEAN STUDY**

**Authors** Sioulas AD1, Petrone MC2, Tadic M3, Karoumpalis I4, Hritz I5, Kypraios D6, Scotiniotis I1, Vezakis A7, Kanavidis P8, Grgurevic I3, Arcidiacono PG2, Papanikolaou IS7,9

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**Methods** Pts with LA PDAC, with local disease progression (PD) after first-line chemotherapy ± radiotherapy (CT ± RT) plus endosonography-guided HybridTherm ablation (EUS-HTP) vs. those receiving only CT ± RT. PDAC treated with chemotherapy ± radiotherapy (CT ± RT) plus endosonography-guided HybridTherm ablation (EUS-HTP) vs. those receiving only CT ± RT. Pts with LA PDAC, with local disease progression (PD) after first-line CT ± RT or unfit for CT (cases), prospectively treated by HTP (2010 – 2016), were retrospectively compared to similar pts not treated by HTP (controls). HTP (ERBE, Germany) is a bipolar probe combining radiofrequency with cryogenic cooling. Parametric/non-parametric tests and log-rank Mantel-Cox tests for group differences were used (p ≤ 0.05 as significant).
Results 19/19 cases/controls were included. Five cases did not receive CT ± RT before EUS-HTP due to concomitant comorbidity. The 2 groups had no difference regarding features at diagnosis (sex, age, lesion site and size, serum CA19.9, CT scheme and duration) and after first-line treatment (lesion size, serum Ca 19–9, progression-free survival time). EUS-HTP was performed ≥ 2 times in 7 cases. OS in cases vs. controls from diagnosis, first-line CT ± RT onset and local PD was similar (p = 0.22; p = 0.82; p = 0.54), as well as in the group of pts treated with further CT ± RT (p = 0.12; p = 0.68; p = 0.94). OS was significantly longer from local PD in cases compared to controls who did not undergo second-line CT ± RT (p = 0.05). OS in cases from EUS-HTP was 6 months, with no difference between pts treated with HT only and those receiving concomitant CT ± RT (p = 0.18), and OS significantly longer in pts treated with ≥ 2 sessions vs. 1 session (p = 0.007).

Conclusions In pts with LA PDAC and local PD after first-line CT ± RT and unfit for a second-line treatment, EUS-HTP may obtain longer OS compared to palliative care. The increase of OS in pts treated by ≥ 2 EUS-HTP may suggest that repeated sessions can achieve a better disease control. A randomized controlled study comparing EUS-HTP plus CT ± RT vs. CT ± RT is ongoing and will better assess EUS-HTP efficacy.

OP167 EUS-GUIDED RADIOFREQUENCY ABLATION PLUS CHEMOTHERAPY VERSUS CHEMOTHERAPY ALONE FOR UNRESECTABLE PANCREATIC CANCER (ERAP): PRELIMINARY RESULTS OF A PROSPECTIVE COMPARATIVE STUDY

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Aims To compare EUS-RFA plus chemotherapy versus chemotherapy (CMT) alone as a primary treatment of unresectable pancreatic cancer (UPC) in a prospective comparative cohort study.

Methods Since July 2017 until August 2018, 20 Patients (mean age 65.2 ± 11.5 years; M: F = 1: 3) at King Chulalongkorn Memorial hospital with UPC were recruited. Patients treated with EUS-RFA plus concurrent CMT (n = 10) versus CMT alone (n = 10) were classified as group A and B, respectively.

Results 29 EUS-RFA procedures were performed with median number of procedure at 3 times (1–4 times), median total ablation time at 400 seconds (37–518 seconds), and complication rate at 10.3% (3/29). Three complications were post-procedure infection treated with intravenous antibiotic (length of stay (LOS) 7 days), bleeding from gastric wall at puncture site requiring a hemo-clip (LOS 7 days), and mild pancreatitis managed with conservative treatment (LOS 2 days). No delay of scheduled chemotherapy. Dosage reduction of morphine equivalent analgesia was significantly better in group A, 15 mg/day (0–60) versus 0 mg/day (-20 to 30) (p = 0.005), respectively, as well as median percentage of dosage reduction (50% (37.5 to 100) versus 0% (-100 to -42.9), p = 0.007), respectively. No enlargement of tumor measured by maximal target lesion after intervention in group A whereas in group B, both mean maximal target lesion diameter (mm) and tumor volume (ml) were statically increased after treatment (before vs. after; 53.0 ± 20.7 mm vs. 59.2 ± 16.6 mm (P = 0.039), respectively, and 76.3 ± 77.0 ml vs. 91.1 ± 83.6 ml (P = 0.014), respectively). No significant difference of 6-month survival rate between both groups.

Conclusions In UPC patients, EUS-RFA plus concurrent CMT could significantly reduce morphine dosage requirement for pain controlled than just given CMT. RFA additionally stabilized the tumor measured by maximal target lesion diameter and tumor volume whereas only CMT failed to halt tumor progression.

OP168 SAFETY AND EFFICACY OF ENDOSCOPIC ULTRASOUND-GUIDED RADIOFREQUENCY ABLATION (EUS-RFA) OF PANCREATIC CYSTIC NEOPLASMS (PCNS) AND PANCREATIC NEUROENDOCRINE TUMORS (PNETS): PRELIMINARY REPORT OF A PROSPECTIVE COHORT

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Aims To assess the safety and efficacy of EUS-guided RFA for the treatment of pancreatic lesions, initial experience of a prospective cohort.

Methods Patients with intraductal papillary mucinous neoplasm (IPMN) or mucinous cysts with worrisome features who were not eligible or refused surgery, as well as patients with grade 1 PNETs less than 2 cm were offered the option of RFA. Ablation was performed using a 19-gauge dedicated needle with a 1 cm long active cooled tip. The volume of PCNs was reduced with a FNA needle before the procedure. The delivery of energy was monitored by continuously monitoring tissue conductivity, and the formation of bubbles on the ultrasound image.

Results Eight patients were treated so far, 2 males and 6 females, average age was 73.5. Five had PCNs with a mean size of 36 mm (12–60) and three were treated for non-secreting PNETs with a mean size of 10 mm (7–16). Average CEA levels in PCNs was 1731, and average chromogranin levels was 234 in PNETs. Three patients reported abdominal pain after the procedure and median serum amylase level was 99 a day after the procedure. Of the 5 patients with PCNs 2 had complete resolution of their cysts at 6 months, 1 needed another RFA intervention, and had complete resolution of his cyst after 9 months, 2 have not reached 6 months follow-up yet. Six months follow-up for PNETs is not yet available.

Conclusions Nine ablations in 8 patients were performed since November 2017. Safety profile was excellent with only mild post-procedural abdominal pain reported, and only one patient with biochemical pancreatitis treated conservatively. Three patients had complete resolution of their cysts so far. EUS guided RFA seems to be a safe method for the treatment of pancreatic lesions, and efficacious for the treatment PCNs.

OP169 DOES CO-AXIAL PLASTIC DOUBLE PIG TAIL STENT PLACEMENT INTO LUMEN-APPOSING METAL STENTS REDUCE RISKS IN EUS-GUIDED DRAINAGE OF PANCREATIC FLUID COLLECTIONS?

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Aims Endoscopic ultrasound (EUS)-guided lumen-apposing metal stents (LAMS) placement may facilitate pancreatic fluid collections (PFC) drainage but data on related-adverse events, particularly bleeding, are limited. Few data suggest that a co-axial plastic double pig tail stent (DPS) might reduce bleeding risk. Primary aim was the feasibility, efficacy and safety of Hot Axios
(Boston Scientific) in a series of patients undergoing PFC EUS-guided drainage. Second aim was to assess the efficacy of DPS placement into the LAMS in order to decrease bleeding.

Methods A retrospective review of Hot Axios placement for PFC drainage in our Institute between Oct 2014 and Sept 2018 was performed. Patients demographics, PFC etiology and characteristics, technical success (TS), clinical success (CS) rate (< 50% PFC + symptoms resolution) and adverse events (> 7 days: immediate/delayed) were registered.

Results 49 pts were identified. TS rate was 98%, CS rate 93.9%. Total adverse events were 16.3%. Bleeding rate was 10.2% (5/49); 3 early (arterial pseudoaneurysms-1 death), 2 delayed (1 hepatic artery branch vessel bleeding, 1 fatal WON cavity hemorrhage). 1 immediate perforation and 2 buried stent syndrome occurred. DPS was positioned in 34.7% (17/49). Bleeding rate in patients with DPS was lower (1/17; 5.9%) compared to patients without (5/32; 15.6%), but this difference was not statistically significant (p = 0.06).

“Other” complications also did not differ with or without DPS (p = 0.23). At logistic regression analysis PFC size, necrosis, access, sex, age and DPS presence were not significantly associated with complications/bleeding risk.

Conclusions Hot Axios PFC drainage is highly feasible and effective, with a relatively safe profile. Bleeding is a serious and potentially fatal complication. Although bleeding rate seems lower after DPS positioning (5.9% vs. 15.6%), if this difference is true, a power calculation with a \(\alpha = 0.10\) and an \(\beta = 0.20\) and an \(\alpha = 0.10\) suggests that a RCT would reach statistical significance with > 200 patients per arm. Further multicenter studies are needed to assess the possible DPS protective role in this setting.

OP170 FEASIBILITY OF A THREE-DIMENSIONAL SPHEROID CULTURE USING ENDOSCOPIC ULTRASOUND-GUIDED TISSUE SAMPLING IN PANCREATIC CANCER

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Aims Preclinical research is recently advanced for in vitro drug testing using cancer cell lines and xenograft tissues. However, obtaining tumor cells from patients with pancreatic cancer are limited. Recently, methods to culture and/ or propagate tumor tissue using specimens obtained from endoscopic ultrasound-guided tissue sampling (EUS-TS) were introduced. The aim of our study was to evaluate the feasibility of a three-dimensional (3D) spheroid culture using EUS-TS in pancreatic cancer.

Methods Patients with locally advanced or distant metastasis were prospectively enrolled. After the acquisition of tissue specimen for pathologic diagnosis by EUS-TS, additional EUS-TS was performed for 3D spheroid culture. The acquired specimens were processed to cultivate in culture media. The phenotype and observed serially by phase contrast microscopy to evaluate the growth of tumor cells. After appropriate growth of tumor cells, the specimen was examined to compare the similarity of histology between human cancer tissue and 3D spheroid tumor.

Results A total of 21 patients with suspected pancreatic mass lesions were enrolled between June 2017 and March 2018. After excluding five patients, EUS-TS specimen for 3D culture was obtained from 16 patients, who were diagnosed as ductal adenocarcinoma. Formation and maintenance of 3D spheroid culture at 2nd week was successfully constructed in 13 cases (81.3%) and successful tumor growth with double size was established in 6 cases (37.5%). Establishment of spheroid culture for over 2nd passages was noted in 3 cases (18.8%). The histology of 3D culture specimen was similar to that of human tumor tissue.

Conclusions This model, which is successfully created by means of EUS-guided core biopsy at the time of initial tumor diagnosis, can be a promising method for construction of in vitro models in the process of drug development and testing for pancreatic cancer.

OP171 EUS-GUIDED DRAINAGE OF PERIPANCREATIC FLUID COLLECTIONS USING FULLY COVERED METAL AND PLASTIC STENTS

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Aims Endoscopic ultrasound (EUS)-guided drainage of peripancreatic fluid collections (PFCs) by using double-pigtail plastic stents (DPPSSs) requires placement of multiple stents for favorable outcomes. EUS-guided drainage PFC with fully covered metal stents (FCSEMSs) has become increasingly used. We aim to evaluate the technical, clinical outcomes, and adverse events of EUS-guided drainage of PFC with DPPSSs and FCSEMSs.

Methods The data of patients who had undergone EUS-guided drainage of PFC with DPPSSs and FCSEMSs between January 2005 and December 2017 were retrospectively analyzed. Data of EUS-guided PFC drainage is obtained from prospective collected EUS database of our institute and reviewed of patients’ clinical parameters based on electrical medical record.

Results 133 patients (79 in FCSEMSs group and 54 in DPPSSs group) were enrolled in this study. There was no difference in technical success rate between FCSEMSs and DPPSSs groups (98.7% vs. 96.1%, P = 0.35). The procedure time was significantly shorter in FCSEMSs group than in DPPSSs group (FCSEMSs vs. DPPSSs; 13.7±6.35 vs. 25.5±11.2, P < 0.05). FCSEMSs showed a significantly higher clinical success rate (96.2% vs. 81.5%, P = 0.005). Procedure-related adverse events occurred significantly less in the FCSEMSs group (3.8% vs. 6.7%, P = 0.01). Late adverse events also occurred significantly less in the FCSEMSs groups (3.8% in FCSEMSs group vs. 14.8% in DPPSSs group, P = 0.02).

Conclusions Both EUS-guided drainage of PFC with DPPSSs and FCSEMSs might be good methods for drainage. However, EUS-guided drainage of PFC with FCSEMSs might be more likely to achieve clinical success and reduce procedure-related and late adverse events.

OP172 EUS-GUIDED, RFA ABLATION OF BENIGN AND MALIGNANT PANCREATIC NEOPLASMS AND EXTRA PANCREATIC METASTASIS IS FEASIBLE AND SAFE

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Aims New therapeutic alternatives are needed for patients with pancreatic tumors not suitable for surgery or in order to avoid surgical morbidity. We present our data on the use of a new, through-the-echoendoscope radiofrequency ablation (RFA) device.

Methods A 150 cm, 19 gauge needle-electrode (EUSRA-Taewoong medical) with RF delivery in the distal 10 mm, connected to a RF generator (VIVA RF STARMed, Korea) settled to deliver 50w was used.

Results Since March 2017, 22 patients (median age 63 (28 – 87) with 36 lesions were treated: seven pancreatic malignant lesions (5 adenocarcinoma), sixteen benign pancreatic lesions (15 neuroendocrine), eight liver metastases, 4 lymph nodes and 1 retroperitoneal metastasis. The pancreatic lesions were located in head, neck, body, tail and uncinate process in 6, 1, 3, 3 and 5 patients. Median size of main lesion was 22 (7 – 55) mm. RFA was performed close to blood vessel or MPD in 7 and 10 times respectively without linked
complication except for thrombosis of a small intrahepatic vein and mild delayed pancreatitis in 1 patient each. Other adverse events included: abdominal pain and intrahepatic bile duct stenosis in 2 patients each. Median ablation number per lesion was 5 (1 – 16). Imaging showed complete or partial ablation in 15 and 7 patients respectively. After a median follow up of 6 (1 – 21) months no additional related complications were detected.

Conclusions EUS-guided RFA of pancreatic tumors and in chosen cases of extrapancreatic metastases is feasible and safe. It represents a promising alternative when surgery is not possible. Larger and longer studies are necessary.

OP173 OPTIMAL TIMING OF RESUMPTION OF WARFARIN AND CLINICAL OUTCOMES AFTER GASTROINTESTINAL BLEEDING IN PATIENTS WITH ATRIAL FIBRILLATION

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Aims According to the 2018 official statement of the Asian Pacific Association of Gastroenterology about management of patients on warfarin, early resumption can be considered, once primary endoscopic hemostasis was done well.

Methods We reviewed charts of 250 consecutive AF patients with objectively verified GI bleeding (GIB) by endoscopy from 2011 to 2017 at tertiary centers. We assessed the risk of thromboembolism, all-cause mortality, recurrent GIB in the 3 groups stratified by interruption periods of warfarin.

Tab. 1 Hazard Ratios stratified by duration of interruption of warfarin for various outcomes

| Duration of Warfarin Interruption | Hazard Ratio | Reference
<table>
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<tr>
<td>≤ 3 days (n = 68)</td>
<td>5.162 (5.41 – 39.07)</td>
<td>reference</td>
</tr>
<tr>
<td>4 – 6 days (n = 127)</td>
<td>5.162 (5.41 – 39.07)</td>
<td>reference</td>
</tr>
<tr>
<td>≥ 7 days (n = 55)</td>
<td>4.411 (4.74 – 66.93)</td>
<td>reference</td>
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</tbody>
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Results 250 patients resumed warfarin after warfarin related GIB with a median of 5 days (IQR 3 – 6). Table demonstrated the incidence rates and HRs of patients stratified by days of interruption of warfarin. The risk for recurrent GIB was not different significantly between the patients with restarting warfarin within 3 days versus after 3 days (HR 2.96, 95% confidence interval 1.12 – 7.10; P = 0.03), whereas the risk of recurrent GIB event was reduced insignificantly by 77% (HR 0.62; 95% CI, 0.30 – 0.70; P = 0.001). Restarting warfarin after 7 days increased the risk of thromboembolism by more than a factor of 3.35 (HR 3.35; 95% CI, 0.95 – 11.88; P = 0.06), whereas the risk of recurrent GIB event was reduced insignificantly by 64% (HR 0.36; 95% CI, 0.09 – 1.49; P = 0.16).

Conclusions Late resumption of warfarin should be reconsidered in AF patients with GIB and high thromboembolic risk.

OP174 THE NEW INTERNATIONAL BLEEDING RISK SCORE SYSTEM IS A USEFUL PREDICTOR OF MORTALITY IN PATIENTS WITH NON-VARICEAL UPPER GASTROINTESTINAL BLEEDING

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Aims To validate the use of the new international bleeding risk score for prediction of mortality in patients with non-variceal upper gastrointestinal bleeding and to assess whether a high new score can predict re-bleeding or an extended hospital stay.

Methods This was a 5-year, single-center, retrospective study performed in Korea. Non-variceal upper gastrointestinal bleeding was assessed using the new international bleeding risk score, Rockall, AIMS65, CBS, and PNED scores. Scores for mortality were assessed by calculating the area under the receiver-operating characteristic curves (AUROC). Data regarding patients’ characteristics, endoscopic evidence of bleeding, re-bleeding, duration of hospital stay, and mortality at day 30 were collected. The predictive value of factors for mortality at day 30 was identified using multivariate logistic regression analysis of variables identified by univariate logistic regression. A Chi-square test was used to further analyze the relationship between the high and the low new score group with reference to re-bleeding and duration of hospital stay.

Results Of 1000 hospital patients who presented with upper gastrointestinal bleeding, 905 patients with non-variceal bleeding were analyzed and 95 patients with variceal bleeding were excluded. The new score is a weighted risk score based on the patients’ ages, comorbidities and results of blood tests. The new score showed a higher discriminative ability compared to the other scores by AUROC (0.958, p < 0.000), when predicting mortality. A comparison of the high-risk new score and the low risk groups revealed significant differences in the duration of hospitalization (p = 0.000) and re-bleeding (p = 0.000).

Conclusions The new international bleeding score appears to be a better predictor of the 30-day mortality rate than the scores previously mentioned. Screening for high-risk groups using the new score can predict mortality, long-term hospital admission and re-bleeding. Use of this scoring system can improve outcomes through appropriate management and intervention.

OP175 IMPACT OF THE IMPLEMENTATION OF UPPER GASTROINTESTINAL BLEEDING-CODE IN PATIENTS AT EMERGENCY ROOM WITH UPPER GASTROINTESTINAL NON-VARICEAL BLEEDING

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Aims Upper gastrointestinal bleeding (UGIB) is a common condition in the emergency room (ER), with high morbimortality. Nevertheless, there is no evidence about the impact of the implementation of an urgent intervention protocol (UGIB-CODE) for its management.

Our aims are: 1) Evaluate the impact of the UGIB-CODE implementation in patients with non-variceal upper bleeding (NV-UGIB) at the ER. 2) Identify the variables that are independently associated with the final success in patients with NV-UGIB. 3) Costs analysis.
Methods Observational cohort study including a retrospective cohort (RC) and a prospective cohort (PC), before and after the implementation of UGIB-CODE. We recruited adult patients attended at the ER with NV-UGIB during 2014 (RC) and 2016 (PC). Univariate and multivariate analysis were done to determine the impact of UGIB-CODE implementation and the variables associated with the final success (no mortality, no re-bleeding or re-bleeding controlled by endoscopy).

Results We included 66 patients in the RC (age 68 ± 1.87; 30.3% women) and 89 patients in the PC (age 69 ± 1.65; 42.7% women). The multivariate analysis showed a reduction of red blood cell concentrate (RBCC) administration (OR:1.840;CI95% 1.066 – 3.175;p = 0.028) and a decrease in hospital admission (OR:4.729;CI95% 1.306 – 17.114;p = 0.018). Regarding the final success no differences were found between the two cohorts (93.9% vs. 87.6%; p = 0.190). Blatchford Score < 12 (OR:4.460;CI 95% 1.366 – 14.568;p = 0.013) and non-emergency endoscopy (> 6 hours) (OR:5.449;CI95% 1.133 – 26.209; p = 0.034) were independently associated with the final success. The implementation of UGIB-CODE saved 24,780 € per 100 patients related to RBCC administration and hospital admission.

Conclusions The implementation of the UGIB-CODE is a cost-effective strategy, decreasing RBCC administration and hospital admission. We reaffirm that Blatchford Score is a useful tool for predicting the evolution of NV-UGIB. The finding that an emergency endoscopy was associated with a worse outcome should be confirmed in a prospective study that particularly assess this issue.

OP177 HEMOSPRAY FOR GASTROINTESTINAL BLEEDING: EFFECTIVENESS, PREDICTORS OF FAILURE AND SURVIVAL IN A NATIONWIDE STUDY


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Aims This study aimed to assess the effectiveness, safety and predictors of Hemospray failure in a large real-life cohort.

Methods This was a retrospective study conducted at 21 Spanish academic and community centers. All patients receiving Hemospray until September 2018 were included. The primary outcome was treatment failure, defined as failed intraprocedural hemostasis or rebleeding during the first 30 days. Secondary outcomes included safety and survival. Cumulative incidence and predictors of failure were assessed via competing-risks models.

Results A total of 261 patients were included, 219 (83.9%) of whom presented with upper gastrointestinal bleeding (CIB). The most common etiologies were peptic ulcer (73, 28%), malignancy (48, 18.4%) and therapeutic endoscopy-related CIB (46, 17.6%). Hemospray was used as salvage therapy in 191 (73.2%) patients and as monotherapy in 96 (36.8%). The rate of intraprocedural hemostasis was 94.1% (95% confidence interval [CI]: 90.5 – 96.4). The risk of Hemospray failure at 3, 7 and 30 days were 21.1% (95% CI: 16.4 – 26.2), 24.6% (95% CI: 19.5 – 29.9), and 27.4% (95% CI: 22.1 – 32.9), respectively. On multivariable analysis, spurring bleeding (P < 0.004), use of vasoactive drugs (P = 0.02), and hypotension (P = 0.008) were independent predictors of failure. Overall 30-day survival was 81.9% (95% CI: 76.5 – 86.1%) and intraprocedural hemostasis was associated with better prognosis (adjusted Hazard Rate: 0.27; P = 0.004). Two potentially-related severe adverse event were noted.

Conclusions Hemospray was effective for achieving intraprocedural hemostasis regardless of the etiology, location, and its use as rescue therapy. However, 30-day failure rate was 27.4%. Intraprocedural hemostasis provided a significant benefit on 30-day survival.

OP176 BURNING DOWN THE HOUSE: DOES ENDOSCOPIC BAND LIGATION FOR THE TREATMENT OF GAVE RESULT IN BETTER OUTCOMES COMPARED TO ARGON PHOTO COAGULATION?

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Aims Gastric antral vascular ectasia (GAVE) is a rare vascular malformation located primarily in the antrum. While Argon Photo Coagulation (APC) is the current standard of care, Endoscopic Band Ligation (EBL) is increasingly used. There is currently no consensus regarding the optimal treatment modality, as current available evidence is limited to small case series. We aimed to compare outcomes following each treatment modality.

Methods A retrospective cohort study was performed of patients with an endoscopic diagnosis of GAVE recorded in our tertiary referral University hospital (04/2013-present). All patients receiving endoscopic therapy for GAVE were included in the study.

Results In total, 117 diagnoses of GAVE were made during the study period. Of these, 68 patients (58%) required treatment, with a female preponderance (n = 39, 57%) and a mean age of 74.1 (range 45 – 95). A total of 220 procedures were performed, with an average of 3.2 treatment sessions per patient (range 1 – 20). Iron deficiency anaemia (n = 40, 59%) was the most common indication with melena (19%), previously untreated GAVE follow up (15%), varices surveillance (4%) and haematemesis (3%) also reported. APC was the most common procedure performed (n = 167, 74%) compared with EBL (n = 59, 26%). Patients treated with EBL as the index treatment required a mean of 2.1 subsequent treatments, compared to a mean of 3.5 treatment sessions in the APC group. The pooled mean rise in haemoglobin one month post procedure was higher in the EBL group (1.1 g/dL vs. 0.6 g/dL).

Conclusions We report our experience in the largest cohort to date of patients treated with EBL for GAVE. Patients treated with EBL at the index treatment required fewer subsequent treatment sessions and had a greater mean rise in haemoglobin post treatment, suggesting EBL as the initial treatment may lead to better outcomes.
OP178 CLINICAL EFFECTIVENESS OF HEMOSPRAY IN UPPER GASTROINTESTINAL BLEEDING: EXPERIENCE FROM “REAL WORLD” CLINICAL PRACTICE IN A TERTIARY REFERRAL CENTRE

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Aims Hemospray is an useful endoscopic haemostatic powder for the management of gastrointestinal bleeding. Its role within the therapeutic algorithm of upper gastrointestinal bleeding (UGIB) is not well defined. Its usage is generally aimed at immediate but temporary control of UGIB to allow time for definitive therapy, spontaneous control or for palliation. We aimed to describe:1) indications and effectiveness of endoscopic haemostasis in UGIB. 2) to describe adverse events and re-bleeding rates.

Methods We collected data of all patients treated with Hemospray at our Institution for the management of UGIB between August 2013 to October 2018. Technical success was defined as the correct assembly of device and application. Immediate success was defined as bleeding cessation within 5 minutes after application. Combination therapy was its use with standard hemostatic methods and rescue therapy when standard methods have failed.

Results A total of 85 patients were included for analysis (54.7% male), mean age 68.3 ± 16.73 years. Hemospray was used for control of bleeding duodenal ulcers in 37.7% (n = 32), bleeding malignancy in 16.5% (n = 14) and post procedure bleeding in 14.1% (n = 12); 8 post-EMR; 2 post-biliary sphincterotomy; 1 post-EASD; 1 post-ampullotomy. Overall immediate haemostasis success was 89.6%. Haemospray was used as a rescue therapy in 38.8% (n = 33), single modality in 37.6% (n = 32) and combination therapy in 23.5% (n = 20) achieving immediate haemostasis in 87.8%; 85.7%; 85% respectively with no statistical differences between the three groups (p = 0.57). Overall technical success was 97.7%, in 2 cases blockage of 10F catheter occurred. No patient related side effects were seen. Global re-bleeding rate was 12.8%, (3.5% <24h; 4.7% 24–72h; 4.8%>72h), with no statistical differences related to treatment modalities (p = 0.86).

Conclusions In this ‘real world’ clinical practice, Hemospray is an effective and safe treatment for upper bleeding regardless its use as a single, combination or rescue therapy.

OP179 Efficacy of Endoscopic Treatments for Acute Esophageal Variceal Bleeding in Cirrhotics: Systematic Review and Meta-Analysis

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Aims Most guidelines recommend and consider the use of ligation and vasoactive drugs as the first line therapy and grade A evidence for acute variceal bleeding (AVB), although Western studies about this issue are lacking. We performed a systematic review and meta-analysis of randomized controlled trials (RCT) to evaluate the efficacy of endoscopic treatments for AVB.

Methods Systematic review and meta-analysis of RCT evaluating endoscopic treatments for AVB in adult patients with cirrhosis. Trials that included patients with hepatocellular carcinoma or other malignancies, use of portocaval shunts or esophageal resection, use of balloon tamponade as first bleeding control measure, or that received placebo or elective treatment in one study arm were excluded.

Results 8382 publications were searched, and 36 RCT with 3593 patients included. Ligation was associated with a significant improvement in bleeding control [relative risk (RR) 1.08; 95% confidence interval (CI) 1.02 – 1.15] when compared to sclerotherapy. Sclerotherapy combined with vasoactive drugs showed higher efficacy in active bleeding control compared to sclerotherapy alone [RR 1.17; 95% CI 1.10 – 1.25]. The combination of ligation and vasoactive drugs was not superior to ligation alone in terms of overall rebleeding [RR 2.21; 95% CI 0.55 – 8.92] and in-hospital mortality [RR 1.97; 95% CI 0.78 – 4.97]. Other treatments did not generate meta-analysis.

Conclusions This study showed that ligation is superior to sclerotherapy, although with moderate heterogeneity. The combination of sclerotherapy and vasoactive drugs was more effective than sclerotherapy alone. Although current guidelines recommend the combined use of ligation with vasoactive drugs in the treatment of esophageal variceal bleeding, this study failed to demonstrate the superiority of this combined treatment.

OP180 GLASGOW-BLACHFORD SCORE ACCURATELY PREDICTS THE NEED OF CLINICAL INTERVENTION IN ACUTE LOWER GASTROINTESTINAL BLEEDING. A DIAGNOSTIC ACCURACY EVALUATION STUDY

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Aims The aim of this study was to compare the accuracy of Glasgow-Blachford score (GBS) with three risk scores (State, Velayas and Newman) for predicting the need of clinical intervention (endoscopic therapy, vascular embolization and surgery or transfusion) in patients admitted for acute LGB.

Methods Retrospective study from January 2013 to December 2015 in a university tertiary care hospital. Patients with acute LGB were identified using the International Classification of Diseases (9th Revision) and Clinical Modification codes for admission diagnosis. Scores were retrospectively calculated according to the clinical reports data. Area under the receiver operating characteristic (AUROC) curve, sensitivity, specificity and predictive values were calculated. Also the best cut-off of each score was chosen from using the AUROC curves value.

Results A total of 298 consecutive patients were identified. Median age was 76.1 years (range 25.4 – 96.5), 201 (67.4%) of patients were older than 70 years, and 51% were men. Five patients (1.7%) died, 18 (6%) developed recurrent bleeding, 89 (29.9%) needed transfusion, 30 (12.1%) received endoscopic therapy, and 3 (1%) underwent transcatherter arterial embolization. GBS AUROC was 0.82 (95% CI:0.76 – 0.87) for the need clinical intervention. GBS was significantly more accurate than Strate score and similar for Newman y Velayas for predicting the need of clinical intervention. Accuracy values for each score are shown in table 1.

Tab. 1 CLINICAL INTERVENTION. Sensitivity, specificity and predictive values. *Best cut-off.
OP181 SAFETY AND EFFICACY OF THE THULIUM AND ERBIUM LASER SYSTEM ON BLEEDING VASCULAR LESIONS OF THE GI TRACT: A REAL-LIFE MULTI-CENTRE STUDY

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Aims Recent pilot studies assessed the feasibility of the Thulium and Erbium laser system (TELS) for endoscopic haemostasis, ablation and resection. Herein, we investigated for the first time ever, the safety and efficacy of endoscopic treatment with TELS in patients with gastrointestinal bleeding due to vascular lesions.

Methods Consecutive patients treated with TELS for chronic gastrointestinal bleeding with moderate/severe anaemia due to vascular lesions were enrolled in two Italian centres between March 2016 and October 2018. Technical success and safety as established by the ASGE Lexicon, were defined as primary endpoints.

As secondary endpoints, we assessed the biological success comparing the lowest haemoglobin values ± 1 month prior to and after treatment, along with the need of packed red blood cells (PRB) transfusions ± 6 month prior to and after treatment. For gastric antral vascular ectasia (GAVE), a new scoring system was proposed to evaluate pre/post-treatment endoscopic severity by assessing both mucosal involvement (< 30%+1, 30 – 50%+2, > 50%+3), and presence of bleeding (traces of blood +3, active +5). For each procedure, image/video documentations and TELS technical parameters (i.e., lasing time, power output, energy employed) were digitally recorded. Student paired t-test was performed.

Results Twenty-six patients (20 men; range 48 – 91 years) underwent 32 endoscopic TELS sessions for the treatment of angioectasias (14/26), GAVE (9/26), and RP (3/26). All procedures resulted in a complication-free technical success, thereby reaching the primary study endpoints. Haemoglobin values showed a significant rise along with a decreased need of PRB transfusions ± 6 month prior to and after treatment, as primary endpoints.

Conclusions This multicentre study conducted in real-life setting suggests that TELS is a safe and effective tool for the endoscopic treatment of patients with gastrointestinal bleeding due to vascular lesions.

OP182 A MULTICENTRE VALIDATION STUDY OF A NOVEL LOWER GASTROINTESTINAL BLEEDING (LGB) SCORE-THE BIRMINGHAM (BHAMA) SCORE

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Aims LGB is common and its incidence is increasing. There have been attempts to create new risk stratification scores to predict major clinical adverse events in LGB, however none of are widely used. We aimed to identify risk factors associated with adverse outcomes from LGB and develop and validate a novel scoring system.

Methods We retrospectively reviewed patients admitted with LGB from three centres 2010 – 2017. Adverse outcomes recorded include blood transfusion, endoscopic intervention, CT angiography, surgery, re-bleeding and mortality. Regressional analysis within a machine learning technique identified risk factors for adverse outcomes. Area Under the Receiver Operating Curve (AUROC) were calculated and the BHAM Score was developed.

Results A total of 473 patients were included for the original dataset (Table). The BHAM score consists of: Blood pressure < 90 mm Hg (1 point), Haemoglobin (< 72 g/l 14 points, 73 – 95 g/l 10 points, 96 – 117 g/l 7 points, 118 – 139 g/l 4 points), Altered mental state (2 points) and Male (1 point). A total BHAM score gives probabilities of adverse outcomes: ≥ 12 points ≥ 90%, 11 points 70%, 9 – 10 points 45%, 8 points 30%, 6 – 7 points 15%, 5 points 6% and ≤ 4 points < 3%. 181 patients admitted with LGB were included in validation (Table). BHAM score gives AUROC of 0.80 (95 CI 0.72 – 0.87), whilst the BGS gives AUROC of 0.76 (95 CI 0.69 – 0.84) (Figure).

Conclusions This validation study has shown that the BHAM score performs well at predicting adverse outcomes of LGB. It outperforms the BGS and has the advantage of being more simple. A prospective multi-centre study is required to validate the BHAM score further before application in clinical practice.

Friday, April 5, 2019 Video lower GI 1 14:30 – 16:30

OP183V GEL IMMERSION ENDOSCOPY: INNOVATION IN SECURING THE VISUAL FIELD. CLINICAL EXPERIENCE OF 265 CONSECUTIVE CASES

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Aims During endoscopy, especially in patients with gastrointestinal bleeding, it is often difficult to secure the visual field using water, because the injected water is rapidly mixed with fresh blood or stool. Clear gel with an appropriate viscosity to prevent rapid mixing is injected through the accessory channel, instead of water. In the space occupied by the clear gel, it is easy to secure the visual field. We reported this method as “gel immersion endoscopy”. The safety and efficacy of this method were evaluated.

Methods From June 2012 until December 2017, 265 consecutive procedures were identified by searching the medical records. These records were retrospectively evaluated. After independent evaluation by 3 gastroenterologists, success in securing the visual field and occurrence of adverse events were judged.

Results Of 265 total procedures, the visual field was secured/not secured/undecided in 233/21/11, which included 11/2/0 of 13 in the esophagus, 35/5/4 of 44 in the stomach, 37/5/1 in the duodenum, 23/1/3 procedures in the jejunum, 10/0/0 procedures in the ileum, 106/7/2 procedures in the large intestine, 10/1/1 procedures in an afferent limb, and 1/0/0 procedures in the bile duct. Gel immersion endoscopy allowed the identification of bleeding lesions covered by clots, food debris and stool and achieving hemostasis. Of 265 procedures, adverse events occurred in four, including two with post-procedure abdominal pain, one with weight gain in a patient with chronic
A case report of a 73-year-old man with a history of anterior rectal resection for a colorectal anastomotic fistula. The patient was referred to our unit because of a suspicion of a colorectal fistula, developed 30 days after the surgical intervention. A lower GI endoscopy showed, at 5 cm from the anal verge, the presence of a colorectal anastomosis with a 9 mm diameter fistula. We decided to close the defect with an 11/6 t OTSC clip (Ovesco – Tübingen, Germany). With a gastroscope, suction technique and the aid of the anchor device, we placed an OTSC clip over the fistula but, after the clip release, we observed a completely colorectal lumen closure, also justified from the absence of air coming from the bowel.

Results Because of the loss of memory of the nitinol under 4 °C, we decided to irrigate the colonic lumen with cold water (<4 °C) for 10 min, until the white change of the color of the mucosa. With tooth-rat forceps we removed the OTSC clip, without any complication. After the clip removal, in the same session, we placed another 11/6 t OTSC clip, with the aid of the anchor device, sealing the fistula.

Conclusion Endoscopic OTSC closure of colorectal post-surgical leaks and fistulas is a safe technique, with a high success rate in both acute and chronic cases but completely bowel closure is a rare adverse event that can be accidentally happen, especially in non-expert hands. The nitinol loss of memory at <4 °C water allow OTSC deformation, helping us its removal.

OP186V POLYP FINGERPRINT: AUTOMATIC IDENTIFICATION OF UNIQUE FEATURES TO UNIVOCALLY IDENTIFY COLORECTAL POLYPS

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Aims Following human recognition by fingerprints, we propose to study the potential of computer systems in the definition and recognition of unique characteristics for each colorectal polyp. Polyp fingerprint can be used in two types of applications: assistance in polyp detection to ensure that a polyp observed during insertion is recognized during withdrawal and assistance in the in-vivo prediction of the histology of those polyps sharing a similar appearance with one with known histology.

Methods Our system uses a color descriptor to characterize the image and applies Bag of Words technique to build a vocabulary univocally describing the appearance with one with known histology.

Results The distribution of polyps according to Paris classification was: 40 of type 0-I (118 images), 31 of type 0-IIa (11 images) and 5 of type 0-IIp (96 images). Mean polyp size was of 11.60 mm. 61 out of 76 polyps were adenomas (80.26%, 173 images). In our experiment, 207 images (92%) matched another image of the same polyp. For those polyps with only two images, the system provided an accurate match in 31/33 cases (93.94%). In the subset of images where the polyp was represented with more than two images, the system provided an accurate match in 42/43 cases (97.67%). Furthermore, in this subset the system provided correct matches for all images of the same polyp in 31/43 cases (72.09%).

Conclusions A computational system can accurately recognize as a unique lesion a polyp observed in different views by describing the endoluminal scene using a color descriptor.
Colorectal endoscopic submucosal dissection (ESD) is a well-established minimally invasive resection technique. When the so-called muscle-retracting (MR) sign is encountered during ESD, complete resection may not be feasible. The pocket creation method (PCM) allows easier recognition of the submucosal space in the context of fibrosis and MR sign. To date, both magnifying endoscopy and endoscopic ultrasound may not be able to show invasive cancer, especially for lateral spreading tumor (LST) with a large nodule. Therefore it may be difficult to predict if any MR sign is caused by fibrosis or deep submucosal invasion.

Our aim was to highlight the characteristics of deep submucosal invasion during PCM-ESD. A 74-year-old man had a colonoscopy due to haematochezia and a large granular, mixed-nodular LST was identified in the proximal rectum. Endoscopic assessment of the lesion with near focus, indigo carmine and narrow band imaging (NBI) did not reveal any sign of Kudo pit pattern Vn, JNET type 3 surface findings, or any other definitive sign of intramucosal or deeply invasive cancer. For this reason we proceeded with saline-immersion therapeutic endoscopy (SITE) facilitated PCM-ESD.

After dissection of the distal part of the lesion, the MR sign was encountered within the submucosal pocket, underneath a large nodule. Despite continuing dissecting this severely fibrotic submucosal area using the PCM technique, increasing severity of submucosal fibrosis and repeated bleeding from convergent, irregular submucosal neovascularisation around the MR site (with an appearance akin to ‘solar flares’), impeded further resection. ESD was therefore discontinued due to high suspicion for submucosal invasion. Histopathological analysis of biopsies taken from the MR area confirmed deep submucosal invasion.

Our findings reinforce the suspicion that a flare of neovascularisation convergent onto the MR area is suggestive of deep submucosal invasion. In this scenario ESD could be discontinued and surgical options should be considered.

**OP188V MALIGNANT TRANSFORMATION OF SESSILE SERRATED ADENOMAS – NBI DIAGNOSIS AND ESD OF TWO CASES**

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**DOI** 10.1055/s-0039-1681364

Sessile serrated adenomas (SSA) are potentially responsible for the apparition of interval colorectal cancer (CRC) [1]. Their malignant transformation does not follow the classical molecular pattern [2]. SSA are more difficult to detect in endoscopy. The endoscopic diagnosis is based on white light imaging (WLI) and narrow band imaging (NBI) with magnification, using the WASP criteria [3].

We report here 2 atypical nongranular LSTs that had both sessile serrated criteria (WASP) but also a classical adenoma/adenocarcinoma component. ESD was performed using the clip-traction strategy [4].

First patient had a 3 cm non-granular lateral spreading tumour (LST) in the left colon, Paris IIb, with Kudo VI pit pattern but also crypts with dark spots (Figure 1,2). En bloc ESD was performed. We closed the large mucosal defect with clamps and a rubber band [5]. Histology revealed complete resection of a degenerated SSA with in-situ carcinoma.

The second patient had a cm non-granular LST was found on the sigmoid, Paris 0-Ia + 0-IIc, Kudo Vn with nearly avascular capillaries (Sano IIIB) (Figure 3). ESD was performed because of comorbidities and high surgical risk. Histology revealed complete resection of a SSA with a focal moderately differentiated adenocarcinoma that was deeply invading (2200 μm) the submucosa, tumoral budding but no vascular or lymphatic invasion. Complementary surgical intervention was recommended.

Both this lesions had 2 distinct components: a classical adenomatous and also a sessile serrated one with dark spots inside crypts, a clouded surface and irregular shape. There were no complications after ESD.

Malignant transformation has rarely been described within a SSA but appears as a conventional adenomatous malignancy. In those transformed lesions, two components are clearly identified. Endoscopic evaluation using NBI with dual focus magnification is very important, in order to decide for the best resection strategy based on the worst component after histology prediction.

**OP189V ENDOSCOPIC LINE-ASSISTED COMPLETE CLOSURE OF LARGE COLONIC PERFORATION DURING ENDOSCOPIC SUBMUCOSAL DISSECTION**

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Complete closure of extra-large mucosal defects after endoscopic submucosal dissection (ESD) of wide colorectal lesions is a challenging procedure due to limited width-opening of the regular through-the-scope clips (TTSC). We report a case of successful management of a large perforation using the line-assisted complete closure (LACC) technique.

LACC technique, described by Kato et al, is performed introducing a TTSC with a long nylon line tied to one of its anchor blades and fixing it to about 5 mm from the distal edge of the perforation area. Subsequently another TTSC is inserted through the working channel and it grasps the line inside the lumen, close to the first clip, to be anchored to the proximal side of the perforation. Both sides of the wound are gathered by gently pulling the line from outside the patient. This allows complementary TTSC for the complete closure of the defect. The line is finally cut using scissor forceps.

A 78-year-old patient was found to have a 70 × 40 mm LST-NG (0-IIa + IIb) in transverse colon, pit pattern Kudo type IV. Along the final phase of ESD a spontaneous 5 – 6 cm disruption of the muscular layer within the mucosal defect was noted. Due to its large size, a LACC technique was executed to facilitate the approaching and further clipping of the mucosal edges with additional 31 regular TTSC. Abdominal-CT with rectal contrast administration after the procedure showed no sign of leaking at the perforation site. The patient remained asymptomatic and was discharged uneventfully six days later.

Compared with other endoscopic devices such as over-the-scope clip (OTSC), LACC only requires the use of regular TTSC, a nylon line and endoscopic scissors. It can be an effective alternative in the management of large iatrogenic perforations, even in proximal colon, avoiding surgical treatment.

**OP190V SUCCESSFUL REPAIR OF WIDE TRAUMATIC RECTAL PERFORATION USING OVER-THE-SCOPE CLIP (OTSC)**

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**DOI** 10.1055/s-0039-1681366

The over-the-scope clip (OTSC, Ovesco Endoscopy GmbH, Tübingen, Germany), designed for tissue approximation, is already recommended as first-line endoscopic treatment for endoscopic acute iatrogenic perforation [1]. To the best of our knowledge, no data regarding gastrointestinal traumatic perforation are available.

A 16-year-old girl referred to emergency room for copious rectal bleeding and secondary syncope, due to violent trauma.
Computed tomography (CT) scan and subsequent colonoscopy revealed a voluminous pelvic hematoma and a 35 – 40 mm irregular full-thickness defect, located in the posterior rectal wall, about 30 mm from the dentate line. Because of the lesion’s features and the acute setting, an OTSC was placed (12/6 mm, traumatic type) using the OTSC twin grasper (Ovesco Endoscopy GmbH, Tübingen, Germany). This auxiliary device has two jaws which can be opened separately, allowing better gaping edges approximation. The entire procedure was performed under deep sedation, using CO2 insufflation.

The endoscopic treatment was effective, as confirmed after contrast medium injection and CT scan. Few days later, second endoscopic look confirmed complete sealing of the defect and the patient was discharged home [video].

In conclusion, OTSC with twin grasper can successfully treat wide traumatic rectal perforation, avoiding major surgery with definitive or temporary stoma, especially in a young woman.

**Reference**
1. Paspatis G.A., Dumonceau J.M., Barthet M et al. Diagnosis and management especially in a young woman.

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**OP191V**  ENDOSCOPIC MANAGEMENT OF AN INTRAPARIEITAL OESOPHAGEAL HEMATOMA, SECONDARY COMPLICATION OF POEM IN A TYPE 1 ACHALASIA, PREVIOUSLY TREATED BY HELLER MYOTOMY

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Achalasia is an idiopathic condition characterized by abnormally elevated pressure of the lower oesophageal sphincter (LES) and abnormal oesophageal peristalsis. Before per oral endoscopic myotomy (POEM) the treatment was either by drugs (nitrates, calcium blockers), endoscopic pneumatic dilatation or by surgical myotomy.

Endoscopic myotomy is more and more popular in expert endoscopic centers because of high efficacy (90%) and low complication rate (5%). We report the case of a 56 years old patient with a type 1 Achalasia that was previously treated by Heller myotomy. He remained asymptomatic for 4 years after the procedure, but later restarted having dysphagia, odynophagia and alimentary regurgitations.

After multidisciplinary concertation, it was decided to propose long posterior POEM.

We performed a long submucosal tunnel followed by a selective circular myotomy of 13 cm with a Hookknife 620LR (Olympus Tokyo, Japon). We had no particular hemorrhagic complications during endoscopic procedure. Three hours after the procedure, the patient had post procedural severe retrosternal pain and nausea. The CT scan confirmed a 60 mm esophageal hematoma with possible active intraparialble bleeding.

We decided for immediate endoscopic intervention because of the high risk of mediastinitis and the active bleeding.

We removed the clips that closed the mucosal defect and after access in the submucosal tunnel we removed the blood clots with polypectomy snare. There was active bleeding from a perforating intramuscular vessel that was treated with coagulation, using a hot forceps (Cook Medical, Bloomington, USA). We closed the tunnel incision with 6 clips Resolution 360 (Boston Scientific, USA). The patient felt immediately better and was finally discharged 5 days later. No other complication was reported after 4 months of follow up.

POEM is possible even after previous surgical myotomy. We report the successful endoscopic treatment of a large intraparial hematoma and active bleeding.

**OP192V**  ENDOSCOPIC TREATMENT OF INTRAMURAL FISTULA E MUCOSAL TEAR OCCURRED AFTER PERORAL ENDOSCOPIC MYOTOMY (POEM)

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**DOI**  10.1055/s-0039-1681368

**Aims**  POEM is a safe procedure for the treatment of esophageal motility disorders. A correct closure of the esophageal mucosal incision (mucosotomy) and the integrity of the mucosal flap are crucial for the safety of the procedure, in order to prevent esophageal leakages and infections.

**Methods**  We present the case of a POEM complicated by the dehiscence of the mucosotomy, multiple tears of the mucosal flap and the creation of intramural esophageal fistula.

A 72-year-old woman presented with severe dysphagia, regurgitation, pain and weight loss. A type III achalasia was diagnosed and a POEM was performed. Perioperative course was uncomplicated.

Two weeks later patient presented with chest pain and recurrent dysphagia for solids.

An EGD showed a dehiscence of the mucosotomy with multiple openings on the mucosal flap, putting in communication the real esophageal lumen with the submucosal tunnel created during the POEM. No full thickness perforations were seen.

CT-scan did not reveal any leakage or periesophageal collection.

In order to avoid the entrapment of food into this false lumen, we decided to entirely cut the mucosal flap.

A distal and a triangle-tip knife with Endocut mode was used for the mucosal incision.

Results  The procedure was relatively easy, quick, and uncomplicated.

CT-scan and Gastrografin swallow showed no leakages or complications, and the patient started oral feeding since the second post-operative day.

One year later the patient is in relatively good conditions, without dysphagia.

**Conclusions**  Dehiscence of mucosotomy rarely complicates POEM, but can be theoretically responsible of mediastinitis and infections.

The incision of the mucosal flap above the esophageal false lumen, a kind of fistulotomy, guaranteed a quick and easy solution for an unusual clinical problem.

**OP193V**  YEOYUNAL PERFORATION WITH ACHALASIA BALLON IN A PATIENT WITH RING SLIPPAGE AND GASTRIC POUCH OUTLET STENOSIS AFTER BANDED GASTRIC BYPASS

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**DOI**  10.1055/s-0039-1681369

**Aims**  Banded gastric bypass (BGBP) has resulted in superior long-term weight loss compared with non-banded gastric bypass. Nevertheless occasional slastic ring slippage could result in gastric pouch outlet stenosis (CPOS). Conventional management has been ring removal through abdominal laparoscopic...
surgery. However, peritoneal adherences could make surgery challenging and increase the risk of complications.

Endoscopic dilatation of the slipped ring using achalasia balloon with high success and low morbidity has been described. We present a clinical case of a 31-year-old female with previous BGBP in 2012 who experienced vomiting, abdominal pain and weight loss in 2016.

Methods Upper gastrointestinal endoscopy (UGE) showed retained food and GPOs. A 35-mm achalasia balloon was used to treat slistic ring slippage. Immediately after balloon deflation, active bleeding of the anastomosis occurred. It was controlled by epinephrine injection and electrocoagulation forcepts. At the jejunal side of the anastomosis a wide perforation was seen. A 21-cm-length and 30 mm diameter fully covered self-expanding esophageal metallic stent (SEMS) was immediately placed. CT scan showed septated neutropoeureum and no evidence of liquid collections. The patient referred mild abdominal pain after the procedure. Oral feeding and hospital discharge was decided at 36 hours.

Results Clinical evolution was satisfactory. Three weeks later SEMS was removed over a plastic overtube retrieval system to avoid laceration of the previously injured area. Perforation was completely sealed. Contrast swallow confirmed absence of leakage. Furthermore slistic ring migrated to the reservoir lumen as result of SEMS local effect. Forceps removal of the ring was safely accomplished.

Conclusions The use of achalasia balloon to treat slistic ring slippage in gastric banded bypass could lead to yeyunal perforation. Immediate placement of the stent is an efficient option to manage the perforation and the ring slippage.

OP194V PERORAL ENDOSCOPIC SEPTOTOMY (POES): A NOVEL ENDOSCOPIC APPROACH TO ZENKER’S DIVERTICULUM

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DOI 10.1055/s-0039-1681370

Aims Zenker’s diverticulum (ZD) arises as a result of an increased intraluminal pressure in the esophagus caused by the impaired relaxation of the cricopharyngeal muscle. Treatments aim to dissect the muscle in order to remove the underlying dysfunctional condition. Patients with short septum (≤2 cm) diverticulum represent a difficult to be treated subgroup of patients because of the anatomical space limitations leading to reduced operation space either for rigid and flexible endoscopic treatments. The aim of this video is to report an alternative procedure, called Peroral endoscopic septotomy (POES) proposed to treat short-septum symptomatic ZD.

Methods The POES technique consisted of a 15 mm mucosotomy performed at the top of the diverticular septum, after submucosal injection.

Results A 68 year-old man was referred to our center for a 20 mm ZD. The procedure was carried out using a 9.3 mm diameter gastroscopy with cap (Video 1). After submucosal injection with saline and methylene blue, a 15 mm mucosal incision was performed at the top of the diverticular septum. The underlying submucosa was dissected to create an endoscopic window to visualize the muscular septum. The muscular septum was dissected along its entire length through the mucosal window, sparing the mucosa of both the luminal and the diverticular side. Finally, the mucosal incision was closed with clips. No intra nor post-procedural adverse events occurred. After the procedure, an esophagogram was performed showing no contrast stagnation or leak. No dysphagia nor regurgitation were referred at 1 month follow up.

Conclusions This approach may be considered an alternative for the treatment of short ZD.

OP195V A LARGE PERFORATION IN THE SINUS PIRIFORM DURING ZENKER DIVERTICULOTOMY EFFECTIVELY CLOSED WITH “CLIPS-AND-RUBBER BAND” TECHNIQUE

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Endoscopic treatment of Zenker diverticulum (ZD) by diverticulotomy consists in cutting the septum between the esophageal lumen and the diverticulum, thus restoring bolus transit. This technique is being increasingly preferred to surgical treatment as it is safe and minimizes the in-hospital stay, especially in patients with important comorbidities [1,2]. Nevertheless, endoscopic diverticulotomy carries a risk of perforation and delayed bleeding [1].

We report here the case of a 94-year-old woman referred for endoscopic treatment of a ZD causing dysphagia for solids and liquids. We first introduced the diverticuloscope (Cook, Ireland) but the progression was difficult and the patient experienced a cough during introduction. We removed the diverticuloscope and noticed a large transmural perforation of the sinus piriform. However, before closing the perforation, we decided to perform the diverticulotomy without the diverticuloscope using the window technique[3]. After this, we tried to close the perforation but usual clipping appeared impossible, since it was difficult to catch the two edges of the defect. Therefore, as already described to close resected area after EMR [4], we placed the first clip with attached a rubber band on the lower edge of the perforation by folding the not perforated mucosa. Then, a second clip grasped the rubber band and was attached on the upper edge of the perforation. Due to elastic force, the margins of the defect were stretched and approached each other and the entire defect was closed with two additional clips. After 3 days of diet, patient feed again and was discharged at day seven. At one month after the operation, she was asymptomatic for dysphagia and no sepsis occurred.

In conclusion, the “clip-and-rubber band” technique allows to approach closely the edges of large perforation also in difficult positions such as the sinus piriform, thus facilitating the complete closure.

OP196V ‘POSTERIOR-LIKE’ ANTERIOR POEM

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Per Oral Endoscopic Myotomy (POEM) can be performed via an anterior or posterior approach to the esophageal wall, depending on the operator's preference. Recent data, however, show that posterior POEM is faster in accomplishing myotomy and in mucosal closure time with less risk for inadvertent mucosal injury. These advantages are attributed to the axis of the dissection plane which naturally parallels to the endoscope working channel. Conversely, anterior POEM has been associated with less esophageal acid exposure post myotomy. Moreover, the gravity-dependent pooling of liquids occurs away from the dissection plane. Therefore, we have recently introduced a modified version of anterior POEM, named ‘Posterior-Like’ anterior POEM, in which the operator simulates the experience of posterior POEM while performing anterior POEM, by means of ergonomic shifts. This is done through anticlockwise rotation of the endoscope shaft, while simultaneously rotating the operator’s body to face another monitor placed by the patient’s feet. In this fashion, the tunnel and the myotomy axis are positioned at 6 o’clock, as in posterior POEM. The purpose of this video is to present step by step this technique in a case of type I Achalasia.
**OP198V** GASTRIC POEM TO TREAT INCISURA ANGULARIS TORSION AFTER SLEEVE GASTRECTOMY

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**Aims** Gastric torsion is an uncommon complication after sleeve gastrectomy leading to food intolerance and abdominal pain. The established treatment is surgical adhesions resolution. Achalasia balloon dilation or stenting has been described. We report a clinical case of a patient with gastric torsion after 6 months of sleeve gastrectomy unresponsive to endoscopic treatment.

**Methods** The proposed treatment was to perform a gastric POEM to cut the adhesions through a gastric submucosal tunnel. The critical area was incisions in the curvature. Submucosal long tunnel was fashioned from 8 cm above the diverticulum to the posterior wall, passing nearby the diverticular septum and continued up to the stomach. Then an anterograde septotomy was performed continued by a myotomy. Finally the mucosal access was closed with clips. Patients were kept fasting during 12 hours and then resumed oral intake (liquid then mixed) in absence of complication. The had a clinical assessment at 3 months with a esophagogram.

**Results** 6 patients were included (3 men and 3 women aged between 62 to 83 years). The main symptoms were dysphagia (n = 6), regurgitations (n = 4) and weight loss (n = 4), evolving for a mean of 15 years. Five of them had an achalasia and one a nutcracker esophagus at high resolution manometry. Two already benefited from a regular POEM with cardial myotomy, without success.

All the procedures were completed, without per or post-operative complications. Patients were discharged between 2 and 8 post-operative days. At 3 months, 5 patients had a clinical resolution of symptoms and resumed a normal diet. All patients had improved their weight. All esophagograms showed a better esophageal clearance and a decreasing of the diverticula's size.

**Conclusion** The POEM-S for treating epiphrenic diverticulas with or without motility disorder is a safe and effective technique that should be considered instead of morbid surgery.

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**OP197V** GASTRIC POEM TO TREAT INCISURA ESOPHAGEAL DIVERTICULUM. A PILOT STUDY WITH VIDEO

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**DOI** 10.1055/s-0039-1681374

**Background and aims** Esophageal diverticula are rare, frequently associated with esophageal dysmotility, and usually managed surgically with high morbidity. We report a series of 6 patients treated by peroral endoscopic submucosal myotomy and septotomy (POEM-S). The objectives were to describe the technique, document its feasibility, safety and clinical efficacy.

**Patients and methods** Patients referred for endoscopic management of epiphrenic diverticulum by POEM-S were included. Procedures where performed in patients intubated with CO2 and regular scopes and using a Triangle knife (Olympus, Japan). The tunnel was started just above the diverticulum, on the posterior wall, passing nearby the diverticular septum and continued up to the stomach (if achalasia). Then an anterograde septotomy was performed continued by a myotomy. Finally the mucosal access was closed with clips. Patients were kept fasting during 12 hours and then resumed oral intake (liquid then mixed) in absence of complication. The had a clinical assessment at 3 months with a esophagogram.

**Results** The POEM-S for treating epiphrenic diverticulas with or without motility disorder is a safe and effective technique that should be considered instead of morbid surgery.

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**OP199 IMPROVED LESION DETECTION WITH HIGH-QUALITY VERSUS ADEQUATE CLEANSING SUCCESS: A POST HOC ANALYSIS OF 1749 PATIENTS IN RANDOMISED CLINICAL TRIALS USING THE HAREFIELD CLEANSING SCALE**

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**DOI** 10.1055/s-0039-1681375

**Aims** Lesion detection requires colon cleansing. On the Harefield Cleansing Scale (HCS), success equals a minimal segmental score of 2/4 in all five segments; cumulative 10/20. Benefits of high-quality cleansing are debated. This post hoc analysis of randomised clinical trials assessed lesion detection in cumulative segmental score groups permitting real-world segmental cleansing score variability in each patient.

**Methods** Three similar phase 3 trials assessed the colon cleansing efficacy and safety of 1L NER1006 (PLENVU) versus standard bowel preparations. Cleaning quality assessment was standardised with treatment-blinded central readers using the HCS. Our treatment-independent analysis included all patients with fully documented segmental cleansing scores and lesion counts. Three cumulative HCS scores group 0–10 (failed to adequate), 11–13 (adequate with some high-quality), and 14–20 (mostly high-quality) were stratified for maximal samples with a comparable size. Polydetection rates (PDR), adenoma detection rates (ADR) and the mean number of polyps (MPP) adenomas (MAP) per patient were analysed. One-sided t-tests were used to identify any differences in lesion detection versus the highest cleansing quality group HCS 14–20.

**Results** From 1985 randomised patients, 1749 were included (Table). The highest quality cleansing group HCS 14–20 (n = 551) was associated with a significantly higher ADR, MPP and MAP than the medium quality cleansing group HCS 11–13 (n = 518). HCS 14–20 was also associated with a significantly higher PDR, ADR, MPP and MAP than the failed to adequate group HCS 0–10 (n = 617).

**Tab. 1 Cumulative HCS scores (0–20) versus lesion detection in the overall colon**

<table>
<thead>
<tr>
<th>Cumulative HCS segmental scores (0–20)</th>
<th>Mostly high-quality (14–20)</th>
<th>Adequate with some high-quality (11–13)</th>
<th>Failed to adequate (0–10)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PDR, n/N (%) P-value vs. HCS 14–20</td>
<td>263/351 (0.48)</td>
<td>250/581 (0.43)</td>
<td>261/617 (0.42)</td>
</tr>
<tr>
<td>ADR, n/N (%) P-value vs. HCS 14–20</td>
<td>189/551 (0.34)</td>
<td>156/581 (0.27)</td>
<td>164/617 (0.27)</td>
</tr>
<tr>
<td>MPP, mean (SD) P-value vs. HCS 14–20</td>
<td>1.28 (2.81)</td>
<td>0.99 (1.72) P = 0.017</td>
<td>1.14 (2.35) P = 0.171</td>
</tr>
<tr>
<td>MAP, mean (SD) P-value vs. HCS 14–20</td>
<td>0.75 (2.11)</td>
<td>0.54 (1.26) P = 0.022</td>
<td>0.52 (1.19) P = 0.010</td>
</tr>
</tbody>
</table>

**Conclusions** In large and well-balanced sample sizes of clinical practice relevance, high-quality colon cleansing improves lesion detection over lower cleansing qualities.
OP200 EFFECTIVENESS AND TOLERABILITY OF VERY LOW VOLUME PREPARATION FOR COLONOSCOPY: A PROSPECTIVE, MULTICENTER STUDY

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Aims Effectiveness and tolerability of bowel cleansing is essential for a quality colonoscopy. The aims of this study were to assess the effectiveness and tolerability of novel 1L PEG preparation compared to 4L and 2L PEG solutions and to evaluate factors associated with a bowel cleansing success.

Methods 605 consecutive outpatients undergoing colonoscopy after an afternoon-only or afternoon-morning PEG-based bowel cleansing were prospectively enrolled at 4 Sicilian hospitals from July to October 2018. Bowel cleansing was assessed through the Boston-Bowel-Preparation-Scale (BBPS) and cleansing success was defined as a total BBPS ≥6 with a partial BBPS ≥2 in each colon segment. Tolerability was evaluated through a semi-quantitative scale with a score ranging from 0 to 10.

Results Overall, 229 patients performed a 4L-PEG preparation (Selgesse), 261 a 2L-PEG cleansing (Moviprep or Clensia) and 115 a 1L-PEG preparation (Plenvu). The 1L preparation was the most tolerated with an average rating score of 7.5 ± 1.9, 7.2 ± 2.0 and 7.8 ± 1.3 (p < 0.04) respectively for 4L, 2L and 1L-PEG solution in the absence of serious adverse events within any of the three groups. Overall, bowel cleansing by BBPS was 6.1 ± 1.6, 6.0 ± 1.6 and 6.7 ± 1.5 (p = 0.007). A successful preparation was achieved in 72% of patients.

Conclusions The novel 1L PEG preparation presents a higher effectiveness compared to higher volume PEG preparation both in terms of overall and right colon cleansing using the Harefield scoring (OR = 1.19, 95% CI = 1.08–1.32; P = 0.005), colonoscopy within 5 hours after the end of the preparation (OR = 2.20, 95% CI = 1.1–4.85; P < 0.04), absence of diabetes (OR = 1.68, 95% CI = 1.02–2.85; P = 0.05), and tolerability rating (OR = 1.19, 95% CI = 1.08–1.32; P = 0.001) were independently associated with a bowel cleansing success.

OP201 COLON CLEANSING EFFICACY AND SAFETY OF 1L NER1006 IN PATIENTS WITH MILD TO MODERATE RENAL IMPAIRMENT: POST HOC ANALYSIS OF RANDOMISED PHASE 3 CLINICAL TRIALS

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Aims Only polyethylene glycol (PEG) bowel preparations are recommended for patients with renal failure. This post hoc analysis of randomised phase 3 clinical trials assessed the colon cleansing efficacy of the first 1L PEG, NER1006, in renally impaired versus non-renal impaired patients.

Methods Patients received split dosing regimens of NER1006, either day-before (PM/PM), overnight (PM/AM), or morning-only (AM/AM). Colon cleansing efficacy was assessed by treatment blinded central readers using the Harefield Cleansing Scale (HCS). The efficacy analysis included patients with a documented renal status and colonoscopy data. Patients were stratified into creatinine clearance rate (CrCl) groups: normal renal function (≥ 90 mL/min), mild renal insufficiency (≥ 60 to < 90 mL/min), or moderate renal insufficiency (≥ 30 to < 60 mL/min). Patients with severe renal insufficiency were excluded.

Results Among 1134 randomised patients, 1016 were assessed for efficacy (renal status; 692 mild/moderate, 324 normal). No significant difference was observed in the overall cleansing success rates in mild and moderate versus normal (Table). Safety was assessed in 1028 patients. The types of TEAEs were generally consistent between mild and moderate and normal. The most common TEAEs in all patient groups were gastrointestinal i.e. nausea, vomiting and dehydration. There were numerically more TEAEs in patients with moderate renal insufficiency versus normal. However, this may reflect the patients’ disease state.

Table 1 Percentage of NER1006 patients with successful overall colon cleansing using the HCS in patients with renal-impairment vs. normal renal function

<table>
<thead>
<tr>
<th>Successful overall colon cleansing using the HCS</th>
<th>Mild to moderate renal impairment: CrCl 10–90 mL/min</th>
<th>Normal renal function: CrCl &gt;90 mL/min</th>
</tr>
</thead>
<tbody>
<tr>
<td>MORA PM/AM N = 262</td>
<td>96% (183/190)</td>
<td>97% (69/71)</td>
</tr>
<tr>
<td>MORA AM/AM N = 270</td>
<td>91% (182/200)</td>
<td>91% (62/68)</td>
</tr>
<tr>
<td>DAY PM/PM N = 236</td>
<td>64% (91/142)</td>
<td>67% (61/91)</td>
</tr>
<tr>
<td>NOCT PM/AM N = 255</td>
<td>92% (147/160)</td>
<td>94% (88/94)</td>
</tr>
</tbody>
</table>

Conclusions The current efficacy and safety findings support the use of NER1006 (PLENVU) as a bowel preparation in patients with mild to moderate renal impairment.

OP202 1L NER1006 IMPROVES HIGH-QUALITY COLON CLEANSING VERSUS STANDARD BOWEL PREPARATIONS: POST HOC ANALYSIS OF PHASE 3 CLINICAL TRIALS USING REAL-WORLD CLEANSING ASSESSMENT BY SITE ENDOSCOPISTS

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Aims Colonoscopy requires bowel cleansing; high-quality cleansing facilitates lesion detection. NER1006 is a 1L polyethylene glycol (PEG) bowel preparation. This post hoc analysis of three randomised trials investigated cleansing efficacy assessed, as in clinical practice, by site endoscopists.

Methods Patients received either a 2-day evening/morning regimen of NER1006 (N2D), 2L PEG+ascorbate (2LPEG), or oral sulfate solution (OSS); or day-before NER1006 (NDB) or sodium picosulfate plus magnesium citrate (SPMC). Morning-only NER1006 (N1D) dosing was also evaluated. Cleansing was assessed by treatment-blinded site endoscopists using the Harefield Cleansing Scale (HCS). This analysis included only patients with self-reported 100% treatment adherence. Overall cleansing success (HCS grade A or B), overall high-quality cleansing success (HCS grade A), and the proportion of high-quality segments (HCS 3–4) per treatment population were analysed.

Results Among 1985 randomised patients, 1367 were included (Table). Overall cleansing success was higher with N2D than 2LPEG (97.5% vs. 93.0%) and more patients had overall high-quality cleansing with N2D and N1D than 2LPEG (72.1% and 68.4% vs. 56.0%). N2D delivered more overall high-quality cleansing than OSS (77.3% vs. 69.8%). Overall cleansing success was higher with NDB than SPMC (74.5% vs. 62.9%) and more patients achieved HCS Grade A with NDB than SPMC (29.0% vs. 12.0%). More high-quality segments were demonstrated with N2D and N1D versus 2LPEG (87.1% and 84.4% vs. 76.3%), with N2D versus OSS (89.5% vs. 84.4%) and with NDB than SPMC (60.3% vs. 47.0%).
Table 1. High-quality colon cleansing as assessed by site endoscopists in patients with self-reported 100% treatment adherence

<table>
<thead>
<tr>
<th>Cleansing success</th>
<th>NZD vs. 2LPEG</th>
<th>NTD vs. 2LPEG</th>
<th>NZD vs. OSS</th>
<th>NDB vs. SMPC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample size</td>
<td>NER1006 vs. comparator, N</td>
<td>204 vs. 200</td>
<td>193 vs. 200</td>
<td>225 vs. 225</td>
</tr>
<tr>
<td>Overall cleansing success HCS Grades A+B, n/N (%)</td>
<td>199 (204) (97.5) vs. 186/200 (93.0)</td>
<td>P = 0.016</td>
<td>180/193 (93.3) vs. 186/200 (93.0)</td>
<td>P = 0.459</td>
</tr>
<tr>
<td>Overall high-quality cleansing success HCS Grades A, n/N (%)</td>
<td>147/204 (72.1) vs. 112/200 (56.0)</td>
<td>P = 0.001</td>
<td>132/193 (68.4) vs. 112/200 (56.0)</td>
<td>P = 0.006</td>
</tr>
<tr>
<td>High-quality segments HCS 3–4</td>
<td>888/1020 (87.1) vs. 763/1000 (76.3)</td>
<td>P = 0.001</td>
<td>814/965 (84.4) vs. 763/1000 (76.3)</td>
<td>P = 0.001</td>
</tr>
</tbody>
</table>

Conclusions When assessed by site-endoscopists NER1006 (PLENVU) delivers greater high-quality, HCS grade A, cleansing than 2LPEG, OSS, or SMPC.

OP203 EVALUATION OF A LOW VOLUME BOWEL CLEANSING PREPARATION (ORAL SULPHATE SOLUTION) VERSUS MACROGOL: A PHASE III, MULTICENTRE, RANDOMISED COMPARATIVE CLINICAL TRIAL

Authors Fedorov E1, Kashin S2, Veselov V3, Tkhomirova E4, Zavialov D5, Veselov A6, Kornowski A7, Gorskaya T8, Volteau M9, Ponchon T10

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Aims This study aimed to demonstrate the non-inferiority of low-volume oral sulphate solution (OSS) to macrogol 4000+electrolytes for bowel preparation, and assess the efficacy, safety and acceptability of OSS.

Methods This prospective, randomised, investigator-blinded, parallel group, multicentre, non-inferiority phase III study (NCT02321462) was conducted at three centres in Russia between March and December 2015. Adults undergoing diagnostic colonoscopy were randomised to receive OSS or macrogol as a split dose. Anonymised videos of the examinations were centrally reviewed. The primary endpoint was the proportion of patients with successful overall bowel preparation, defined as Boston Bowel Preparation Scale (BBPS) global score ≥ 6. Secondary endpoints included patient compliance and safety.

Results 296 patients were randomised (OSS: 147, macrogol: 149): 294 in the Intention-to-Treat (ITT) population, 274 in the Per-Protocol (PP) population. 22 OSS patients and 21 macrogol patients had inflammatory bowel disease (IBD). Bowel preparation success (BBPS ≥ 6) was high in both groups (OSS: 97.2% [95% CI: 89.5–99.3]; macrogol: 97.7% [95% CI: 90.7–99.4]; PP population). The adjusted difference between the groups was -0.5% (95% CI: -4.2 to 3.3), demonstrating non-inferiority of OSS compared to macrogol (non-inferiority margin was -15%). Compliance was higher in the OSS group than the macrogol group (95.7% vs. 82.3%, respectively, p = 0.0001; ITT population). Nausea was the most frequent adverse event (AE); more patients experienced nausea in the OSS group than in the macrogol group (25.2% vs. 10.2%, respectively [p = 0.0008], after the first dose). Differences between treatment groups in the frequency of other preparation-related AEs (vomiting, abdominal distension, abdominal pain, abdominal discomfort) were not significant. AE intensity was generally mild. The safety profile of patients with IBD not in active phase was similar in the OSS and macrogol groups. Differences between treatment groups in AEs were small and generally mild. The safety profile of patients with IBD not in active phase was similar to previous reports. This real-life study supports the benefit/risk profile seen in clinical trials.

OP204 COMPLIANCE WITH INSTRUCTIONS OF USE FOR ORAL SULPHATE SOLUTION, TOLERABILITY AND SAFETY IN A REAL-LIFE SETTING: A EUROPEAN MULTICENTRE POST-AUTHORISATION SAFETY STUDY

Authors Regula1, Spaander MCW2, Suchanek S3, Kornowski A4, Perrot V5, Fischbach W6

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Aims Oral Sulphate Solution (OSS) is a low-volume bowel cleansing solution administered as 2 doses of 500 ml saline sulphate solution each followed by 1000 ml water or clear liquids (for hydration). The aim of this study was to assess non-compliance with hydration guidelines and describe the safety profile of OSS in routine practice.

Methods Consecutive eligible patients were included in this prospective, non-interventional, multicentre, European Post Authorisation Safety Study of OSS use in routine clinical practice (NCT02630680). Patients recorded adverse events (AEs) and compliance to hydration. Compliance to hydration was calculated as a ratio of actual volume taken versus the prescribed 2000 ml. Non-compliance was defined as taking < 75% of hydration. Missing volumes were imputed as not taken. Endpoints were also reported in predefined special populations (age ≥ 65 years, risk of electrolyte shifts).

Results 1281 patients were recruited in 16 centres in the Czech Republic, Germany, the Netherlands and Poland. 1206 patients took OSS and provided safety information (safety population); 1177 reported their compliance (registry population). 94.5% of patients were compliant to hydration guidelines. Subgroup analyses (age, gender, dosing regimen) revealed no differences in compliance. 329 patients (27.3%) experienced 758 related AEs, mostly gastrointestinal (82.9%). Most AEs were mild or moderate in intensity. AEs were similar in compliant versus non-compliant patients, and in elderly versus younger patients. Significantly more AEs occurred in female than male patients. No AEs suggestive of dehydration were noted in non-compliant patients. No acute AEs were observed in special populations. AEs did not differ from the known safety profile overall or in special populations.

Conclusions In this non-interventional study, treatment compliance to hydration guidelines was excellent or good in 94.5% of patients receiving OSS. The safety profile of OSS was similar to previous reports. This real-life study supports the benefit/risk profile seen in clinical trials.

OP205 PLASMA ELECTROLYTE CONCENTRATIONS AFTER THE USE OF 1L POLYETHYLENE GLYCOL BOWEL PREPARATION NER1006: POST HOC ANALYSIS OF RANDOMISED CLINICAL TRIALS

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Aims Bowel preparations contain electrolytes to maintain electrolyte homeostasis after diarrhea. This post-hoc analysis of randomised, Phase 3 clinical trials assessed plasma sodium concentrations following treatment with the 1L NER1006.

Methods The safety of NER1006 was assessed in the studies NOCT, MORA and DAYB. This analysis included patients whose plasma sodium concentrations shifted from normal at baseline to above upper limit normal (ULN) at any subsequent visit. ULN was defined locally and ranged from 143–148 mmol/l. Timing of blood sample collection was determined by the dosing schedule. Samples were collected at 4 visits: at baseline (1), day of colonoscopy (2), 1–4 days (3) and 8–10 days (4) post-colonoscopy.

Results Among 1134 randomised patients, 1028 had evaluable sodium data. The reference range (RR) was high with >50% patients at >142 mmol/l. For such patients, minor DAYB experienced elevated sodium levels. However, in NOCT the baseline levels were transient and not considered clinically significant.

NER1006. Across all three studies the median changes in plasma electrolyte levels were transient and not considered clinically significant.

Tab. 1 Mean sodium plasma levels in NER1006 patients who were normal at baseline but above ULN at subsequent visit (safety set).

<table>
<thead>
<tr>
<th>Study % patients with shift Normal baseline to ULN</th>
<th>Baseline Mean mmol/l (SD)</th>
<th>Visit 2 Mean mmol/l (SD)</th>
<th>Visit 3 Mean mmol/l (SD)</th>
<th>Visit 4 Mean mmol/l (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MORA (n = 92) 17% (92/531)</td>
<td>142 (2.08)</td>
<td>148 (2.05)</td>
<td>142 (2.83)</td>
<td>143 (2.56)</td>
</tr>
<tr>
<td>DAYB (n = 17) 7% (17/235)</td>
<td>141 (1.87)</td>
<td>146 (2.26)</td>
<td>144 (2.68)</td>
<td>143 (2.62)</td>
</tr>
<tr>
<td>NOCT (n = 105) 40% (105/262)</td>
<td>141 (1.82)</td>
<td>147 (1.61)</td>
<td>142 (2.23)</td>
<td>142 (2.06)</td>
</tr>
<tr>
<td>Overall (n = 274)</td>
<td>142 (1.96)</td>
<td>147 (1.92)</td>
<td>142 (2.57)</td>
<td>142 (2.35)</td>
</tr>
</tbody>
</table>

Conclusions Mild, transient increases in plasma electrolyte levels were observed with NER1006 (PLENVU) on visit 2, these were not clinically significant.

OP206 OUTCOMES OF ENDOSCOPIC SUBMUCOSAL DISSECTION (ESD) DURING LIVE ENDOSCOPY EVENTS – A 12- YEAR FOLLOW-UP

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Aims Live endoscopy events (LEE) have increased considerably in the last 20 years. However, ethical and patient-related issues have been raised, especially concerning complications, patient outcome as well as success rate. There is no data showing the outcome of ESD during LEE. In this study, ESD procedures performed during the Augsburg Endo-Update LEE were compared with matched routine ESDs. The histological R0 resection rate was significantly higher in the LEE group as compared with the control group (82% vs. 59%; p < 0.05), the complication rate was significantly lower in the LEE group as compared with the control group (6% vs. 23%; p < 0.05) while the procedure time was similar in both groups (133 minutes vs. 130 minutes). However, the difference between both groups leveled out in the second half of the study period (2012–2017; R0 94% vs. 72%; complications 5.3% vs. 5.5%) as compared with the first half of the study period (2006–2011; R0 69% vs. 44%; complications 2.9% vs. 43%).

Conclusions ESD can be performed safely during LEE. The better outcome in the LEE group was probably because most LEE-ESDs were performed by Japanese experts. However, the learning curve of the local European endoscopists improved considerably over time.

OP207 PROSPECTIVE COMPARISON OF AN ADULT, AN INTERMEDIATE PEDIATRIC AND A LONG PEDIATRIC COLONOSCOPE IN THE TRAINING PROCESS OF GASTROINTESTINAL FELLOWS TO ACHIEVE HIGH-QUALITY COLONOSCOPIC PRACTICE

Authors Tribonias C1,2, Lyarakos C2, Penesis C2, Charisis D1, Daferera N1, Lykiardopoulos B1, Al-Shaheen K1, Hjortswang H2
Institute 1 Linköping University Hospital, Gastroenterology, Linköping, Sweden; 2 General Hospital of Nikaia ‘Agios Panteleimon’, Gastroenterology Department, Athens, Greece

Aims Few data are available on the influence of colonoscope length and diameter for trainees, which could affect both the training process and colonoscopy quality. We conducted this prospective observational cohort study to investigate which scope is more suitable for starting the colonoscopy training apropos technical competence, quality indicators and patient’s comfort during diagnostic colonoscopy.

Methods A total of 126 consecutive patients were enrolled in the study and assigned into three groups: adult colonoscope (AC, n = 41), intermediate length pediatric colonoscope (IPC, n = 43) and long length pediatric colonoscope (LPC, n = 42). Primary outcomes recorded were completeness to the procedure.

Results Cecal intubation rates were not statistically different between the groups: adult colonoscope (87.8%), intermediate pediatric colonoscope (81.4%) and long pediatric colonoscope (92.8%). On the contrary terminal ileal intubation rate differed significantly among the three groups (p = 0.015) with long pediatric colonoscope having the higher ileal intubation rate (66.7% vs. 60.9%/AC and 37.2%/IPC). There were significant differences in position change (fewer with LPC) vs. AC and IPC) and midazolam administered mg-dose (lower with LPC vs. AC) and IPC) (0.93–0.032). Loop formation with subsequent resolution was confirmed to relate significantly with higher pain for the patient with all of the three colonoscope types.

Conclusions The long length pediatric colonoscope performs better in trainee hands than adult and intermediate length pediatric colonoscope in terms of reaching competency and quality indicators (ileal intubation) with lower discomfort for the patients during colonoscopic procedures (lower midazolam dose and fewer positional changes). It could be considered the most suitable scope for trainees to start a high-quality colonoscopy training.

Friday, April 5, 2019 17:00 – 18:30
Education Club C
OP209 COLONOSCOPY WITH THE 3D NAVIGATION SYSTEM SCOPEPILOT VERSUS STANDARD COLONOSCOPY

Authors Tscherniewski N¹, Straulino F¹, Genther A¹, Kangalli S¹, Eichhoff A¹
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Aims The successful coecal intubation is a challenge but also a quality indicator in colonoscopy. Loop formation can complicate the advancement of the endoscope or even prevent reaching the coecum. The 3-D navigation system SCOPEPILOT by Pentax allows a real time position monitoring of the endoscope during colonoscopy and should facilitate the intubation of the coecum. The aim of this study was to compare the coecal intubation time with and without SCOPEPILOT.

Methods In 2017 we examined 204 patients with an indication for a colonoscopy and randomized them to either colonoscopy with SCOPEPILOT or standard colonoscopy. Five endoscopists (two learner and three experienced endoscopists) performed the examinations. The time until intubation of the coecum was measured, the quality of the bowel preparation rated and the subjective benefit for the endoscopist during the examination registered. In case of looping of the endoscope the type of loop was documented.

Results The average age was 61 years in both groups. The quality of bowel preparation was similar as well (2.49 vs. 2.76). The coecum was reached in all examinations. The time until successful intubation of the coecum was in the standard group 8.99 min (± 4.9) whereas with the SCOPEPILOT the coecum was reached in 6.33 min (± 3.86), which was significantly faster (p < 0.005).

Conclusions Especially the two less experienced endoscopists reported an earlier recognition and easier characterization of looping. The sigma-N-loop was the most common loop followed by an alpha-loop.

OP210 IMPLEMENTATION OF A DIRECTLY OBSERVED POLYPECTOMY SKILLS (DOPyS) ASSESSMENT TOOL: A SURVEY STUDY FOR GLOBAL IMPLEMENTATION

Authors Rajendra A¹,², Thomas-Gibson S¹, Haycock A¹, Bobeck M², Agostino Gemelli IRCCS, Rome, Italy; 4 Endoscopia Digestiva Chirurgica, Fondazione Policlinico Agostino Gemelli IRCCS, Rome, Italy; 5 Endoscopy, Cantacuzino Clinical Hospital, Bucharest, Romania; 6 Gastroenterology, Zadar General Hospital, Zadar, Croatia; 7 Gastroenterology and Hepatology, University of Belgrade Medical School, Belgrade, Serbia; 8 Internal Medicine, Carol Davila Medical School, Bucharest, Romania

Aims Quality standards for the practice of ERCP have recently been updated; however there is limited data regarding the impact of trainee involvement on procedure-related outcomes and patient safety. We aimed to evaluate whether trainee involvement increases the risk of procedure failure or adverse events.

Methods We conducted a prospective, multicenter observational study of ERCP procedures. Participating endoscopists completed a standard form after each procedure, providing clinical data, technical aspects of the procedure, including the degree of involvement of trainees, technical success and procedure-related adverse events. Trainees were defined as endoscopists who had performed < 200 ERCPs or were still working under supervision at the time of the study. Sample size was calculated to allow the detection with 90% power of a 5% increase in adverse event rates, from an estimated 10% in the control group to 15% in the trainee group.

Results Data from 1843 procedures performed by 18 independent operators and 22 endoscopists in training between October 2016 and October 2018 in 6 European centers were prospectively collected and analyzed. Common bile duct stones (46.8%) was the most frequent indication for ERCP. Trainees were involved in 822 (44.6%) procedures, including 543 native papilla cases, managing to complete their respective procedures without any assistance from their supervisor in 58.9% of the cases. The unassisted cannulation rate of a native papilla by trainees was 74.3%. Trainee involvement did not compromise their supervisor in 58.9% of the cases. The unassisted cannulation rate of a native papilla by trainees was 74.3%. Trainee involvement did not compromise procedure outcome or patient safety.

Conclusions Our study shows that trainee involvement in ERCP procedures does not compromise procedure outcome or patient safety.

OP208 IMPACT OF TRAINEE INVOLVEMENT ON TECHNICAL OUTCOME OF ERCP PROCEDURES AND PATIENT SAFETY: RESULTS OF A PROSPECTIVE MULTICENTER TRIAL

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Aims Quality standards for the practice of ERCP have recently been updated; however there is limited data regarding the impact of trainee involvement on procedure-related outcomes and patient safety. We aimed to evaluate whether trainee involvement increases the risk of procedure failure or adverse events.

Methods We conducted a prospective, multicenter observational study of ERCP procedures. Participating endoscopists completed a standard form after each procedure, providing clinical data, technical aspects of the procedure, including the degree of involvement of trainees, technical success and procedure-related adverse events. Trainees were defined as endoscopists who had performed < 200 ERCPs or were still working under supervision at the time of the study. Sample size was calculated to allow the detection with 90% power of a 5% increase in adverse event rates, from an estimated 10% in the control group to 15% in the trainee group.

Results Data from 1843 procedures performed by 18 independent operators and 22 endoscopists in training between October 2016 and October 2018 in 6 European centers were prospectively collected and analyzed. Common bile duct stones (46.8%) was the most frequent indication for ERCP. Trainees were involved in 822 (44.6%) procedures, including 543 native papilla cases, managing to complete their respective procedures without any assistance from their supervisor in 58.9% of the cases. The unassisted cannulation rate of a native papilla by trainees was 74.3%. Trainee involvement did not compromise procedure outcome or patient safety.

Conclusions Our study shows that trainee involvement in ERCP procedures does not compromise procedure outcome or patient safety.

Barriers to implementing DOPyS

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<tr>
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<th>Too time consuming to use</th>
<th>Unappealing</th>
<th>Too complex to use</th>
<th>Others (missing features, confusing etc)</th>
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<tbody>
<tr>
<td>Trainer</td>
<td>29 (41%)</td>
<td>8 (11%)</td>
<td>5 (7%)</td>
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<td>33 (33%)</td>
<td>23 (25%)</td>
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<td>58</td>
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Methods A web-based survey was designed based on eight standardized implementation outcome variables. This included 26 questions (incl. free-text) screened by two senior endoscopists and an implementation science expert. The survey was distributed globally to gastroenterology trainees and trainees through national societies, conferences, social media platforms and emails. Data collection and analysis was performed using SurveyMonkey software.

Results 121 responses were collected (Trainers 59: Trainees 62) from 8 countries. 52% (63) rated DOPyS as a high-quality tool. 62% (76) were satisfied with DOPyS and most (45%) felt that DOPyS “meets their needs”. Most respondents described it as “relevant to clinical practice” (64%) and a useful tool (59%). A large proportion (21%) felt it was “impractical”. We explored this further to assess barriers in sustainability of DOPyS and increase implementability of DOPyS by training trainees to use DOPyS with a similar distribution between trainees and trainers. Trainees additionally felt it “unappealing”.

Conclusions The study has identified barriers to implementation, explored ways to sustain UK implementation, increase implementability of DOPyS and ensure adoption of this educational tool for an international audience.
OP211 EVALUATION OF OUR TRAINING PROGRAM OF
ENDOSCOPIC SUBMUCOSAL DISSECTION FOR GASTRIC CANCER IN EUROPE; TEACHING BY JAPANESE MENTOR

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Aims Endoscopic submucosal dissection (ESD) has become established as a minimally invasive treatment for early gastric cancer (EGC) in Asian countries. Although training system has been reported in Asian countries, little was known about the training of European countries for ESD. The most important thing is to prevent a decline in clinical outcome during the introductory period. The aim of this study was to assess the learning curve for ESD of EGC in European countries.

Methods Between January 2017 to March 2018, a total of 30 gastric tumors in 30 patients underwent ESD by 2 European trainees over a period of 14 to 9 months. To evaluate the validity of our ESD training program, we analyzed the outcomes of gastric ESD performed by 2 Italian trainees who graduated from medical school 9 years ago. We have criteria which a trainee must meet before they are allowed to do gastric ESD.

Results Thirty cases treated with ESD from January 2017 to March 2018 were investigated. They consist of 13 lesions in the antrum; 9 lesions in the angle or pylorus, and 8 lesions in the corpus (fundus). The main indication was achalasia. It is technically challenging and some authors advocate for preclinical training. We wanted to examine our results regarding safety and outcomes in our paediatric patients at Oslo University Hospital.

Methods Patients younger than 18 years who underwent ERCP between April 1999 and November 2017 were identified using procedure codes. Medical records were examined. Descriptive statistics were prepared.

Results 244 procedures in 158 patients were performed. 56 of these were in 53 infants (age ≤1 year). The remaining 188 procedures were in 102 children. In children the main indication was biliary atresia, and in one patient other liver disease were found. Six of the procedures (10.7%) were therapeutic.

Conclusions We compared the results from a first subset of cases (group A, N = 7) with a second one (group B, N = 8) to assess our progression.

OP213 ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY IN CHILDREN

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DOI 10.1055/s-0039-1681389

Aims We wanted to examine our results regarding safety and outcomes in our paediatric patients at Oslo University Hospital.

Methods A single endoscopist performed POEM in swine live models from March 2017 to June 2018 following the standard technique, except for the use of air instead of CO2 to insufflate.

All total procedure time, creation of mucosal entry, creation of submucosal tunnel and myotomy were measured, as well as length of myotomy and length of mucosal entry. Adverse events (AE) rates were calculated: mucosotomy, pneumomediastin, pneumoperitoneum, bleeding or death.
OP214 GUIDE-WIRE AND CONTRAST INJECTION CANNULATION (MIXED TECHNIQUE) IS SUPERIOR TO EXCLUSIVE GUIDE-WIRE BILIARY CANNULATION FOR PREVENTION OF POST-ERCP PANCREATITIS (PEP): A DOUBLE-BLIND, CONTROLLED, RANDOMIZED TRIAL

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**DOI** 10.1055/s-0039-1681390

**Aims** PEP is the most common complication of ERCP. In the last few years, some studies have demonstrated that the use of guide-wire cannulation (GW-C) instead of contrast injection reduces the rate of PEP. Thus, the GW-C technique has become gold standard and contrast injection an almost proscribed technique, although the majority of studies favouring the GW-C technique has shown exaggerated rates of PEP in the contrast cannulation group or do not allow cross-over between both techniques. In this study, we intend to compare GW-C with the mixed technique (GW and/or contrast injection at endoscopist’s discretion).

**Methods** 727 consecutive patients referred to ERCP in our Department were prospectively evaluated. Of these, 588 naive papilla patients[232 (39.5%) were men, 356 (60.5%) women; mean age 60.3 yrs, ranging from 18 – 90 yrs] entered into the trial and were randomized to receive exclusive guide-wire cannulation (n = 299) or the mixed technique (n = 289) for selective bile duct cannulation.

**Results** Both groups were comparable in respect to sex, age, race (92% were white) and to diagnoses [75% had duct stones, n = 444; 18% had neoplasia (n = 106) and 38 (7%) had other diagnoses]. There were 24 cases of PEP [15 (5%) in GW-C group and 9 (3.1%) in the mixed technique group, p < 0.01]. Time to reach deep cannulation was also faster in the latter group (75% < 5 min vs. 50.2% < 5 min, p < 0.001). More than 10 minutes until cannulation was observed in 21% vs. 10% (groups GW-C and mixed technique, respectively, p < 0.001) of the ERCPs. Total ERCP time was also shorter in the mixed technique group (12 vs. 10 minutes; p < 0.001).

**Conclusions** Compared to exclusive G-W- assisted biliary cannulation, the mixed technique reduces the risk of post-ERCP pancreatitis and promotes a faster cannulation time and, consequently, reduces the total procedure time.

OP215 DOES THE MORPHOLOGY OF THE MAJOR PAPILLA INFLUENCE BILIARY CANNULATION? – A MULTICENTER PROSPECTIVE STUDY

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**DOI** 10.1055/s-0039-1681391

**Aims** Selective biliary duct cannulation is an essential prerequisite for biliary ERCP. Some authors suggest that the difficulty of biliary cannulation and the use of rescue techniques (rT) can be conditioned, among other factors, by the papillary morphology. We intend to evaluate if the duration of biliary cannulation, the existence of a difficult cannulation and the use of rT are influenced by the papillary morphology.

**Methods** This was a multicenter (3) prospective cohort study, including consecutive patients referred for ERCP with naive papilla between August 2017 and January 2018, performed by experienced endoscopists. The papillae were classified into 4 types: non-prominent/prominent/bulging/distorted (Lee’s classification). The transverse, longitudinal papilla diameters and the diameter of the distal bile duct were measured. Primary outcomes: duration of biliary cannulation (tbc), difficult cannulation and rT. The influence of papilla type/dimensions on outcomes was assessed by multiple linear and logistic regressions.

**Results** We included 106 patients, 43 men (40.57%), median age = 79 years (26 – 96). The main indication: suspected obstruction of the biliary tract in 83.02%. The success rate of biliary cannulation was 100%; 29.24% of the cannulations were considered difficult. Rescue access techniques were used in 28.3% of the non-prominent papillae, 41.18% of the prominent ones, 30.77% of the bulging and 16.67% of the distorted ones. In patients with non-prominent papillae (50%), tbc = 3.35 mins (iqr = 6.84); in the prominent papillae (32%), tbc = 5.08 mins (iqr = 8.53); in the bulging papillae (12.26%), the tbc = 2.25 mins (iqr = 5.66); in the distorted (5.66%), tbc = 2.025 mins (iqr = 7.51). In the multivariate analyzes the papilla type/dimensions did not show to be a predictor of the 3 outcomes evaluated.

**Conclusions** Contrary to what is stated in the literature, the type and dimensions of the papilla do not correlate with the difficulty of cannulation nor condition the techniques used.

OP216 GRADING SUCCESS AND COMPLICATIONS IN ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY (ERCP): THE AUSTRIAN SUCCESS AND COMPLICATION SCORE IN ERCP (ASCE – SCORE) A NOVEL GRADING SYSTEM

**Authors** Maieron A1,2, Steiner E1, Duller C3, Schmidt M4, Püspöck A5, Kapral C6

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**DOI** 10.1055/s-0039-1681392

**Aims** The need for standardized benchmarks in endoscopic retrograde cholangiopancreatography (ERCP) has become a pressing matter in quality control and training supervision. The aim of this study was to evaluate and adapt the grading system for ERCP proposed by the American Society for Gastrointestinal Endoscopy (ASGE) 2011 by using a large-scale multicentre data set.

**Methods** Data of over 10.000 ERCPs was collected between 2013 and 2016 for the benchmarking project of the Austrian society of Gastroenterology and Hepatology (web-based questionnaire). Interventions were ranked as suggested by the ASGE. Complications and success of the procedures were recorded. Multiple regression was applied to the ASGE classification in respect to success and complications. Further each procedure suggested by ASGE was tested.

**Results** 10917 ERCPs were documented in 28 different sites from primary to tertiary centres. ASGE grading of 1 – 4 were 14.5%; 51.3%; 28.0%; 6.2%. With overall success – complication-rates of 83.1/6.8%; 89.3/10.9%; 86.2/8.5%; 73.4/11.5%. The multiple regression showed different results than predicted by the ASGE classification for most of the indications. Easy success did not necessarily stand for less complications. A score splitting success and complication with three levels of difficulty/risk was designed.
Conclusions This data set cannot support the ASGE classifications. We could reveal that for grading ERCP success and complications have to be taken into account independently. The Austrian Success and Complication score in ERCP (ASCE – score) was created to incorporate these findings (table 1). With this score a potent tool for planning ERCP and training in endoscopy could be available.

OP217 INITIAL EXPERIENCES WITH TRANSPANCREATIC SPHINCTEROTOMY IN HUNGARIAN CENTERS BASED ON PROSPECTIVELY COLLECTED REGISTRY DATA

Authors Gódi S1, Pécsi D2, Hegyi P2, Czakó L3, Gyökeres T4, Pakodi F1, Bakucz T1, Orbán-Szilágyi Á1, Pécsi D2, Gódi S3, Pakodi F3, Thieme Patai Á5, Szepes Z3, Vincze Á1

Aims Transpancreatic sphincterotomy (TPS) might be an alternative in cases of inadvertent pancreatic duct (PD) cannulation. We evaluated the efficacy and safety of TPS in comparison to needle-knife precut (NKP) techniques from a prospective database with the analysis of post-ERCP pancreatitis (PEP) prophylaxis measures.

Methods The Hungarian ERCP Registry contains 1164 cases with native papilla from five tertiary centers. TPS was performed in 44 cases (3.8%) as a primary advanced cannulation and in 7 cases (0.6%) after NKP resulted pancreatic access, while NKP was used in 250 cases (21.5%).

Results Successful biliary cannulation was achieved in 97.7% (43/44, p = 0.01) of the cases after TPS, while only in 28.6% (2/7, p < 0.001) if NKP preceded TPS, and in 83.6% (209/250) after NKP. PEP occurred in 4.5% (2/44) of cases after TPS, in 14.3% (1/7) if precutting preceded TPS, while in 4.4% (11/250) after NKP. Prophylactic pancreatic stent (PPS) after TPS and postprocedural indomethacin suppository (IND) were applied in 41.2% (21/51), while PPS without IND in 17.6% (9/51) of cases. Only IND was given in 17.6% (9/51), while no PEP prophylaxis was applied in 22.7% (12/51) of cases. Moderately severe PEP occurred in a patient (8.3%, 1/12) without PEP prophylaxis, while one mild PEP after IND (11.1%, 1/9) and another mild PEP after PPS (11.1%, 1/9). Clinically significant bleeding was observed in 2 cases (3.9%) after TPS, while in 4 cases (1.6%) after NKP.

Conclusions TPS is a valuable technique to gain biliary access in cases of difficult biliary cannulation. The rate of biliary access with TPS is significantly higher in our cohort than with conventional precutting. A preceding precut before TPS however significantly decreases the chances of biliary access. Our data shows comparable safety of TPS to NKP methods, even with suboptimal PEP prophylaxis. Stricter adherence to PEP prophylaxis guidelines is warranted.

OP218 THE ROLE OF THE JUXTAPAPILLARY DIVERTICULA IN ENDOCOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY – BASED ON THE HUNGARIAN ERCP REGISTRY

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Aims Contradictory data show that juxtapapillary diverticula can be frequently associated with bile duct stones, cannulation failure and higher rates of complications. In this study we compared success and complications of the ERCP’s in patients with and without juxtapapillary diverticula based on our national ERCP registry.

Methods Data were collected prospectively from five Hungarian centers and contains the main information about the ERCP’s and the 30-day follow-up periods.

Results In our cohort we found 1177 patients without (Group A) and 218 patients (Group B) with juxtapapillary diverticula. The mean age was 65 years vs. 72 years. The male-female ratio was 1:1.34 and 1:1.25. The main indications of ERCPs were almost the same in both groups (obstructive jaundice (29% vs. 23%), common bile duct stone (29% vs. 34%) and cholangitis (29% vs. 35%)). Cannulation failure was 4.74% vs. 5.22% in group A and B, which are acceptable based on the latest guidelines. There was only a minimal difference between the mean times of the whole ERCP procedures (18.64 min vs. 18.4 min). Surprisingly the mean cannulation time was shorter in the juxtapapillary group (3.16 min vs. 7.6 min). Intraprocedural bleeding that needed endoscopic intervention occurred in 4.74% vs. 3.36%, but only 0.87% vs. 0.75% required transfusion. The occurrence of perforation doesn’t differ between two groups, 1.47% vs. 1.12%. The rate of post-ERCP pancreatitis was 1.73% vs. 1.12%, respectively. Cholangitis (2.07% vs. 3.73%) and cholecystitis (0.73% vs. 0.37%) were observed in both groups. Minor intraprocedural cardiovascular events occurred 3.07% vs. 4.85%. There was no significant difference in the rate of adverse events. The 30-day mortality was slightly high in both groups (5.87% vs. 3.36%), but only one case can be connected to the procedure in both groups.

Conclusions Based on these results the juxtapapillary diverticula can’t be considered as a potential cause of cannulation failure or risk factor for complications.

OP219 ANALYSIS OF BILARY CANNULATION ALGORITHM IN HIGH-VOLUME HUNGARIAN ERCP CENTERS BASED ON PROSPECTIVELY COLLECTED REGISTRY DATA

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Aims Selective biliary duct cannulation (BDC) was analysed in our current practice based on the data from five tertiary centers according to the recent evidence-based ESGE algorithm of biliary access.

Methods The prospectively collected ERCP Registry contained 1011 cases of intact papilla with biliary indications. The rate of difficult biliary access and the usage of advanced biliary cannulation methods were analysed.

Results Simple cannulation (659 cases, 65.2%): Deep BDC was achieved with guidewire in 305 cases (30.2%), with papillotomy in 312 cases (30.9%), but failed in 39 cases (3.9%) due to anatomical obstacles. In 3 (0.3%) cases the BDC was not successful. The average cannulation time was 125 s, only 6.1% of the patient had longer than 300 s cannulation time. Twelve (1.9%) post-ERCP pancreatitis (PEP) occurred. Pancreatic guidewire (PGW) assisted cannulation (134 cases, 13.3%): BDC was achieved with double guidewire in 27, with papillotomy in 3, while after prophylactic pancreas stent (PPS) insertion in 12 cases. Pre-cutting was used after PGW or PPS insertion in 12 and 33 cases, TPS was performed in 47 cases. The average cannulation time was 481 s. Biliary access failed in 18 patients (13.4%), while PEP rate was 2.2%. Needle-knife precut (NKP) (160 patients, 15.8%): BDC failed in 28 (17.5%), while PEP developed in 7 cases (4.4%). The average cannulation time was 514 s. Needle-knife fistulotomy (NKF) (58 patients, 5.7%): BDC failed in 4 (6.9%), PEP developed in 2 cases (3.4%). The average cannulation time was 466 s. The overall failure rate of BDC in our cohort was 5.2% (53/1011) excluding anatomical reasons. 42 out of 44 initially failed procedures were successfully completed later on.

Conclusions Advanced biliary cannulation methods were used in our tertiary centers in more than one third of the cases. NKF had the highest BDC rate and required the shortest cannulation time. The PEP rates were similar in the different groups.

Friday, April 5, 2019
ESD esophagus 17:00 – 18:30
Congress Hall

OP220 ENDOSCOPIC SUBEPITHELIAL DISSECTION FOR SUPERFICIAL PHARYNGEAL CANCER: A CASE SERIES OF 44 SUPERFICIAL CANCERS

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Aims The pharyngeal space is the entrance to any endoscopic examination of the upper gastrointestinal tract. Narrow band imaging (NBI) makes it possible to detect superficial cancers in this region. As a minimally invasive treatment, endoscopic subepithelial dissection (ESE) technique could be indicated. We investigated the feasibility and efficacy of ESD for superficial pharyngeal cancers and evaluated their clinical outcomes.

Methods Between October 2008 and December 2016, 44 superficial cancers were endoscopically removed from 32 consecutive patients (91% men, median age 70 years, range 58–83 years) under general anesthesia. Written informed consent was obtained from all patients. The endoscopic treatment involved both ESD, endoscopic mucosal resection (EMR) and endoscopic laser-pharyngeal surgery (ELPS). ESD, EMR and ELPS were performed in collaboration with ear, nose, and throat department and neck surgeon.

Results Of the 32 patients, 8 (25%) had synchronous multiple cancers at pharyngeal mucosal sites. Eleven patients (34%) had a history of head and neck cancer, and 16 (50%) had a history of esophageal cancer. Of the 44 lesions, 23 were histologically diagnosed as T1, 21 were as microinvasive squamous cell carcinoma. Forty-two lesions were located in the hypopharynx, and 4 were in the oropharynx. There were 1 severe adverse events: this case was developed severe spondylitis. The median fasting period was only 1 days (range 1–2 days) after treatment. With a median follow-up period of 34 months (range 11–120 months), the cause-specific survival rates at two years was 100%. All the patients could retain both the pharynx and the functions of speaking, breathing, and swallowing.

Conclusions ESD for superficial pharyngeal cancer is a feasible and effective method. Early detection makes it possible to perform a minimally invasive treatment, allowing excellent short-term survival and the retention of the organs and functions.

OP221 ENDOSCOPIC TREATMENT VS. SURGERY IN PATIENTS WITH HIGH-RISK EARLY ESOPHAGEAL CANCER

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Aims Endoscopy is a standard treatment for patients with ‘high-risk’ early esophageal cancer (EEC). Despite a growing evidence that endoscopic treatment could be a safe alternative even for these patients, the aim was to prospectively assess results of endoscopic vs. surgical treatment in consecutive patients with ‘high-risk’ EEC. ‘High-risk’ cancer was defined as any cancer with sm invasion or mucosal cancer with at least one of the following: poor differentiation (G3/G4), invasion to blood (A+) or lymphatic vessels (L+) and high tumor cell dissociation (TCD3).

Methods Patients with EEC underwent endoscopic resection (ER) or submucosal dissection (ESD). Patients with ‘high-risk’ EEC without contraindications were referred for surgery. Remaining patients continued in endoscopic treatment, if necessary. After treatment, the patients have been followed up for a median of 52 months (range 2–168).

Results A total of 71 patients with ‘high-risk’ EEC underwent endoscopic treatment: 23 patients (32%) had T1a cancer with ‘high-risk’ features and 48 (68%) had T1b cancer with sm invasion; 53 had adenocarcinoma (EAC); 18 had squamous carcinoma (SCC); 24 patients (34%) were referred for surgery and 47 (66%) continued in endoscopic treatment. Endoscopy Complete local remission (CLR) was achieved in 45/47 patients (95.7%). Two patients without CLR continued endoscopic therapy with a palliative intent. Tumor generalization occurred in 2 patients (both had sm3 invasion, A+, L+ and TCD3). All remaining patients with CLR (n = 43) have not experienced either local relapse or generalization. Tumor-free survival was 84 months.

Surgery Among 24 patients who were referred for esophagectomy, one patient had tumor generalization. The remaining 23 patients underwent esophagectomy: local residue of malignancy were present in 6/23 patients (26%). Surgery related mortality was 4.4% (1/23).

Conclusions Endoscopic treatment provides long-term remission (or cure) in considerable number of patients with high risk EAC and it may represent a valid alternative to surgery.
OP222 FIRST SUCCESSFUL TRANSPLANTATION OF SMALL INTESTINAL MUCOSA TO THE CERVICAL ESOPHAGUS AFTER CIRCUMFERENTIAL SCAR EXCISION AND VACUUM SPONGE NEO-VASCULARISATION OF THE TRANSPLANTATION BED

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Aims A 62 year old man had undergone curative circumferential tubular endoscopic submucosal dissection (ESD) from 20 – 27 cm aborally in July 2015 due to an early squamous cell cancer (SCC). Various measures to prevent stricture formation failed.

Methods One year later the patient had to return every 10 days to the hospital for dilatation. Due to again poor surgical alternatives an experimental concept was carried out after prior acute and chronic animal experiments in the pig. As the scar area was likely to be poorly vascularized the scar was first excised in a tubular fashion from the upper esophageal sphincter over 7 centimeters by ESD. Two polyurethan vacuum sponges were used and changed every 3 – 4 days over 20 days in order to stimulate neo-vascularization of the former scar area at 125 mm Hg. In a second intervention a 30 cm segment of small intestine was harvested surgically and the mucosa specially prepared and transplanted to pre-conditioned cervical esophagus. The specimen was then fixed against the wall using a non-covered nitinol stent.

Results Two month after the second procedure several islands of histologically proven vital PAS positive small intestinal mucosa could be observed. In the meantime, small intestinal mucosa has completely spread out in the transplantation area. Clinically the patient has fully recovered from the intervention and works as engineer full time.

Conclusions This first case in man shows: Successful small intestinal mucosal transplantation to the esophagus is feasible after tubular ESD excision of a scar. Optimal local vascularization was induced by polyurethane vacuum sponge conditioning of the transplant area similar to plastic surgery. The case that may offer hope for patients with chronic refractory benign esophageal strictures.

OP223 OUTCOMES OF ESOPHAGECTOMY FOR PATIENTS AFTER NON-CURATIVE ENDOSCOPIC RESECTION OF EARLY ESOPHAGEAL CANCER

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Aims To analyze the oncological outcomes and the safety of esophagectomy after non-curative endoscopic resection of a superficial esophageal cancer.

Methods A retrospective review from 2012 to 2018 was performed at four French tertiary referral centers. All patients had a non-curative endoscopic resection followed by esophagectomy after a multidisciplinary meeting decision. Outcomes measurements were the rates T0N0 specimens, postoperative morbidity and mortality, and overall, disease-free, and cancer specific survival.

Results Thirty patients (13 with squamous cell carcinoma and 17 with adenocarcinoma) with a median age of 65 years were included. The reasons of non-curative endoscopic resection were: positive vertical margins (n = 12), squamous cell carcinoma invading the muscularis mucosae (m3) or the submucosal layer (n = 3 and 9 respectively), adenocarcinoma with a deep submucosal invasion (n = 10), poor differentiation (n = 6) and lymphovascular invasion (n = 6). Two patients had lymph node involvement, and 10 had residual cancer on the surgical resection specimen. Overall, 63% of the esophagi were T0N0. Half of the patients had one or more severe post-operative complications according to the Clavien-Dindo classification: IIa (n = 3), IIb (n = 4), IIIa (n = 6) and IV (n = 2). We diagnosed 2 distant recurrences during a median follow-up of 24 months. At the end of the follow-up, overall, disease-free and cancer specific-survival were 83.3%, 75%, and 90% respectively.

Conclusions Esophagectomy after non-curative endoscopic resection of esophageal cancers allowed to resect residual cancer in 30% and lymph node metastases in 7% of cases, at the cost of 43% severe morbidity and 7% peri-operative mortality. Esophagectomy in this setting has comparable morbidity and mortality to that of esophagectomy for larger tumors. Therefore, the risk of lymph node involvement of early esophageal cancer, as well as the possibility of chemoradotherapy therapy or close follow-up needs to be assessed in multidisciplinary meetings before indicating esophagectomy after endoscopic resection.

OP224 CLINICAL OUTCOME OF ENDOSCOPIC SUBMUCOSAL DISSECTION FOR EARLY ESOPHAGEAL NEOPLASMS IN THE WEST: CAN WE REPRODUCE JAPANESE RESULTS?

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Aims Endoscopic submucosal dissection (ESD) is considered more challenging in the esophagus due thin wall and narrow lumen. The aim of this study is to present the clinical outcome of a ten-year experience with esophageal ESD in a Western center.

Methods Single-center retrospective review of prospectively collected data investigating consecutive patients that underwent endoscopic esophageal ESD between 2009 and 2018, at an Academic Institution. A trained operator performed ESD procedures. Flush Knife BT 1.5 (Fujifilm Co., Japan) was utilized for submucosal dissection. The following data were analyzed: clinical-pathological features, en-bloc, R0 and curative resection rates, and clinical outcome.

Results 70 esophageal ESD procedures were performed in 66 patients (Male: 79%/mean age 63.5 years). Tumors were located mainly in the thoracic esophagus (64%) and classified as macroscopic type 0–Ib (54%). En-bloc resection rate and R0 resection rate were 97% and 88.5% respectively. Mean tumor size was 44 mm (range 15 to 120 mm). Mean ESD duration was 101 minutes (range: 40 – 230 minutes). Histological assessment revealed low-grade or high-grade dysplasia (M1) in 34 patients (48.5%), intramucosal carcinoma (M2) in 9 patients (13%) and M3 in 15 (21.4%) patients. Superficial (SM1) invasion was noted in 4 patients (5.7%) and deep invasion (SM2) in 8 patients (11.4%). Curative resection rate was 80%. Minor adverse events occurred in 7 cases (10%), all managed conservatively. In 12 patients circumferential resection over 75% of circumference was performed and oral corticoid protocol was instituted. Two patients (2.8%) developed stricture managed with dilation. During follow-up (mean: 35 months, range: 23 – 105), one patient, with positive vertical margins, developed local recurrence. No metastases were observed. Overall survival rate was 82%.

Conclusions Esophageal ESD is feasible and effective in the West, yielding favorable short and long-term outcomes, comparable to Japanese series.
**OP225 NON-CELLULAR MATRIX FROM PORCINE DERMIS IN PREVENTION OF ESOPHAGEAL STRicture AFTER CIRCUMFERENTIAL ENDOSCOPIC SUBMUCOSAL DISSECTION – AN EXPERIMENTAL STUDY**

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**Aims** To evaluate the effect of metallic or biodegradable (BD) stents covered with or without non-cellular matrix (Matrix, Xe-Derma) in preventing of esophageal stricture after circumferential endoscopic submucosal dissection (CESD) in experimental pigs.

**Methods** Pigs were randomized into 6 groups: A. control – CESD only (n = 6); B. CESD + systemic corticosteroids (SC) (n = 6); C. CESD + Self-Expandable Metal Stent (SEMS, WallFlex) + SC (n = 8); D. CESD + SEMS + Matrix + SC (n = 8); E. CESD + BD stent (ELLA-CS) + SC (n = 3); F. CESD + BD stent + Matrix + SC (n = 2).

**Results** A total of 33 pigs underwent CESD in the mid esophagus. All pigs with BD stent experienced macroscopic inflammation, massive hyper-granulation and food stagnation in the stent while stent biodegradation did not occur. Except one animal from group B significant strictures developed in all pigs (groups A and B) in 12.9 ± 0.1 days after CESD and in 13.9 ± 1.4 days after SEMS extraction (groups C and D). The longest strictures were observed in the group A (2.7 ± 1.3 cm) and the shortest in SEMS groups (C, D) (1.5 ± 0.8 cm and 1.6 ± 1.1 cm). The narrowest strictures occurred in groups A and C (Ø = 2.71 ± 0.99 mm and 2.8 ± 1.18 mm) vs. groups B and D (Ø = 4.46 ± 1.31 mm and 4.33 ± 2.45 mm).

**Conclusions** None of the tested methods resulted in the effective prevention of post-CESD esophageal stricture. The SEMS coverage with non-cellular matrix from porcine dermis resulted in reduced severity of stenosis and improved healing quality. The BD stent is inappropriate in this indication.

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**OP226 ENDOSCOPIC SUBMUCOSAL DISSECTION FOR BARRETT’S ESOPHAGUS LARGE OR FIBROTIC VISIBLE LESIONS: A BICENTRIC WESTERN COUNTRY PROSPECTIVELY COLLECTED EXPERIENCE**

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**Aims** Some suspected submucosal or fibrotic Barrett esophagus (BE) lesions, have been proposed by the ESGE to be treated by endoscopic submucosal dissection (ESD). The aim of this study is to review two tertiary centers experience in the endoscopic treatment of early BE cancer by ESD.

**Methods** Clinical and technical data from Erasmus Hospital (Brussels) and Westmead Hospital (Sydney) were prospectively collected from November 2013 to November 2018. Complete resection (R0) was defined as lateral and vertical margins clear of carcinoma while a curative resection was defined according to the ESGE guidelines.

**Results** Forty-nine patients, mostly women (58%), mean age of 73 years, presented a BE with a median circumference (C) of 1 (0 – 16) cm and maximal length (M) of 4.5 (0.5 – 18) cm. Each had a visible lesion of 30 (10 – 100) mm suitable for ESD. Median duration of the procedure was 90 minutes (IQR 60 – 122).

En-bloc resection was achieved in 100% of the patients and a complete endoscopic resection in 94% of cases. 29% had more than 50% circumference resected. Median specimen size was of 45 (2 – 110) mm.

Pathological examination showed the presence of carcinoma in 82% of lesions (63% pT1a) with an R0 achieved in 76% of carcinoma. Curative resection was obtained in 65% of cases. For non curative resection, 4 patients were treated surgically and the others followed endoscopically. This follow-up was available for 34 patients among who 29% received ablative therapy for remnant BE eradication. The only complications needing an intervention were strictures in 18% of patients occurring despite steroid preventive treatment for large resections.

A 6 months endoscopy follow-up was obtained in 22 patients, disclosing 72% of cases free of neoplasia and 45% free of intestinal metaplasia.

**Conclusions** ESD for large or fibrotic BE lesions is showing favorable results in term of safety and efficacy combined to ablative therapy.

**Friday, April 5, 2019**

**IBD Club A**

**OP227 PERFORMANCE MEASURES IN IBD SURVEILLANCE COLONOSCOPY- IMPLEMENTING CHANGES TO PRACTICE IMPROVES PERFORMANCE**

**Authors** Smith S1, Cannatelli R1, Sharma N1, McCulloch A2, Mak J2, Shivaji UN1,3, Iqbal T2, Kane K3, Ghosh S1,3, Cooney R2, Iacucci M1,3

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**Aims** Currently dye-based chromoendoscopy (DCE) is recommended for Inflammatory Bowel Disease (IBD) surveillance. However DCE has not been widely adopted into clinical practice yet. We aimed to evaluate performance in IBD surveillance colonoscopy following introduction of structured changes in delivery of service.

**Methods** In August 2016 we introduced a number of changes in practice of surveillance colonoscopy in IBD. These included training/education using interactive videos and images in a structures module; DCE as standard; allocation of 45-minute procedure slot; targeted biopsies (except high risk patients); scoring of endoscopic disease activity; lesion detection and morphology characterisation. All IBD surveillance colonoscopies were allocated to a small team of experienced and expert endoscopists (n = 4 A-D).

We compared quality measures for surveillance procedures performed between 01/2014 – 07/2016 and 08/2016 – 10/2018. The two groups were compared using Chi-square statistics.

**Results** A total of 598 IBD surveillance procedures (277 pre-August 2016 and 321 post-August 2016) were performed. DCE increased (54.2% vs. 76.0% p < 0.0005) whilst random biopsy surveillance reduced (12.3% vs. 3.1% p < 0.0005) and the number of biopsies per patient (21.7% vs. 59.0% p < 0.0005) increased. The total number of endoscopists performing IBD surveillance was reduced with the majority of procedures carried out by fewer endoscopists (81.9% by endoscopists A-D) which led to further
OP228 OUTCOME OF ENDOSCOPIC BALLOON DILATATION FOR SMALL BOWEL STRICTURES USING SINGLE-BALLOON ENTEROSCOPY IN PATIENTS WITH CROHN’S DISEASE

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**DOI** 10.1055/s-0039-1681404

**Aims** Long standing and relapsing nature of CD, frequent surgeries should be avoided in order to reduce the risk of short bowel syndrome. Endoscopic balloon dilatation (EBD) in CD is minimally invasive bowel-length preserving method. Although most of strictures in CD were occurred in small bowels, a few small studies for the balloon-assisted enteroscopic balloon dilatation for small bowel strictures in patients with CD was reported. We evaluated the outcome of EBD for small bowel strictures using single-balloon enteroscopy (SBE) in patients with CD.

**Methods** This retrospective cohort study was performed on the patients who underwent EBD for small bowel strictures using SBE in patients with CD between 2013 and 2018 in the Samsung Medical Center, Seoul, Korea. A total of 30 consecutive patients with 66 procedures were included and analyzed. Retrograde approach was 54 procedures and antegrade approach was 12 procedures.

**Results** The median follow-up duration was 8.9 (IQR, 3.4 to 20.1) months. Of the enrolled patients, failure to dilate all identified stenosis occurred in 9 patients [failure to reach (n = 4), stricture with deep ulceration (n = 3), acute angulation and tight stenosis (n = 2)]. During follow-up, nine patients were undergone subsequent surgery for bowel obstruction (30%). Cumulative surgery-free rates at 6 months, 12 months, and 60 months were 81.3, 64.4, and 42.9%, respectively. Estimated median surgery-free duration was 46.2 (IQR, 36.2 – 56.2) months in patients with technically successful dilatation of all identified stenosis and 16.3 (IQR, 3.2 – 29.3) months in patients with failure to dilate all identified stenosis. On the Cox regression, length of stricture ≥ 2 cm was a factor contributing to the success of EBD (HR, 8.6, 95% CI, 2.7 – 29.3) months in patients with failure.

**Conclusions** EBD using SBE for small bowel CD strictures was effective in case of the length of stricture < 2 cm.

OP229 MAGNIFICATION ENDOSCOPY WITH OPTICAL CHROMOENDOSCOPY FOR THE IN VIVO ASSESSMENT OF HISTOLOGIC INFLAMMATION IN PATIENTS WITH INFLAMMATORY BOWEL DISEASE

**Authors** Klenske E\(^1\), Atreye R\(^1\), Hartmann A\(^2\), Fischer S\(^1\), Hirschmann S\(^1\), Zundler S\(^1\), Iacucci M\(^1\), Neurath M\(^1\), Rath T\(^1\)

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**DOI** 10.1055/s-0039-1681405

**Aims** Apart from mucosal healing as an established treatment goal in inflammatory bowel diseases (IBD), recent evidence suggests that histologic healing is another key prognostic parameter in IBD patients. Herein we aimed to evaluate whether magnification endoscopy in combination with optical chromoendoscopy can accurately assess histologic inflammation in IBD patients.

**Methods** In this prospective study, 82 IBD patients (30 UC, 52 CD) were included. The in vivo histologic inflammation was made with magnification endoscopy in combination with optical chromoendoscopy by three independent endoscopists using a novel magnification score. Targeted biopsies of the imaged areas were obtained and results were compared against two histological scores in UC (Robarts Histopathology Index, RHI; Nancy Histology Index, NHI) and one score in CD (modified Riley index, mRI). Moreover, interobserver agreement was calculated.

**Results** Magnification endoscopy evaluating inflammatory activity based on the mucosal and vascular pattern showed strong correlation with histopathologic scoring in both UC (RHI: r = 0.83, NHI: r = 0.78, both p < 0.05) and CD (mRI: r = 0.74, p < 0.05) with high accuracy, sensitivity and specificity for assessing the histologic inflammation. Further, 25% of patients with mucosal healing on standard endoscopy showed signs of microinflammation on magnification endoscopy in combination with optical chromoendoscopy while none of the patients with mucosal and vascular healing under magnification endoscopy in combination with optical chromoendoscopy exhibited microscopic inflammation. Interobserver agreement for grading intestinal inflammation by magnification endoscopy with optical chromoendoscopy was substantial (κ > 0.7).

**Conclusions** Magnification endoscopy in combination with optical chromoendoscopy allows for a precise real-time assessment of histologic inflammation in IBD patients. Therefore, this approach holds the potential to reduce the need of physical biopsies for monitoring of inflammatory activity in patients with IBD during colonoscopy.

OP230 AUTOMATED REAL TIME ENDOSCOPIC SCORING BASED ON MACHINE LEARNING IN ULCERATIVE COLITIS: RED DENSITY RELIABILITY AND RESPONSIVENESS STUDY

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**DOI** 10.1055/s-0039-1681406

**Aims** Histological remission predicts favourable long term outcome in ulcerative colitis (UC). Operator independent automated digital scoring of endoscopic and histological inflammation in UC could provide an objective and predictive evaluation tool of remission. The aim of this study was to test the operating properties of the Red Density (RD) score.

**Methods** Red Density uses machine learning to calculate a score based on automatic extraction of pixel data from endoscopic images. This algorithm incorporates colour data and vascular pattern recognition. In this prospective study, consecutive patients with UC with a flare were included. At baseline and 8 – 14 weeks after treatment escalation we recorded endoscopic (Red Density score, Lillie’s score of colitis endoscopic index of severity [UCEIS], Mayo endoscopic subscore [MES]), clinical (total Mayo, PRO-2) and histological data (Robarts histopathology index, Robarts’ index of histological inflammation, Robarts’ index of histological inflammation, Robarts’ index of histological inflammation). Intraobserver agreement was calculated.

**Results** Ten patients had 2 consecutive visits (M/F 4/6, median age 39y IQR 36 – 48). At baseline all patients had active endoscopic disease (median IQR UCEIS: 2 (2.5 – 5); MES 2 (1.3 – 2). Nine patients had a change in their endoscopic score compared to baseline. The median delta in UCEIS and MES was 3 (IQR: 2 – 4) (p = 0.009) and 1 (IQR 1 – 2) (p = 0.008) respectively. A significant number of patients achieved clinical, endoscopic and histological remission after treatment (all p < 0.03). Median RD score decreased signifi-
cantly from baseline (166 to 58; p = 0.01). RD correlated moderate with clinical outcomes (r = 0.65, p = 0.001), and strong with both endoscopic (r = 0.75, p < 0.0001), and histological scores (r = 0.75, p < 0.0001). The standardized effect size for RD was 1.22.

Conclusions The automated digital endoscopic Red Density score demonstrates an excellent sensitivity to change after treatment escalation. Red Density is an ideal operator-independent digital tool for the evaluation of endoscopic and histological disease activity in UC.

**OP231 CONFOCAL LASER ENDOMICROSCOPY CAN PREDICT MAJOR CLINICAL EVENTS WITH VERY HIGH SENSITIVITY IN PATIENTS WITH INFLAMMATORY BOWEL DISEASES**

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Aims Probe-based confocal laser endomicroscopy (pCLE) enables in vivo microscopic imaging during ongoing endoscopy. Further, pCLE enables visualization of mucosal barrier dysfunction (MBD) in patients with inflammatory bowel diseases (IBD). With this, pCLE is the only technology allowing functional imaging within the GI tract in IBD patients. Here we evaluated whether assessment of MBD by pCLE can accurately predict major clinical events (MCE) in IBD patients.

Methods IBD patients in clinical and endoscopic remission were prospectively enrolled. pCLE was performed initially and subsequently patients were followed-up for at least 12 months. During follow-up, major clinical events (MCE: IBD-related hospitalization, need for surgery, need for initiation of systemic corticosteroids, immunosuppressants or biologics; escalation of existing biologic therapy) were recorded.

Results 60 patients were prospectively included (37 Crohn’s disease [CD], 23 ulcerative colitis [UC]) with a median age of 38 years (range 19–68). CLE-scoring showed strong correlation with histopathology (r = 0.75, p ≤ 0.05) with an almost perfect interobserver agreement of pCLE findings among different readers (Kappa > 0.8). MBD as assessed with pCLE in the terminal ileum showed 100% sensitivity (95% CI, 77–100), 75% specificity (95% CI, 47–92) and 88% accuracy in CD patients and 83.3% sensitivity (95% CI, 50.8–97.1), 81.8% specificity (95% CI, 47.8–96.8) and 82.6% accuracy in UC patients for predicting MCEs during the 12 month follow-up. In those patients with MBD in the colon, sensitivity, specificity and accuracy for predicting MCEs with pCLE were 91.7% (95% CI, 59.8–99.6), 72.8% (95% CI, 39.3–92.7) and 82.6%, respectively.

Conclusions By assessing MBD in vivo, pCLE allows to predict MCE in IBD patients in clinical and endoscopic remission with very high sensitivity. Therefore, pCLE can be used to effectively time and personalize anti-inflammatory treatment in IBD patients.

**OP232 ENDOSCOPIC DIAGNOSIS OF NON-PEDUNCULATED DYSPLASIA DURING SURVEILLANCE IN THE ULCERATIVE COLITIS: A SURVEY-BASED, MULTINATIONAL STUDY**

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Aims NBI is based on optical filters narrowing the red light therefore highlighting the vascular pattern morphology of the luminal gastrointestinal tract. Assessment of vascular changes in IBD is of pivotal importance for prediction of mucosal healing and for guidance of pharmaceutical therapies. To date, only limited data is available on the use of NBI for assessment of mucosal healing in IBD.

Study objective was to develop a classification system allowing for in vivo assessment of mucosal healing in IBD by using NBI without optical magnification.

**OP233 DEVELOPMENT OF A NEW CLASSIFICATION SYSTEM TO ASSESS MUCOSAL HEALING IN INFLAMMATORY BOWEL DISEASE (IBD) USING NARROW BAND IMAGING (NBI) WITHOUT OPTICAL MAGNIFICATION**

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Aims We aimed to evaluate the accuracy of endoscopic diagnosis for “non-pedunculated” dysplasia or colitic cancer in the ulcerative colitis (UC) patients.

Methods Endoscopic images of 61 histologically confirmed dysplastic or non-dysplastic lesions were retrieved from UC registry database of Asan Medical Center. All lesions were detected during surveillance colonoscopy for the UC patients with 8 years or longer duration or with primary sclerosing cholangitis. The selected photos were distributed to the study participants (endoscopists) with 2 questionnaires: one for the endoscopist’s experience and the other for endoscopic diagnosis of the photos.

Results Ten staff endoscopists in the academic centers of 4 countries (Australia, Korea, Japan, and US) participated in this survey. The interobserver agreement on the intention to take biopsy was poor, given that its Fleiss’ generalized kappa was 0.169. The sensitivity, specificity, positive predictive value (PPV), negative predictive value (NPV), and accuracy of the endoscopist’s intention to take biopsies for target lesions were 88.2%, 34.8%, 63.0%, 70.2%, and 64.6%, respectively. When limited to the high confident assessment, the sensitivity, specificity, PPV, NPV, and accuracy were 93.0%, 40.9%, 82.1%, 66.7%, and 79.7%, respectively. Experienced endoscopists were less specific in the endoscopic prediction for dysplasia than the less-experienced endoscopists. There was no difference in the sensitivity and specificity between Western and Asian endoscopists. Of three endoscopic characteristics of the target-biopsied lesions, including ulceration, distinctness of the borders, and pit patterns, neoplastic pit patterns (Kudo type III-V) were significantly predictive for dysplasia (Odds ratio = 3.710, 95% CI 2.001–6.881). The diagnostic sensitivity, specificity, and accuracy of neoplastic pit patterns were 68.2%, 63.3%, and 66.1%, respectively.

Conclusions The diagnostic performance of the endoscopist’s intention to take biopsies for non-pedunculate dysplasia or colitic cancer in the ulcerative colitis (UC) patients.

**OP234 RESTORATIVE SURGERY FOR PERSISTENT FISTULOUS DISEASE IN INFLAMMATORY BOWEL DISEASES**

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Aims We aimed to evaluate the accuracy of endoscopic diagnosis for “non-pedunculated” dysplasia or colitic cancer in the ulcerative colitis (UC) patients.
Methods Consecutive patients with IBD underwent colonoscopy with high-definition endoscopes and NBI without optical magnification. The mucosal vascular and surface pattern morphology was recorded followed by targeted biopsies for subsequent histopathological diagnosis. Based on these findings a simplified classification was developed allowing for histologic prediction of the disease.

Results A simple classification system for assessment of mucosal healing by using NBI was developed. The classification system consists of 2 different parameters for the surface pattern morphology and 2 different parameters for the vascular pattern morphology. Sensitivity and specificity of the new classification for prediction of mucosal healing were calculated as 90% and 93%, respectively. Accuracy was calculated as 93% with positive and negative predictive values of 93% and 90%, respectively.

Conclusions We have proposed a new and simple classification system for in vivo assessment of mucosal healing in IBD with the NBI technology. The classification system allowed for adequate in vivo assessment of mucosal healing and might therefore be used for guidance of disease specific outcomes.

Friday, April 5, 2019 17:00 – 18:30
Motility 1 Forum

OP234 RISK OF MICROBIAL TRANSLOCATION IN PER-ORAL ENDOSCOPIC MYOTOMY (POEM) FOR ACHALASIA: ANTIBIOTIC PROPHYLAXIS OR SHORT-THERAPY? AN INTERIM ANALYSIS OF A PROSPECTIVE RANDOMIZED CLINICAL TRAIL

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Aims Microbial translocation (MT) is the passage of viable/nonviable microbes across the GI-barrier. Presence of Lipopolysaccharide (LPS) of Gram-negatives and LPS-binding protein (LBP) in the plasma correlates to sepsis/septic shock through the activation of inflammation (IN) via soluble-CD 14 (sCD 14) and LPS-binding protein (LBP) in the plasma correlates to sepsis/septic shock. Presence of Lipopolysaccharide (LPS) of Gram-negatives and LPS-binding protein (LBP) in the plasma correlates to sepsis/septic shock through the activation of inflammation (IN) via soluble-CD 14 (sCD 14) and consequent cytokines production (IL-6, IL-1b, TNF-α). Considering POEM a clean-contaminated procedure it should be assessed whether the post-POEM fever/inflammation is cytokine-mediated or infection-related. Aim of the study was to evaluate markers of MT, IN and bacteremia post POEM.

Methods Consecutive POEM patients since June 2016 were enrolled and randomized in two groups: Group-A (antibiotics only before procedure) and Group-B (antibiotics before POEM, continued for 24 h and then orally for 3 days). At planned timing (T0, T1, T2: before, after and 24 h after POEM, respectively) we evaluated plasma dosage of: IL-6, IL-1β, TNF-α (IN) and sCD14, LBP (MT). Blood cultures (BC) and body temperature (BT) were collected at T0-T1-T2, C-reactive Protein (CRP) was evaluated at T0 and T2.

Results The first 73 patients (age 56.15 ± 16.2 years, M/F 37/36) did not experience a significant post-operative fever, except for 4 patients, 2 in each group. However both groups showed a significant increasing CRP, LBP, IL-6 and IL-1β at T2 compared to T0. At T2 Group-A subjects had higher values of LBP whereas the other markers did not show any difference between groups (Table 1). A total of 6 patients had positive BCs, 4 at T0 of which only 1 also positive at T1, and 2 at T1, negative at T2. All BCs were negative at T2.

Conclusions In our preliminary results the increasing observed levels of inflammation as well as of markers of MT after POEM might suggest MT as a possible mechanism of inflammation activation. The presence of post-operative IN and MT resulted to be independent from the type of administered antimicrobials.

OP235 PERORAL ENDOSCOPIC MYOTOMY FOR ESOPHAGEAL ACHALASIA: OUTCOMES OF THE FIRST 500 PATIENTS WITH A MID- AND LONG-TERM FOLLOW-UP

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Aims Peroral endoscopic myotomy (POEM), which combines the efficacy of surgical myotomy with the benefits of an endoscopic, minimally invasive, procedure, is considered now an effective treatment for achalasia. We report on the mid- and long-term outcomes of a large series of patients treated in a single European center.

Methods The first 500 adult patients successfully treated between May 2011 and January 2018 were retrospectively identified from a prospective database, and included in this study. Demographics, clinical, procedural and follow-up data were collected and analysed.

Results Mean age of patients was 51 years (18–85); the 50.1% were male. Treatment naïve patients were 79.4%; 14.4% had undergone pneumonatic dilation, 2.6% botulin toxin injection, 3.6% Heller-Dor. The 16.6% of patients had a type-I achalasia, 57.2% type-II, 13.8% type-III, 1.2% jackhammer esophagus, 0.8% distal esophageal spasm; in 10.4% patients achalasia type was not adequately classified. Mean symptoms duration before POEM was 24 ± 64.1 months. Mean operative time was 62.6’ (19 – 180 minutes). Mild complications occurred in 5 patients (1%) and were managed conservatively. A mean 23.7 months (3 – 60 months) follow-up was available for 96.7% of patients. Clinical success was documented in 98% of patients, and was 96%, 96%, and 86.4% after 6, 24 and 60 months respectively. Thirty patients with failure underwent pneumodilation with success, 4 have persisting symptomatic improvement, 3 underwent surgery. Success was 97.5% in achalasia-patients and 81.8% in those with spastic motility disorders (p < 0.05). An altered esophageal pH-study was diagnosed in 31.2% of patients; esophagitis-rate was 27.7% (86.9% grade A/B; 13.1% grade C/D). At the date of the last follow-up, 34.6% of patients receive daily PPI for GERD. Conclusions Our results confirm the efficacy of POEM in a large cohort of patients, with an adequate follow-up. Benefits of POEM seem durable, with and acceptable incidence and severity of iatrogenic GERD.

OP236 PERIPROCEDURAL SAFETY PROFILE OF PERORAL ENDOSCOPIC MYOTOMY (POEM)

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DOI 10.1055/s-0039-1681412

Aims POEM has become a standard treatment for achalasia due to its efficacy and safety. Nevertheless, POEM remains an invasive intervention carrying risk of complications. The aim was to assess the perioperative complications of patients undergoing POEM at our institution.

Methods We retrospectively reviewed the documentation of patients who underwent POEM 12/2012 – 5/2018 and searched for periprocedural compli-
cations. The Clavien-Dindo (C-D) classification was used to assess the severity of adverse events.

**Results** 243 POEM procedures in 231 patients were performed. 50/243 procedures (20.6%) passed uneventfully, in 193 procedures (79.4%) some adverse events occurred. The distribution in C-D categories was as follows: I-180 (180/243, 93.3%), II-2 (1%), IIIa-3 (1.6%), IIIb-6 (3.1%), IVa-1 (0.5%), and V-1 (0.5%). The periprocedural adverse events were: subcutaneous emphysema 79/243 (32.5%), capnoperitoneum puncture 141/243 (58%), allergic reaction to antibiotics 2/243 (0.8%) and anesthesia-related complications in 14/243 (5.8%) patients. Postoperatively, 158/243 patients (65%) experienced pain requiring analgesics, 20/243 patients (8.2%) had fever. In 5/243 patients (2%) the postoperative esophagogram revealed leakage. Severe adverse events (CD IV-V) occurred in 8/243 (3.3%) patients: 3x (1.2%) pneumonia, 2x (0.8%) pneumothorax, 1x (0.4%) fluidothorax, 1x (0.4%) lost of taste and smell, 1x (1.2%) pericardial effusion, 2x (0.8%) pleural effusion, and 1x (0.8%) myocardial infarction. Median pre-operative Eckardt score was 6 (2–12). Three months after the procedure, the median Eckardt was 1 (0–3). Endoscopic follow-up at 6 months was available for 24 patients and revealed a 30% esophagitis rate.

**Conclusions** POMOD is an easy, inexpensive and reproducible animal model which is effective in training for the POEM procedure.

**OP238 ANTERIOR VERSUS POSTERIOR MYOTOMY DURING POEM FOR THE TREATMENT OF ACHALASIA: SYSTEMATIC REVIEW AND META-ANALYSIS OF RANDOMIZED CLINICAL TRIALS**

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**Aims** The optimal orientation of the myotomy during peroral endoscopic myotomy (POEM) is unknown. This meta-analysis aims to compare anterior and posterior myotomy regarding clinical success and safety.

**Methods** Pubmed, Embase, the Cochrane Library, WOK, and clinicaltrials.gov were searched to identify randomized clinical trials (RCTs) comparing anterior and posterior myotomy during POEM for treatment of achalasia. The primary outcome was clinical success. Secondary outcomes included postprocedural gastroesophageal reflux disease (GERD), adverse events (AEs), manometric findings, and procedure-related parameters. Random-effects models were used for the primary analysis.

**Results** A total of four RCTs enrolling 488 patients were included. Overall clinical success 3–12 months after POEM was 97% (95% confidence interval [CI] 93%–100%) and did not differ between anterior and posterior myotomy (Relative risk [RR] 0.98, 95% CI: 0.96–1.01; I2: 0%). Incidence of GERD after POEM based on 24-hour pH monitoring (RR 0.98, 95% CI: 0.75–1.28), endoscopy (RR 1.04, 95% CI: 0.78–1.38), and symptoms (RR 0.89, 95% CI: 0.55–1.42) was similar. Posterior myotomy was associated with fewer AEs (RR 0.63, 95% CI: 0.42–0.94), lower risk of mucosotomy (RR 0.42, 95% CI: 0.27–0.66) and shorter incision closure time (Mean difference: -2.28 minutes, 95% CI: -3.46 to -1.10). Anterior myotomy was associated with a shorter length of hospitalization (Mean difference: 3.02 days, 95% CI: -0.57). Although the clinical relevance of this finding is negligible. No significant differences were found regarding manometric outcomes, total operation and myotomy time.

**Conclusions** Anterior and posterior myotomy are equally effective for the treatment of achalasia, without significant differences in postprocedural GERD. Posterior POEM was associated with fewer AEs and shorter incision closure time.

**OP239 PERORAL ENDOSCOPIC MYOTOMY (POEM) FOR ACHALASIA: A EUROPEAN MULTICENTER SURVEY ABOUT CLINICAL PRACTICE**

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Endoscopy 2019; 51: S1–S273
REALIZATION OF ENDOSCOPIC ORAL MYOTOMY FOR CONDITIONING MODALITIES DURING THE REALIZATION OF ENDOSCOPIC ORAL MYOTOMY FOR ESOPHAGEAL MOTOR DISORDERS

OP241 PERCUTANEOUS ENDOSCOPIC GASTROSTOMY (PEG) TUBE HOME REPLACEMENT – PROSPECTIVE EVALUATION OF A STANDARDIZED PROTOCOL

OP240 IMPACT OF ANTIBIOTIC PROPHYLAXIS AND CONDITIONING MODALITIES DURING THE REALIZATION OF ENDOSCOPIC ORAL MYOTOMY FOR ESOPHAGEAL MOTOR DISORDERS

S84
OP242 RADIALLYLY VS ENDOSCOPICALLY-PLACED GASTROSTOMY FEEDING TUBES: AN AUDIT OF CURRENT PRACTICE AND CLINICAL OUTCOMES IN A LARGE, MULTI-SITE UK NHS TRUST

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Aims The optimum method for gastrostomy tube placement is unclear. A Cochrane review found insufficient evidence to promote either percutaneous endoscopic gastrostomy (PEG) or radiologically inserted gastrostomy (RIG). Here, we audit practice and clinical outcomes for gastrostomies across our three acute hospitals.

Methods We searched the electronic medical record for patients undergoing their first attempted PEG or RIG insertion between 01/01/17 and 31/12/17. Indications, procedure details and 30-day complications were identified retrospectively. Summary statistics, group comparisons (chi-squared test) and multivariate logistic regression were calculated in Stata 14.4.

Results 155 patients were identified; most had RIGs (85.2%). The median age was 64, and 5.8% had dementia; median pre-procedure CRP was 11.6 mg/L. The most common indications were unspecified dysphagia (45.2%), head or neck cancer (36.8%), and stroke (12.3%). 40.2% RIG patients had no documented contraindication to PEG. Patients seen by a nutrition specialist were significantly more likely to have a PEG (23.2% vs. 1.7%, p < 0.001).

Tab. 1 30-day complications after gastrostomy insertion

<table>
<thead>
<tr>
<th>Complication</th>
<th>Total cohort</th>
<th>PEG</th>
<th>RIG</th>
<th>P value (chi-square test)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aspiration pneumonia</td>
<td>22.6% (35/155)</td>
<td>17.4% (4/23)</td>
<td>23.5% (31/132)</td>
<td>0.52</td>
</tr>
<tr>
<td>Tube blockage or displacement</td>
<td>10.3% (16/155)</td>
<td>4.4% (1/23)</td>
<td>11.4% (15/132)</td>
<td>0.31</td>
</tr>
<tr>
<td>Procedure-related readmission</td>
<td>5.2% (8/155)</td>
<td>4.4% (1/23)</td>
<td>5.3% (7/132)</td>
<td>0.85</td>
</tr>
<tr>
<td>Death</td>
<td>5.2% (8/155)</td>
<td>4.4% (1/23)</td>
<td>5.3% (7/132)</td>
<td>0.85</td>
</tr>
</tbody>
</table>

30-day complication rates are shown in Table 1. Peri-procedural hypoxia was more common with PEG (13.0% vs. 1.5%, p = 0.004). In a multivariate model accounting for age and CRP, tube type was not significantly associated with any complication. Higher CRP was associated with an increased risk of post-procedure bleeding (OR 1.04, p = 0.02).

Conclusions In this cohort, 30-day complications were very common. Peri-procedural hypoxia was more common with PEG, but aspiration pneumonia and tube displacement may have been more common with RIG. A randomised trial would better establish benchmark quality metrics, to be implemented by nutrition teams for optimal tube selection.

OP243 BURIED BUMPER SYNDROME – MANAGEMENT BASED ON ACCURATE STAGING

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Aims evaluation of our previously published new classification of buried bumper syndrome (BBS) severity on large retrospective patient cohort.

Methods single tertiary centre retrospective cohort study.

Results 81 cases of BBS in 72 patients were identified out of 2,024 PEG procedures performed from 1st January 2002 until 31st October 2018 at our endoscopy unit. The cohort consisted of 52 males and 20 females, 12–91 years-old (median 65). Excluding 15 cases of PEG introduced elsewhere, incidence of BBS was 3.3% in our unit. Time from insertion until the diagnosis of BBS varied from 2 weeks to more than 6 years (mean 17 months). Dominant symptoms of BBS were as follows: peristomal leakage (19), blocked tube (18), accidental finding during attempt to removal (16), endoscopy for other reasons (10), impossibility of tube rotation and movement (15), gastro-colonic fistula (2). Distribution of severity according to the new classification was: Grade 1 (ulcer below the internal bumper and/or marginal overgrowth) 11 cases, Grade 2 (bumper overgrown, but still partially visible) 26 cases (32%), Grade 3 (completely covered bumper inside the stomach) 27 cases (33%), Grade 4 (completely covered bumper outside the stomach) 14 cases, Grade 5 (bumper at the level of skin) 3 cases. Therapeutic outcomes: Grade 1 was treated by simple repositioning and BBS preventive measures were enforced. Grade 2 and 3 were treated by endoscopy with dissection of the overgrowing tissue needed only for Grade 3. Endoscopic dissection using only a papillotome through the cannula was significantly faster (11 ± 9 min) than other dissection procedures (64 ± 47 min, p < 0.001). Endotheraphy was ineffective and seriously complicated by peritonitis in one case. Grade 4 needed surgical treatment under general anaesthesia.

Conclusions Endoscopic therapy of BBS based on the new classification is effective with a low complication rate.


OP244 THE UAB RAPTOR METHOD FACILITATES DIRECT PERCUTANEOUS ENDOSCOPIC GASTROSTOMY WITH JEJUNAL EXTENSION TUBE PLACEMENT (WITH VIDEO)

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Aims Direct percutaneous endoscopic gastrostomy with jejunal extension tube (PEG-J) is a useful method to provide nutrition to patients with a variety of gastrointestinal (GI) problems. The present study describes a novel and simple method of direct percutaneous endoscopic gastrostomy with jejunal extension tube placement.

Methods This observational, retrospective, single-arm, open label case study conducted at a tertiary care hospital during a 24-month period included 17 patients (9 females, 8 males, mean age 56 years, age range 28–79 years) with necrotizing pancreatitis, n = 5; gastroparesis, n = 6; complex upper GI surgery, n = 3; complex fistula, n = 3; recurrent aspiration pneumonia, n = 1. The direct percutaneous endoscopic gastrostomy with jejunal extension tube placement technique focuses on three key components: (i) insertion of the PEG, (ii) through-the-PEG jejunal extension tube, and (iii) use of an extra long foreign body extraction forceps (Raptor, US Endoscopy, Ohio, USA) to advance the jejunal extension into the jejunum, (iv) exchange technique of pulling the scope back into the stomach while pushing (i.e.) keeping the Raptor forceps holding the jejunal tube place in the jejunum, and (v) once the scope is in the stomach removing the Raptor forceps. If during removal fo the forceps there is a slight pull or misplacement of the jejunal tube, the wide grasping prongs of the forceps could be easily used to grab the body of the tube and push it deeper into the jejunum.

Results Technical success was 100%. Mean time of the procedure was 18 min (range 15to 30 min). Clinical success was 100% (17/17); all PEG-J could be used for feeding purposes. There were no major adverse events.

Conclusions This novel method of inserting a PEG-J tube was safe and successful. Future comparative studies are now warranted.
OP245 PERCUTANEOUS ENDOCOSCOPIC GASTROSTOMY IN HEAD AND NECK CANCER PATIENTS: PREDICTORS OF 30-DAY COMPLICATIONS AND MORTALITY

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Aims Chemoradiotherapy is essential in the management of head and neck cancer (HNC) patients. Malnutrition during treatment is a major concern and maintaining an enteral feeding route is critical with percutaneous endoscopic gastrostomy (PEG) placement being an option. We intended to elucidate predictors of 30-day complications and mortality during follow-up of HNC patients undergoing PEG.

Methods Prospective cohort study of HNC patients with PEG placement, by pull method, in 2017 with a minimum 6-month follow-up. Evaluation of patients' characteristics, comorbidities, nutritional status over time, complications and death. Statistical analysis included descriptive statistics, Qu² test and multivariable regression.

Results Fifty patients, 90% male and mean age of 60 years (± 10). Mean PEG time 7 months (±0.6). Mainly pharyngeal tumor 48% (n = 24) and advanced TNM stage in 80% (n = 40). ASA ≥ 4 in 22% (n = 11). Initial median IMC was 20 Kg/m² (±3), with 28% of patients presenting an IMC < 18. Registered leukocytosis (40%), anemia (36%) and low albumin (18%) as main analytical abnormalities. Most frequent comorbidity was active smoking (66%). PEG placement before starting oncological treatment in 42%.

Twelve complications (24%) at day 30, mostly respiratory infections (n = 6), with 4 fatalities (8%) but all unrelated to the PEG placement (disease progression).

Most patients managed to maintain weight during follow-up, although with a mean decrease in IMC of 0.42Kg/m².

Unvariable analysis revealed leukocytosis (p < 0.01), ASA ≥ 4 (p = 0.03) and high CRP (p = 0.05) as major risk factors for 30-day complications. On multivariable analysis leukocytosis was the only risk factor for complications (OR 6, IC 95% 2 – 21); Mortality at day 30 only significant related with ASA ≥ 4 (OR 13, IC 95% 1.2 – 172).

Conclusions PEG placement is relatively safe and feasible in HNC patients with satisfactory results at day 30 and 6 months follow up. Leukocytosis and ASA ≥ 4 are related with worst outcomes. Standardized follow up and multidisciplinary approach are need in this group of patients.

OP246 THE Efficacy OF CARBON DIOXIDE INSUFFLATION FOR PERCUTANEOUS ENDOCOSCOPIC GASTROSTOMY PLACEMENT

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Aims We aimed to assess the effects of CO2 insufflation with percutaneous endoscopic gastrostomy (PEG) insertion compared of room air.

Methods This study was a single center, prospective, randomized, double-blind study in Gachon University Gil Medical Center between June 2016 and November 2018. A total of 34 patients were enrolled. The primary outcome was pneumoperitoneum which was detected by the right decubitus X-ray. The secondary outcomes were abdominal distension and pain after PEG insertion, amount of sedatives and complication rates.

Results The baseline characteristics were similar between the two groups. The pneumoperitoneum was developed 0% (0/16) in CO2 group and 16.7% (3/18) in room air group, which was not statistically different. (P value = 0.230) There were no significant differences in abdominal distension and pain after PEG insertion, and amount of sedative between two groups.

The complication such as oozing of PEG site and leakage of gastric juice not occur in CO2 groups, but occurred 16.7%(3/18) and 5.6%(1/18) in room air group, which were not statistically significant.

Conclusions CO2 insufflation during PEG insertion has tendency to lower certain adverse events such as pneumoperitoneum, although not statistically significant. There were no significant differences in the clinical features and factors related procedure between CO2 group and room air group. It might be related to the small patient number. Further large study would be needed to clarify this issue.

OP247 BURIED BUMPER SYNDROME – RISK FACTORS AND TREATMENT

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Aims The aim of study was to evaluate risk factors for complications of PEG, resp. buried bumper syndrome, and methods of its treatment.

Methods The number of patients with buried bumpers syndrome (BBS) were counted in Center for PEG Thomayer’s Hospital Prague, that takes care of patients with PEG complications between 2002 and 2018. Buried bumper syndrome (BBS) is the late complication of PEG. Method of choice for treatment is opening of cavity with inner bumper using Flamingo knife introduced through PEG tube and extraction of PEG.

Results Since 2002 to 2018 there were introduced 1587 PEGs and PEJs in 1526 patients, in 54 of them there was found buried bumper syndrome (3,4%). Since 2002 to 2016 42 patients with BBS were examined, (31 men, 11 women, aver. age 69,3 y, 2 – 86 y), 35 were successfully resolved during gastroscopy (8 patients using needle knife or papilotomy devices, the average time for resolving 18 minutes), 7 patients were indicated for surgical treatment. Since end of 2016 we started to use Flamingo knife. Since 2016 to 2018 12 patients with BBS were examined (8 men, 4 women, aver. age 72.1 years 35 – 88 years). In 8 patients Flamingo knife was used, the average time for extraction of PEG was 8 minutes (5 – 38 minutes). No surgical treatment was needed in last 2 years.

The main risk factors are incorrect care after PEG, esp. irregular or missing introduction of PEG tube into the stomach (minimally once in the week) and high pressure on inner bumper.

Conclusions The buried bumper syndrome is the late complication of percutaneous endoscopic gastrostomy. The main risk factor is incorrect care after PEG tube. The treatment of choice in patients with complete buried bumper syndrome is treatment using Flamingo knife with decreasing of surgical extractions for this diagnose.

Friday, April 5, 2019 17:00 – 18:30
Video ERCP 3
South Hall 1B

OP248V PERCUTANEOUS TRANSHEPATIC CHOLANGIOSCOPIC RESECTION OF AN DISTALBILE DUCT ADENOMA IN ESD TECHNIQUE

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An 80 year old patient was referred for acute cholangitis. A 2 × 1.5 cm lesion suspect of a distal bile duct stone was detected in US and ERCP. However, the lesion was fixed to the bile duct wall. EUS and biopsy revealed a distal biliary adenoma. The patient refused surgery but agreed to an experimental approach. A percutaneous stable fistula tract was created and dilated over 2 weeks until 20°. A sterilized therapeutic bronchoscope was used and the
tumor located at the level of the distal common bile duct. Successful needle knife excision and transpapillary expulsion of the tumor was achieved after prior EPT. A percutaneous transhepatic drainage was temporarily placed. There was fortunately no acute bleeding or perforation but the tumor specimen was lost to the small intestine. The patient recovered completely but died three years later due to a local recurrence.

**OP249 V AN UNEXPECTED CAUSE OF CHOLANGITIS**

**Authors** Fernandes J1,2, Lucas F3, Moreira M1, Ribeiro H1, Giitas S1, Araújo T1, Ramada J1, Certo M3, Canena J3,6, Lopes 1,3,7,8

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**DOI** 10.1055/s-0039-1681427

A 58-years-old woman, with priers of Parkinson disease, type 2 Diabetes Mellitus and arterial hypertension, was diagnosed with a perihilar cholangiocarcinoma (Bismuth Type 1). She initially underwent endoscopic retrograde cholangiopancreatography (ERCP) with brush cytology and stent placement in the right hepatic duct. She was proposed for resection surgery but due to imagological evidence of portal vein and right hepatic artery invasion and disease progression with involvement of the right and left hepatic duct (Bismuth Type 4), after multidisciplinary discussion, she was proposed for palliative care. Due to progressive worsening jaundice and cholestasis, it was decided to repeat ERCP. After removal of the previously placed plastic stent, cholangioscopy (SpyGlass DS, Boston Scientific) was performed. This exam confirmed the presence of a hepatic confluence stenosis, with neovascularization and involvement of the right and left hepatic duct. The length of the stenosis was approximately 5 cm. Endobiliary radiofrequency ablation (RFA; Habib catheter, Boston Scientific) was performed on two levels, initially on a proximal level, for full-extent treatment of the lesion. Cholangioscopy was repeated for treatment evaluation and exclusion of complications. On the examination we observed an increase in the luminal diameter and apparent necrosis at the level of the lesion. An uncovered self-expandable metal stent (10 cm) was placed in the left hepatic duct. The procedure underwent without complications and the patient was discharged home. She was evaluated one month later in the outpatient clinic and is asymptomatic. Blood test revealed complete normalization of total bilirubin and cholestasis. Some studies previously reported an improvement in stent patency and even survival after RFA of biliary tumors. This case highlights the role of this technique as a feasible and safe therapeutic option for the palliation of hilar cholangiocarcinoma.
OP252V  USEFULNESS OF DEDICATED FORCEPS FOR DIGITAL SINGLE-OPERATOR CHOLANGIOSCOPY FOR THE TREATMENT OF INFLAMMATORY BILARY STRICURE

Authors  Soriani P1, Gabbani T1, Deiana S1, Mirante VG1, Manno M1
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Endoscopic treatment of biliary strictures is challenging; moreover, if stenosis is almost complete, dilation can fail for inability to pass over a guidewire dilation devices or stent [1].

Cholangioscopy can be useful in order to overcome these limits, thanks to direct visualization of the stricture. A 52-year-old woman affected by antiphospholipid syndrome underwent endoscopic retrograde cholangiography for recurrent cholangitis due to hepatolithiasis for secondary hemolytic anemia. For inability to pass the guidewire over the stenosis, digital single-operator cholangioscopy (SpyGlass DS, Boston Scientific) was performed for selectively placement of guidewire. An intrahepatic right biliary stricture was observed, with a residual lumen of about 2 mm. A fibrotic ring allowed the guidewire pass only (Dreamwire 0.035, Boston Scientific), but not devices for dilation, i.e. balloon or Soehendra dilators. So, it was excised with dedicated forceps (Spybite, Boston Scientific), allowing subsequent pumatic dilation and spontaneous spillage of multiple micro-gallstones [video]. Plastic stent was placed for 2 months, obtaining stricture’s resolution at cholangioscopic control. Histological biopsies confirmed the benign nature and elective cholecystectomy was performed. The patient remained in good clinical condition with no more cholangitis episodes.

In conclusion, dedicated cholangioscopic forceps can be a useful tool to cutting out fibrotic ring in biliary strictures, allowing subsequent endoscopic treatment, avoiding major surgery (in this case right hepatectomy), especially in high-risk patients.


OP253V  SPYGLASS PANCREATOSCOPY FOR DIAGNOSIS, EVALUATION AND STAGING OF MAIN DUCT INTRADUCTAL PAPILLARY MUCINOUS NEOPLASM

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An 84-year-old man, with prior of arterial hypertension and aortic stenosis underwent an abdominal computed tomography due to occasional symptoms of abdominal pain. This exam revealed a hypodense non-enhanced lesion in the head and neck of the pancreas, with 65 × 37 × 46 mm. This lesion was in continuity with the ampulla of Vater and conditioned a diffuse main pancreatic duct (MPD) dilation (12 mm in the body), in probable relation with a main duct intraductal papillary mucinous neoplasm (MD-IPMN). An endoscopic ultrasonography was performed and confirmed the presence of a multiseptated predominantly cystic mass in the head/neck of the pancreas, with hyperechoic material in the center compatible with mucin. After multidisciplinary the patient was proposed for surgery with prior pancreatoscopy to evaluate directly the MPD to help guide the type of surgery. Pancreatoscopy was performed using a peroral digital single-operator pancreatoscopy system (SpyGlass DS; Boston Scientific, Marlborough, Massachusetts, USA). On inspection a “fish mouth” ampulla was observed. After MPD cannulation with sphincterotomy, contrast instillation revealed marked MPD dilation. Pancreatoscopy revealed a scar appearance with friability in the pancreatic tail and body. In the neck and head we observed presence of mucin, papillary fronds and protusions with “fish-egg” appearance. Biopsies were performed in all MPD segments and revealed in the head and neck lesion with papillary architecture and intestinal phenotype, compatible with intraductal papillary mucinous neoplasm with low-grade dysplasia. No lesions were observed in the biopsies performed in the body and tail. The patient was submitted to a subtotal duodenopancreatectomy. Histopathological specimen examination confirmed the findings previously reported and the associated presence of ductal adenocarcinoma (pT1bN0R0).

This case demonstrates the role of pancreatoscopy to help delineate the extent of MD-IPMN and detect skip lesions in the presence of a diffusely dilated main PD, guiding the choice of surgical procedure.

Friday, April 5, 2019  17:00 – 18:30
Video lower GI 2  South Hall 1A

OP254V  SUCCESSFUL CLOSURE OF A RECTAL FISTULA OF CROHN’S DISEASE USING ENDOSCOPIC SUBMUCOSAL DISSECTION OF THE FISTULOUS TRACT COMBINED WITH AN OVER THE SCOPE CLIP

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Aims Luminal fistulas of Crohn’s disease represent a therapeutic challenge, with frequent use of surgery despite the advent of biologics. There is no reported case of effective endoscopic treatment in the literature. Submucosal dissection of the fistulous orifice combined with clip closure has been described as effective for two cases of chronic oeso-tracheal fistulas and one case of fistula on rectal anastomosis. We report the first success of this technique, to treat a refractory rectal fistula of Crohn’s disease.

Methods A 35-year-old woman was referred for Crohn’s disease with ileal fistula, pre-sacral and left gluteal abscess and sacral osteitis. Initial management consisted of ileoceleal resection with ileostomy, prolonged antibiotic therapy and percutaneous radiological drainage. After 4 months, colonoscopy showed a rectal fistulous orifice. MRI showed a 25 mm long fistulous tract, responsible for the persistence of pre-sacral infiltration. The rectal mucosa was otherwise non-inflammatory. Stoma reversal was contraindicated with little surgical solution because of the location of the fistula. We performed endoscopic submucosal dissection (ESD) of a mucosal patch surrounding the fistulous orifice (10 mm in diameter), using Hybrid Knife T (ERBE, Germany). To allow deep dissection of the entire fistulous tract we used a clip + line system. The exposed area was closed using an over-the-scope clip (OTSC) system (Ovesco, Germany). The ciprofloxacin + metronidazole antibiotic treatment was continued for 21 days.

Results The CT scan with rectal opacification 2 months later showed a complete regression of the collection and the absence of residual fistula tract allowing stoma reversal. The last clinical follow-up after 6 months confirmed complete resolution of rectal fistula.

Conclusions ESD of the fistulous tract associated with OTSC system closure seems effective for small chronic fistulas and could possibly also be used in fistulizing Crohn’s disease. Prospective studies are needed to confirm this strategy.
OP256V  ESD OF LST-NG TYPE WITH UNDERLYING SUBMUCOSAL TUMOR
Authors Herrero de Tejada A1, De Frutos D1, Santiago J1, Vazquez G2, Gonzalez-Partida I1, Agudo B1, Gonzalez-Haba M1, Garrido A1, Matallanos P1, Blazquez E1, Bote M1, Sol Delgado M1, Pilar G1, Calleja JL1
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Introduction Colonic lipomas are benign submucosal lesions which exceptionally may associate with colonic neoplasia or adenoma. LST-NG pseudo-depressed type over 2 cm commonly require en-bloc resection with ESD or other alternative techniques.
Procedure A 69 y/o woman was diagnosed with an 40 mm LST-NG PD in ascending colon with no apparent associated lesions, and thus scheduled for ESD. Initial approach to the lesion showed a sessile pseudo-depressed area in proximal section of the lesion. Colonic diverticulum was ruled out after submucosal injection, and ESD was initiated. A pediatric colonoscope (PCF-H190L; Olympus Co.) and Flush Knife6 BT 1.5 mm (Fujifilm Co.) were used.
Results A complete en-bloc resection of the LST-NG lesion together with underlying submucosal yellowish tumor was achieved in a single specimen of 60 × 40 mm. Preventive closure of the mucosal defect was completed using TTSS clips. The patient was discharged 48 h later. Pathology examination showed 40 × 31 mm tubular adenoma with free lateral and deep margins (R0), including an underlying 20 × 15 mm lipoma.
Conclusions Underlying lipoma in LST lesions may not be noticed, or it can mimic a diverticulum. Although this circumstance makes ESD more demanding, this technique allows safe and successful en-bloc removal of such complex lesions.

OP257V  COUNTER TRACTION USING CLIPS AND RUBBER BANDING FOR ENDOSCOPIC SUBMUCOSAL DISSECTION OF A LATERALLY SPREADING TUMOR INVOLVING A DIVERTICULUM IN THE COLON
Authors Albouys J1, Legros R1, Charissoux A1, Dahan M1, Sautereau D1, Pioche M1, Jacques J3
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In addition to the possibility of en bloc resection without size limitations, endoscopic submucosal dissection (ESD) is also a novel option for endoscopic treatment of lesions involving a diverticulum in the colon or appendix. Generally, when employing EMR, these types of lesions have a high risk of perforation or incomplete resection.
Here, we report a case of a laterally spreading tumor (LST) involving a colonic diverticulum that underwent successful en bloc resection by ESD using counter traction with clips and rubber banding. A man in his 60s was referred for resection of a 40 mm LST in the ascending colon. The lesion was confirmed as a granular LST with a regular vascular and pit pattern in NBI but also involvement of a centrally located diverticulum, all of which were indications for ESD. After the initial needle injection, ESD was initiated from the anal side using the Dual Knife J dosed with glycerol. We used counter traction with clips and rubber bands to allow better exposure of the submucosal layer as described previously. Once the endoscope approached the diverticulum, a second traction using two clips and another rubber band was positioned to allow a maximal increase in the submucosal space on the side of the diverticulum.
Finally, en bloc resection was completed in 50 minutes, and the diverticulum was closed to prevent delayed perforation. Pathological analysis revealed a tubulovillous adenoma with high-grade dysplasia with free deep and lateral margins measuring 52 × 40 mm. Following the ESD procedure, the patient was discharged without complications 24 hours later.

OP257V  “CLIP-BAND CLOSURE” TECHNIQUE FOR COLORECTAL PERFORATION AND LARGE MUCOSAL DEFECTS AFTER COLORECTAL ENDOSCOPIC SUBMUCOSAL DISSECTION
Authors Agudo B1, De Frutos D1, Santiago J1, González I1, González-Haba M1, Garrido A1, Matallanos P1, Bote M1, Blazquez E1, Sol Delgado M1, García P1, Herreros de Tejada A1
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Introduction We describe for the first time the clip-band closure (CBC) technique for successful management of extra-large mucosal defects and perforations associated with colorectal endoscopic submucosal dissection (CR-ESD).
Procedure CBC technique has been described for traction purposes and preventive closure of duodenal defects. It consists on the use of a regular orthodontic rubber band grasped with a through-the-scope clip (TTSC) that is applied to one of the mucosal defect margins. Afterwards, a second TTSC is inserted to grasp the free part of the band and pulling it to deploy the clip in the opposite edge of the mucosal defect, aiming to create tension to effectively approach the mucosal edges, thus facilitating the complete closure of the defect with extra TTSC.
Results We present CBC application to manage a large CR-ESD associated perforation. An 88-year-old patient presented with a 70 × 70 mm LST-G mixed type (0-Ia + IIa) in ascending colon. ESD with en-bloc resection was completed and an extensive area of the muscular layer showed significant disruption. Because of the broad area resected it was not feasible to close it by conventional clipping. We performed four CBC “combos” to achieve apposition of both edges of the mucosal defect, followed by the deployment of extra 30 TTSCs until completing the full closure. The patient was discharged unevent-
OP259V PAEM COMBINED WITH ENDOSCOPIC SUBMUCOSAL HYDRO-DISSECTIO AS A RESCUE THERAPY OF RECTAL FIBROTIC ADENOMA IN ILEORECTAL ANASTOMOSIS: A CASE REPORT

Authors Rodríguez-Sánchez J1, Sánchez Alonso M1, Sánchez García C1, Olmedo Camacho J1

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Methods Bicenter prospective study of all characterization data recorded before ESD for large superficial colorectal lesions. Sensibility (Se) Specificity (Spe) Positive predictive value (PPV) Negative predictive value (NPV) of presence of macro nodules were calculated by logistic regression. ROC curve analysis was performed to estimate the best cutoff point. The clinical data were obtained from all centers involved. The size of the lesions was measured at endoscopic examination using the disposable white plastic ruler (Amscope Medical, CA, USA). A lesion that had been included in a previous study (9) was not considered.

Results A total of 237 lesions were included. 167 (70%) of lesions were LST-G, 45 (19%) LST-NG and 26 (11%) Polyp. 165 (69,6%) were CONECT ILC, 87 SANO IIIA (37%) and 35 (14,8%).

Histological analysis: LGD: 87 (37%); HGD: 72 (30,4%); IM carcinoma: 56 (23,6%); Sm <1000: 14 (6%); sm >1000: 7 (3%) T2: 1 (0,5%).

LST with macro nodule
- Intra mucosal cancer: Sen = 84.4%/Spe = 55.9%/VPP = 50.5%/VPN = 87.1%
- Submucosal cancer: Sen = 100%/Spe = 45.7%/VPP = 14.4%/VPN = 100%
- Paris IIC
- Intra mucosal cancer: Sen = 20.5%/Spe = 88%/VPP = 45.7%/VPN = 69.3%
- Submucosal cancer: Sen = 36.3%/Spe = 87.4%/VPP = 22.8%/VPN = 93%
- Sano IIIA
- Intra mucosal cancer (51.7%): Sen = 58.4%/Spe = 78.5%/VPP = 51.7%/VPN = 78.5%
- Submucosal cancer (19.5%): Sen = 80.9%/Spe = 67.4%/VPP = 19.5%/VPN = 97.3%

CONCEIT IIC
- Intra mucosal cancer: Sen = 93.5%/Spe = 42.1%/VPP = 44.2%/VPN = 93%
- Submucosal cancer: Sen = 100%/Spe = 33.4%/VPP = 13.3%/VPN = 100%.

Conclusions The CONEJECT classification allows to predict with a 100% sensibility the risk of submucosal invasion, requiring an en-bloc resection.

OP261 DIAGNOSE AND DISREGARD POLICY CAN BE IMPLEMENTED IN PATIENTS WITH LYNCH SYNDROME WHEN DONE BY EXPERT COLONOSCOPISTS

Authors Gaviña A1,2, Rivero Sánchez L1,3,4, Arnau C1, Herrero J1, Remedios D1,2, Alvarez V2, Albéndiz E1, Calvo P3, Gordillo J4, Puig I1, López Vicente J5,6, Huerta A1, Lópe-Córón M1, Salces I4, Peñas B1, Parejo S1,2, Vicente J5,6, Gimeno A1, Saperas E1,2, Moreno L1,3,4, Rodríguez de Miguel C1, Díaz M1, Ocaya T1, Moreira L1,3,4, Cuatrecasas M1,2, Carballal S1,3,4, Sánchez A1,3,4, Jung G1,3,4, Ortíz O1, Iach L1,3,4, Balaguer F1,3,4, Pellisé M1,2,3,4

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Aims Several classifications has been developed to predict the risk of submucosal invasion in case of superficial colorectal lesion. We developed the CONEJECT classification that merged all existing classification (Paris, SANO, KUDO, WASP, LST, NICE) in one table to simplify endoscopic characterization.

Methods Bicenter prospective study of all characterization data recorded before ESD for large superficial colorectal lesions. Sensibility (Se) Specificity (Spe) Positive predictive value (PPV) Negative predictive value (NPV) of presence of macro nodules on a LST-G, SANO IIIA, Paris 0-IIC and CONEECT IIC were calculated.

Results 400 colorectal ESD were performed between 01/2017 and 09/2018 at 2 experts centers. 237 lesions with a mean size of 60 mm that had all characterization data (Paris, SANO, KUDO, WASP, LST, NICE, CONEECT) were included. 167 (70%) of lesions were LST-G, 45 (19%) LST-NG and 26 (11%) Polyp. 165 (69,6%) were CONEECT IIC, 87 SANO IIIA (37%) and 35 (14,8%).

Histological analysis: LGD: 87 (37%); HGD: 72 (30,4%); IM carcinoma: 56 (23,6%); Sm <1000: 14 (6%); sm >1000: 7 (3%) T2: 1 (0,5%).

LST with macro nodule
- Intra mucosal cancer: Sen = 84.4%/Spe = 55.9%/VPP = 50.5%/VPN = 87.1%
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- Paris IIC
- Intra mucosal cancer: Sen = 20.5%/Spe = 88%/VPP = 45.7%/VPN = 69.3%
- Submucosal cancer: Sen = 36.3%/Spe = 87.4%/VPP = 22.8%/VPN = 93%
- Sano IIIA
- Intra mucosal cancer (51.7%): Sen = 58.4%/Spe = 78.5%/VPP = 51.7%/VPN = 78.5%
- Submucosal cancer (19.5%): Sen = 80.9%/Spe = 67.4%/VPP = 19.5%/VPN = 97.3%

CONCEIT IIC
- Intra mucosal cancer: Sen = 93.5%/Spe = 42.1%/VPP = 44.2%/VPN = 93%
- Submucosal cancer: Sen = 100%/Spe = 33.4%/VPP = 13.3%/VPN = 100%.

Conclusions The CONEJECT classification allows to predict with a 100% sensibility the risk of submucosal invasion, requiring an en-bloc resection.
**Methods** Secondary analysis of a prospective, multicentre, randomized, controlled and parallel study (Endokynch study; NCT02951390) comparing pan-chromodendoscopy with white-light endoscopy for polyp detection in Lynch syndrome that involved 26 expert endoscopists in 14 centers. Optical diagnosis was performed in real time using NBI and/or chromoendoscopy in all detected polyps. Diagnostic categories were grouped into neoplastic (sessile serrated polyps (SSP) with dysplasia; traditional serrated adenoma (TSA), adenoma; carcinoma) and non-neoplastic (hyperplastic; SSP). Histology based in modified Vienna and WHO classification were used as gold standard.

**Results** 256 patients were included in the study (mean age 47 years (+ 5 SD 14), 60% were women. The frequency of mutations was MLH1 (28.3%), MSH2 (41.4%), MSH6 (22.3%), MTS2 (6.6%) and EPACM (0.8%). A total of 277 polyps (143 adenomas, 18 SSP, 1 TSA and 115 hyperplasia) were detected which included 102 diminutive polyps (≤ 5 mm) in the RS (72 hyperplastic, 3 SSP, 1 TSA, 22 low-grade dysplasia tubular adenomas, 3 high-grade dysplasia tubular adenomas and 1 low-grade tubulovillous adenoma). High confidence optical diagnosis was performed in 82 cases (80.4%) (62 non-neoplastic; 20 neoplastic). Overall accuracy was 96.3% [89.7 – 99.2%]; sensitivity 90% [68.3 – 98.8%]; and specificity 98.4% [91.4 – 99.7%]. Negative and positive predictive value were 96.8% [89.11 – 99.1%], and 94.7% [71.9 – 99.2%] respectively.

**Conclusions** In this large cohort of Lynch syndrome patients, despite over 25% of RS diminutive polyps were neoplastic, optical diagnosis was highly accurate. In expert hands, a diagnose and disregard strategy is safe and provides a decrease of the RS diminutive polyps resection by 70%.

**OP262 THE POLYP-BASED RESECT-AND-DISCARD STRATEGY: A PROSPECTIVE STUDY**

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**DOI** 10.1055/s-0039-1681438

**Aims** Post-polypectomy surveillance intervals are determined taking pathology outcomes into consideration. Study aim was to compare a novel polyp-based resect-and-discard strategy (PBRD) with optical polyp diagnosis and pathology based surveillance interval assignment.

**Methods** The PBRD strategy (Table 1) and optical polyp diagnosis, using the NICE classification with iScan or Optivista imaging, were applied in real time during colonoscopies for small polyps (< 10 mm) in a prospective study. The primary outcome was the agreement in surveillance interval assignment between the polyp-based and the optical diagnosis based resect-and-discard strategies in reference to the pathology-based reference-standard. Secondary outcomes were the overall reduction in required pathology exams with the different strategies, and the proportion of patients that can be provided with surveillance recommendations immediately following the colonoscopy.

**Results** 553 patients (mean age 62, 48% male, 567 small polyps) were enrolled into the study. In applying the PBRD (Table 1), the surveillance interval agreement with pathology was of 90% (95% CI 87 – 92). When applied by the endoscopist immediately after colonoscopy, the agreement was of 81% (95% CI 69 – 76). The optical diagnosis strategy achieved a surveillance interval agreement of 91% (95% CI 89 – 94). With respect to histopathology, the polyp-based approach would save 56% of all histopathology exams, while 69% could be omitted with the optical diagnosis strategy. The polyp-based strategy would provide 84% of patients with immediate surveillance recommendations, while 78% and 46% of patients could be provided with immediate recommendations following the optical and pathology based strategies, respectively.

**Conclusions** The PBRD reaches the 90% PIVI benchmark when applied according to the developed algorithm. However, when used in real time by clinicians, the surveillance interval agreement with pathology is less accurate, mainly because of shorter surveillance intervals deliberately chosen by clinicians. Optical diagnosis using iScan in combination with iScan and Optivista achieved similar results as the polyp-based strategy surpassing the 90% PIVI benchmark.

**OP263 PREDICTIVE RULES FOR OPTICAL DIAGNOSIS OF ≤ 10 MM COLORECTAL POLYP: BASIC VALIDATION**

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**DOI** 10.1055/s-0039-1681439

**Aims** To in vivo predict colorectal polyp histology, the BASIC classification incorporates both morphological and pit/vessel descriptors domains. To define the new BASIC classes for adenomatous and hyperplastic polyps, we analytically assessed the strength of predictions of these descriptors individually and in combination.

**Methods** A video-library consisting of 102±10 mm polyps with white-light (WLI) and blue-light imaging (BLI) still images/videos was reviewed by 7 expert-endoscopists by an user-friendly software application. Each polyp was rated according to the individual descriptors of the three (surface/pit/vessel) domains of the BASIC without (I phase) and with (II phase) a final diagnosis. Adjusted probability for adenomatous/hyperplastic histology and overall accuracy were calculated. By a modified Delphi agreement, the new BASIC classes for adenomatous and hyperplastic histologies were defined, and correspondingly assessed accuracies.

**Results** By pooling 2,175 observations, strength of prediction for adenomatous histology of the two surface descriptors was poor-to-fair (AUC/OR 95% CI for mucus: 0.5/0.2, 0.14 – 0.26; AUC/OR 95% CI for irregular surface: 0.68/6.88, 4.55 – 7.69), while it was stronger for most of pit (AUC/OR 95% CI: features: 0.81/0.13, 0.10 – 0.16; AUC/OR 95% CI: not round pits: 0.87/10.1, 7.6 – 13.4) and vessel (AUC/OR 95% CI for pericryptal vessels 0.87/0.13, 0.01 – 0.19) descriptors. By combining the surface with pit/vessel domains in the multilevel model, a good-to-excellent prediction power was shown (AUC: 0.89; 95% CI: 0.81 – 0.96). After definition of BASIC classes for adenomatous (A) and hyperplastic (H) polyps, endoscopist-based accuracy for high-confidence BI prediction was 90.3% (86.3%-93.2%), and it was superior to both high confidence WL predictions (OR: 1.88, 95% CI: 1.42 – 2.49) and low-confidence BLI (OR 2.33, 95% CI: 1.13 – 4.98) diagnosis.

**Conclusions** Based on analytical quantification in strength of prediction among morphological and pit/vessel descriptors, new BASIC classes for adenomatous and hyperplastic histologies were created with favourable effects on accuracy and confidence level.
OP264 TRADITIONAL SERRATED ADENOMA – SIGNS OF SERRATED AND NONSERRATED TYPES OF COLON POLYPS

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Aims To study the endoscopic and pathological features of traditional serrated adenoma (TSAs) of the colon.

Methods 14 TSA (2.8%) with different grade dysplasia and a single adenocarcinoma focus were identified among 500 polyps of 265 patient's colonoscopies. The key endoscopic and pathological features of the TSAs and IHC studies with CD44, Ki67, Msi-1 and 1-and 3 – claudins antibodies were evaluated.

Results Most of polyps were located in the left colon (9; 64.3%), endoscopically red were red (13; 92.3%), had size 0.3 – 4.5 cm. Macroscopically, 35.7% polyps were flat-elevated 0-ia, 64.3% polyps had protruding type 0-Ib, 0-Isp, 0-Ip, 21.4% cases with pit pattern type II, difficult to differentiate from hyperplastic polyps (HP) and sessile serrated adenomas (SSA); 78.6% – pattern type IV, more typical for adenoma tubular-villous (ATV) and adenoma villous (AV). Immunohistochemically TSA is close to AT/ATV in its properties and fundamentally different from HP/SSA, despite the fact that in current classification they belong to the group of serrated polyps. Statistically significant differences:

- a similar distribution of CD44 (surface) of the AT, ATV, and TSA;
- similar levels of Msi-1 cytoplasmic response in AT, ATV, and TSA;
- similar levels of Claudine-1 and -3 expression in ATV and TSA.

Conclusions Presently exactly endoscopic and morphological criteria of TSA are not indicated. Often TSA corresponds to protruding type polyps, red in color, with microscopic pit pattern type IV. The presence of characteristic ectopic crypts is almost impossible to distinguish from the branching of crypts in any ATV or AV, and there is no consensus on the number of ectopic crypts required for TSA verification. Given the low incidence of TSA, the similarity of endoscopic features and the absence of immunohistochemical differences between TSA and AT/ATV, the feasibility of TSA allocation in a separate classification group is debated and requires further study.

OP265 "RESECT AND DISCARD" STRATEGY FOR DIMINUTIVE COLORECTAL POLYPS

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Aims “Resect and Discard” (RD) strategy is based on optic chromoendoscopy characterization of diminutive polyps (≤5 mm) histology without pathology assessment allowing cost savings in screening colonoscopy. According to ASGE recommendations this strategy could be applied if there is a ≥90% agreement in assignment of postpolypectomy surveillance intervals compared with conventional strategy. Our aim was to assess this strategy feasibility in our centre.

Methods Prospective, observational study of patients submitted to colonoscopy with optic chromoendoscopy during 12 months in one centre. Endoscopic (location, size, NICE classification and degree of confidence in this assessment) and pathological characteristics of polyps were collected. Post-polypectomy surveillance intervals were defined according to ESCE and ASCE/ACG/AGA recommendations. The primary objective was to compare the concordance of surveillance intervals between RD strategy and standard of care. We also compared NICE classification using optic chromoendoscopy and histology for each polyp.

Results 203 colonoscopies with 595 polyps were included: 50% from the descending/sigmoid colon and rectum, with a mean size of 5.2 ± 3.7 mm. According to NICE classification, 47% of polyps were type I and 53% type II. Pathology revealed that 30% were hyperplastic polyps, 64% were adenomas, 2% were sessile serrated lesions and 4% were inflammatory changes. The endoscopic diagnosis using NICE classification for adenomatous histology had an accuracy of 80%, sensibility of 76%, specificity of 87%, positive predictive value of 92% and negative predictive value of 86%. The concordance of surveillance intervals between RD and conventional strategies was 93% according to ESCE guidelines and 84% based on ASGE/ACG/AGA recommendations. The surveillance intervals were longer in 163 (32% with RD strategy (in 22 patients the difference was between 5 – 10 and 10 years) and shorter in 2%.

Conclusions The RD strategy reached the ASGE recommended cut-off of agreement in surveillance intervals based on ESCE guidelines for postpolypectomy surveillance.

OP266 THE POLYP-BASED RESECT-AND-DISCARD STRATEGY

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Aims Current clinical practice assigns post-polypectomy surveillance intervals based on the number, size and histological aspects of polyps. Our goal was to test a novel polyp-based resect and discard model that assigns surveillance intervals for small polyps based only on size and number of polyps.

Methods A post-hoc analysis was performed on patients previously enrolled in a prospective colonoscopy trial. We created a model for polyp-based surveillance interval allocation based on clinical experience for what the most likely pathology-based surveillance interval would be according to certain scenarios. The primary outcome was the surveillance interval agreement of the polyp-based resect and discard strategy compared to histopathology and USMSTF based surveillance intervals. Secondary outcomes were the overall reduction in required pathology exams and the number of surveillance intervals that can be provided immediately to patients before leaving the endoscopy unit. In addition, we conducted a medical chart review to assess current clinical practice of surveillance interval guideline adherence at our institution.

Results 457 patients (mean-age 62.7, 514 small polyps) were enrolled in the study. When using the polyp-based resect and discard model, the assigned surveillance intervals were correct for 89.3% (95% CI: 0.86 – 92) of patients when compared to pathology-based surveillance interval assignment. When using the polyp-based model, 88.8% of patients can be provided with immediate surveillance interval recommendations compared to 47.7 when using the pathology-based surveillance interval allocation. When using the polyp-based model, 61.4% of pathology examinations can be omitted. Medical chart review showed that at our institution 43.8% of patients received surveillance interval recommendations.

Conclusions The polyp-based resect-and-discard strategy reaches an almost 90% agreement compared to pathology-based surveillance interval allocation. This alternative method largely reduces the need for pathology exams, increases the amount of patients that can be provided with immediate surveillance interval recommendations at the time of index colonoscopy and can increase guideline-conform surveillance intervals.
OP267 ARE DIMINUTIVE AND SMALL POLYPS DANGEROUS?

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Aims Small colonic (6 – 9 mm) and diminutive (1 – 5 mm) polyps are frequently found at colonoscopy. Histology remains to this day the gold-standard for the evaluation of polyps despite important histo-pathological inter-observer differences in the distinction between adenomas and hyperplastic polyps. Due to the relatively high prevalence and clinical insignificance of small hyperplastic polyps on the left side of the colon, the cost associated with their removal and pathological study remains unjustified.

Methods The aim of this study was to identify the histological features of diminutive and small polyps in order to verify the safety of strategies proposing to resect only polyps of 10 mm or more. Patients who underwent polypectomy in 2017 were identified through our endoscopy database and those with polyps < 1 cm were enrolled.

Results Two hundred and four patients (117 men and 87 women, sex ratio M/ W = 1.34) were identified. The mean age was 63.57 ± 12.14 years (31 to 90 years). There were 431 polyps of which 239 (55.45%) were diminutive. Sixty-three percent of all polyps were on the left colon and 30.3% (n = 131) were hyperplastic. Eighty percent of the polyps on the right side were hyperplastic versus 37.26% on the left side. This histological difference was statistically significant (p < 0.0001). High grade dysplasia (HGD) was present in 14% of adenomatous polyps and serrated polyps were observed in 11.5% of cases. Adenocarcinoma was found in 3 small polyps on the left side (9 mm) causing a rate of degeneration at 0.69%.

Conclusions These data demonstrate that only a third of the polyps on the left side were hyperplastic, mainly represented by diminutive polyps (< 5 mm). However the pathological findings of small polyps (6 – 9 mm) are not reassuring proving that polypectomy remains well justified.

OP268 A CRITICAL EVALUATION OF THE HAZEWINKEL CRITERIA FOR THE OPTICAL DIAGNOSIS OF SESSE SERRATED LESIONS (SSL) AT THE BEGINNING OF A LEARNING PROCESS

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Aims: 1. To describe how the main characteristics of the Hazewinkel criteria for SSL are identified by a group of non-experienced endoscopists; 2. To identify which combination of characteristics identifies with more reliability a SSL in a learning background.

Methods Prospective study in the setting of a population-based CRC screening program. Six endoscopists attended a short session on optical diagnosis of SSL. For every lesion all endoscopists described the presence of the Hazewinkel criteria (cloud appearance, irregular shape, indistinct limits and black dots) and categorized lesions following the NICE classification. The presence of ≥2 criteria was considered diagnostic of SSL.

Results A total of 2505 lesions were included. Among them, 116 (4.6%) SSL were identified (median size (SD) 4 (6.2)); proximal location 68 (58.6%). Accuracy of ≥ 2 criteria for the diagnosis of SSL was 0.93. Overall positive predictive value (PPV) was 0.25 without differences among endoscopists, while the NICE PPV for adenoma was 0.84. The frequency of identification of each criterion in every SSLs was: cloud-like surface 45 (38.8%), irregular shape 27 (23.3%), indistinctive borders 30 (25.9%) and black dots 14 (12.1%). All criteria were more prevalent in SSL > 10 mm. The proportion of SSL diagnosed in lesions harboring each criteria combination is summarized in Tab. 1.

Tab. 1 Proportion of SSL diagnosed in lesions harboring each criteria combination

<table>
<thead>
<tr>
<th>Criteria Combination</th>
<th>NICE1</th>
<th>NICE2</th>
<th>Size 1 – 10 mm</th>
<th>Size &gt; 10 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cloud-like shape</td>
<td>28.6</td>
<td>12.5</td>
<td>5.6</td>
<td>28.6</td>
</tr>
<tr>
<td>Cloud-like + indistinctive borders</td>
<td>50.0</td>
<td>-</td>
<td>36.4</td>
<td>100</td>
</tr>
<tr>
<td>Cloud-like + black dots</td>
<td>25.0</td>
<td>-</td>
<td>20.0</td>
<td>-</td>
</tr>
<tr>
<td>Cloud-like + irregular shape + indistinctive borders</td>
<td>35.3</td>
<td>25.0</td>
<td>22.9</td>
<td>57.1</td>
</tr>
</tbody>
</table>

Conclusions: 1. A great proportion of SSL does not have the optical diagnosis criteria; 2. The identification of the Hazewinkel criteria improves with size and NICE1 lesions; 3. Cloud-like surface is the most prevalent characteristic found in SSL.

OP269 DIAGNOSTIC PERFORMANCE OF CRYSTAL VIOLET CHROMOENDOSCOPY – RESULTS FROM A GERMAN CENTER

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Aims The precise characterization of colorectal neoplasms is necessary because it influences the choice of treatment. Kudo’s pit pattern classification has shown excellent diagnostic performance. In Germany, data on the use of crystal violet (CV) solution to describe the surface pattern of colorectal lesions is lacking. In this study, we describe the diagnostic outcomes of CV-chromoendoscopy on colorectal neoplasms.

Methods A 0.05% CV solution was used to stain the surface of 62 colorectal polyps. The surface pattern of each polyp was described. Polyps were categorized into Kudo types I, II, III, II, IV, VI and Vn. The pit pattern diagnosis was compared with the histology. Furthermore, a simplified pit pattern classification using one of three categories: regular surface, irregular surface and amorphous surface was used on the same polyps and also compared with histology.

Results 4 sessile serrated adenomas (SSA), 21 low-grade intramuscular neoplasia (LGIN), 31 high-grade intramuscular neoplasia (HGIN), 1 low-risk submucosal invasive carcinoma and 5 deep invasive carcinoma were stained with crystal violet. Type II, III, IV, and V showed LGIN/HGIN in 100% and 96% respectively. Type VI had a HGIN histology in 89% while type Vn had a diagnostic accuracy of 86% for cancer. In the simplified pit pattern classification, a regular surface pattern showed LGIN/HGIN in 93%, an irregular surface showed HGIN in 77% and an amorphous surface pattern had a diagnostic accuracy of 83% for cancer.

Conclusions With CV chemoendoscopy and Kudo’s pit pattern, colorectal polyps can be classified correctly into adenomas and carcinomas with a high degree of accuracy. A simplified description of the surface pattern after CV staining also has a high degree of accuracy for the characterization of colorectal polyps.
OP270 COMBINATION OF ERCP AND EUS-GUIDED BILIARY DRAINAGE (CERES) VERSUS PTBD FOR MALIGNANT HILAR BILIARY OBSTRUCTION: A MULTICENTER PROSPECTIVE COMPARATIVE COHORT STUDY (THE CERES STUDY)

Authors Oprayoon T1, Kongkam P1, Boonmee C2, Sodarat P3, Jacques J1, Privat J2, Fumex F3, Pinard F4, Valats JC5, Cholet F6, Vila JJ1, González G1, Aburruza L1, Costa J2, Carvalho J3, Prieto C1, Thieme

Methods French retrospective multicentric study including all cases of EUS guided CDS with HOT AXIOS device in the 7 centers that participate to the first study. Primary ENDPOINT: technical success rate defined as the ability to correctly deploy the Hot Axios stent between the common bile duct and the duodenal bulb with visualization of bile flow. Secondary endpoints: decrease in bilirubin of at least 50% at day 7 or normalization at day 30.

Results 61 consecutive patients were included in this study between 01/09/2017 and 22/09/2018 by 11 operators in 9 centers. Primary Endpoint: Technical success rate was 98.5% with only one failure. Secondary Endpoints: Clinical success rate: 98.4%. Per procedural complication: 1.6%: one bleeding during the fistulotomy stopped by the stent itself. Short term complications: 0%. Recurrence of biliary obstruction: 7 cases (11.5%) (median follow up: 151 days).

Conclusions EUS-CDS with the HOT AXIOS is efficacious and safe in distal malignant obstruction of the common bile duct in cases of ERCP failure with impressive results once the expertise is acquired and the recommended techni-

OP272 EUS-GUIDED TRANSMURAL BILIARY DRAINAGE SHOULD BE THE FIRST CHOICE THERAPY IN PATIENTS WITH UNFEASIBLE PAPILLARY CANNULATION

Authors Vila jj1, González G1, Aburruza L1, Costa J2, Carvalho J3, Prieto C1, Fernández-Uniñ1,1, Carrascosa J, Juanmartiñena J1, Gómez M1

Methods Outcomes of RVT vs. TMT performed in consecutive patients with unfeasible papillary cannulation were analyzed retrospectively from january 2014 until june 2017, and prospectively since the latter until june 2018. Inclusion criteria: patients with benign or malignant biliary disease with impossible biliary cannulation in whom EUS-guided biliary drainage was accomplished. Variables studied: age, sex, technique performed, type of disease, access point, technical success and adverse events classified according to ASGE lexicon. EUS-guided technique was decided individually according to possible biliary cannulation in whom EUS-guided biliary drainage was accomplished. Fisher test and logistic regression analysis were used.

Results 73 patients were included: 42 RVT and 31 TMT (28 hepatocarcinomas, 3 choledochoduodenostomies). Mean age: 74.26 ± 13.25 (range: 30 – 94), 27 women. 70% of patients had malignant disease and 78% had biliary stenosis. An ERCP was attempted in the same session of EUS-guided techni-

Primary ENDPOINT: clinical success rate defined as the ability to correctly deploy the biliary drainage to biliary reintervention procedure) were recorded. The study was conducted during march 2016 until october 2018 as a multi-

Conclusions For biliary drainage in MHBO, based on results of this study, CERES provided longer patency with less frequent of RBO at 6-month interval.

OP271 EUS GUIDED CHOLEDOCHODUODENOSTOMY WITH HOT AXIOS: FRENCH MULTICENTRIC STUDY AFTER LEARNING CURVE

Authors Jacques J1, Privat J2, Fernex F3, Pinard F4, Valats JC5, Cholet F, Grandval P1, Iepettit H1, Legros R1, Napoleon B1

Methods Outcomes of RVT vs. TMT performed in consecutive patients with unfeasible papillary cannulation were analyzed retrospectively from January 2014 until June 2017, and prospectively since the latter until June 2018. Inclusion criteria: patients with benign or malignant biliary disease with impossible biliary cannulation in whom EUS-guided biliary drainage was accomplished. Variables studied: age, sex, technique performed, type of disease, access point, technical success and adverse events classified according to ASGE lexicon. EUS-guided technique was decided individually according to patients characteristics. Fisher test and logistic regression analysis were used.

Results 73 patients were included: 42 RVT and 31 TMT (28 hepatocarcinomas, 3 choledochoduodenostomies). Mean age: 74.26 ± 13.25 (range: 30 – 94), 27 women. 70% of patients had malignant disease and 78% had biliary stenosis. An ERCP was attempted in the same session of EUS-guided technique more frequently in RVT group (22% vs. 60%, p = 0.002). Technical success was higher with TMT (90.3% vs. 62%, p = 0.007) and adverse events were higher with RVT (9.7% vs. 31%, p = 0.04). Adverse events: pancreatitis (6), bleeding (3), infection (2), biliary peritonitis (4) and pulmonary thromboembolism (1). Adverse events were classified: 6 moderate, 5 severe and 5 fatal. Severe and fatal adverse events happened more frequently with RVT (3.2% vs. 21.4%, p = 0.03). In patients with malignant stenosis, TMT had a higher...
technical success (89.7% vs. 63.6%, p = 0.03) and lower adverse event rate (10.3% vs. 31.8%, p = 0.07). With multivariate analysis, technical success and adverse event rates were only influenced by the technique performed favouring TMT: (p = 0.02, OR = 5.2, IC 95%: 1.2 – 22.3) and (p = 0.05, OR = 4.87; IC 95%: 0.9 – 24.8) respectively.

Conclusions EUS-guided biliary drainage by means of TMT offers a higher technical success and lower adverse events which are also less severe than with RVT. Thus, in patients with malignant biliary stenosis and unfeasible ERCP, TMT should be the first choice therapy for biliary drainage.

OP273 TEMPORARY EUS-GUIDED ANASTOMOSES (TEA) AS THERAPEUTIC ACCESS FISTULAS (TAF) IN BENIGN BILIARY OBSTRUCTION (BBO) NOT AMENABLE TO ERCP: EMERGING APPLICATION OF EUS-GUIDED BILIARY DRAINAGE (EUS-BD)

Authors De Benito M1, Yaiza Carbajo A1, Bazaga S1, Garcia-Alonso FJ1, Sanchez-Ocaña R1, Peñas-Herrero I1, Garcia-Pajares F1, De la Serna Higuera C1, Perez-Miranda M1

Institute 1 Hospital Universitario Rio Hortega, Valladolid, Spain


Aims Transpapillary EUS-BD is gaining acceptance in BBO. The potential of transmural EUS-BD in complex BBO warrants study. To assess feasibility and efficiency of TEA using transmural covered self-expandable metal-stents (cSEMS) to provide interval biliary drainage and create TAF for biliary endotherapy under cholangiscopy/fluoroscopy in BBO not amenable to ERCP.

Methods 402 EUS-BD among 12,355 consecutive ERCPs databased at single Unit over 12-years were queried for: BBO + Transmural cSEMS placement ± removal. Lack of dilation precluded EUSBDD attempts in 14/108 BBO. Transmural EUS-BD succeeded in 91/94 (96.8%). 9 BBO with plastic stents TEAs and 8 subsequently proved malignant were excluded. 87 patients (40.7% female; 71.5 [IQR 62.5 – 79.5] years old) were reviewed for indications, technique, interventions, technical success, AEs and final therapeutic success.

Results Indications: strictures (40.7%), CBD stones (23.3%), transections (19.1%), hepatolithiasis (15.1%). SAA in 59.5% (Roux-en-Y 33.7%, Whipple 12.3%, Bariatric 6%). ERCP attempted in 93.2%, with failed access/cannulation in 61.3% and incomplete/impossible therapy in 38.5%. In 93% TEA, 10 ± 60 mm cSEMS with anchoring flaps and/or, additional clips/coaxial pigtails were used. TEA were predominantly transhepatic (78.7%). Over a median (IQR) cSEMS indwell time of 81.5 (21 – 188) days a median (IQR) of 3 (2 – 4) treatment sessions guided by antegrade cholangiography/cholangioscopy through the cSEMS and/or through the naked TAF were performed for antegrade balloon-dilation, stent insertion/removal, stone removal ± lithotripsy, rendezvous, magnetic compression anastomoses, needle-knife incision. cSEMS removal was successful in all 79.2% in whom attempted (20.8% treatment drop-outs or follow-up losses). Final clinical success achieved in 77.4% of patients with cSEMS removed. 26.3% experienced AEs (7.8% severe).

Conclusions Select BBO patients (refractory stones/strictures ± SAA) not amenable to ERCP can be treated using TEA as TAF for serial endotherapy. This shift from percutaneous to transmural endoscopy replicates prior experience in malignancy. Surgery and PTBD can be avoided in 80%.

OP274 EUS GUIDED VERSUS ERCP GUIDED BILIARY DRAINAGE FOR PRIMARY PALLIATION OF MALIGNANT BILIARY STRICTURES: A SYSTEMATIC REVIEW AND META-ANALYSIS

Authors Tringali A1, Stasi F2, Cintolo M1, Pugliese F1, Dioscoridi L1, Forti E1, Mutignani M1, Adler DG3

Institute 1 Endoscopy, ASST Grande Ospedale Niguarda, Milano, Italy; 2 Gastroenterology and Endoscopy, IRCCS De Bellis, Castellana Grotte, Italy; 3 Gastroenterology and Hepatology, University of Utah, Salt Lake City, United States


Aims EUS guided biliary drainage (EU-BD) has emerged as an alternative treatment for Percutaneous transhepatic biliary drainage (PHT-BD) when ERCP fails. EUS-BD has some theoretical advantages over ERCP-BD because it avoids the traumatism of the papilla and allows drainage when the papilla is not reachable. We performed a meta-analysis to assess the role of EUS-BD compared to ERCP-BD in patients with malignant biliary strictures.

Methods a literature search using PUBMED and EMBASE was performed to identify article comparing EUS-BD vs. ERCP-BD in patients with distal malignant biliary strictures. Outcome measures were technical and clinical success, overall adverse events, PEP, bleeding, perforation, cholangitis and migration rate, re-intervention rate, procedure time, and patients survival. Results were reported as mean differences or pooled odds ratios (OR) with 95% confidence intervals (95% CI). Fixed and random models were used as appropriate. Heterogeneity was assessed by measuring I².

Results We identified 4 studies for a total of 446 patients (208 EUS-BD, 235 ERCP-BD). No difference emerged in rates of technical (OR 0.75 95% CI 0.26 – 2.16) and clinical success (OR 0.63 95% CI 0.30 – 1.34), need for reintervention (OR 0.61 95% CI 0.09 – 3.90), overall AE (OR 0.60 95% CI 0.33 – 0.96) and cholangitis (OR 0.39 95% CI 0.09 – 3.81). PEP rate was higher in the ERCP-BD group (OR 0.07 95% CI 0.01 – 0.36). There was a trend in the procedure time favoring the EUS-BD group but not reaching statistical significance (MD -0.44 95% CI -11.64 – 0.75). Stent survival was higher in the ERCP-BD group (HR 1.90 95% CI 1.13 – 3.22) while there was not a statistically significant difference in patients survival (HR 0.97 95% CI 0.25 – 3.86).

Conclusions EUS-BD was equal to ERCP-BD in efficacy and safety although EUS-BD appears to be associated with a lower rate of PEP and a trend in lower procedure time while ERCP-BD had higher stent survival rates. Further RCTs are needed before a firm conclusion can be made.

OP275 MANAGEMENT OF COMPLEX BILIARY LEAK BY ENDOSCOPIC DRAINAGE WITH TRANSMURAL OR TRANSPAPILLARY-TRANSFISTULARY ACCESS

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Aims Biliary leak (BL) occurs often after hepatobiliary surgery. ERCP with biliary sphincterotomy and/or placement of a biliary stent or nasobiliary catheter represents the first therapeutic option. Some complex cases might resist to conventional treatment.

We report our experience of biliary drainage with transpapillary/transfistulary (TP/TF) or EUS assisted-transmural (TM) access.

Methods This is a retrospective analysis from January 2007 to December 2016. BL diagnosis was based on imaging or bile outflow from surgical drain. Patients who responded to conventional ERCP treatment were excluded. Baseline characteristics, radiologic, procedural and follow-up data were collected. TP/TF was performed by the placement of double pigtail stent during ERCP. For TM, plastic DPT stents were placed under EUS control.

Results We identified 30 patients (males 57%, median 55 years) with BL treated by TF/TP or TM drainage. BL resulted from hepatectomy (50%) and nasobiliary catheter placement (20%). Some complex cases might resist conventional treatment.

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Results We identified 30 patients (males 57%, median 55 years) with BL treated by TF/TP or TM drainage. BL resulted from hepatectomy (50%) and nasobiliary catheter placement (20%). Some complex cases might resist conventional treatment.
low-up was available for 21 patients at three months. In those patients, collection regression occurred in 52% of cases (TM: 6; TF: 5) and 57% (TM: 6; TF: 6) were free of sepsis and weaned from percutaneous drain. Redo surgery was necessary for 2 patients. Two patients died due to early complications related to endoscopic treatment (vascular/pericardial erosion).

Conclusions Transfistular/transpapillary or transmural drainage is technically feasible in experienced centers and might avoid redo-biliary surgery.

OP276 EUS-GUIDED VS PERCUTANEOUS DRAINAGE FOR ACUTE CHOLECYSTITIS IN HIGH-RISK PATIENTS: A SYSTEMATIC REVIEW AND META-ANALYSIS

Authors Tringali A1, Stasi E2, Cintolo M1, Dioscoridi L1, Pugliese F1, Forti E1, Adler DG1, Mutignani M1

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Aims EUS-guided gallbladder drainage (EUS-GBD) is an alternative treatment for acute cholecystitis in patients unfit for surgery when transpapillary drainage fails. Percutaneous cholecystostomy (PT-GBD) offers an alternative temporary measure with clinical success rates over 95% in acute cholecystitis; however, it is associated with high morbidity. A meta-analysis was performed to compare the clinical outcome of EUS-GBD and PT-GBD for acute cholecystitis in high-risk patients.

Methods A medical literature search using Embase, Pubmed and Cochrane was performed, aiming at identifying studies comparing EUS-GBD and PT-GBD in patients with acute cholecystitis at high surgical risk. Outcome measures were clinical and technical success, overall AE and type of AE, re-admission, recurrence and re-intervention rate, mortality and pain score. Results were reported as mean differences or pooled odds ratios (OR) with 95% confidence intervals (95% CI). Heterogeneity was assessed by measuring I².

Results We identified 7 studies (6 observational and 1 RCT) for a total of 805 patients. EUS-GBD had a greater technical success (OR 0.39 95% CI 0.16 – 0.97), and lower pain score (MD -2.95 95% CI -2.60; -2.30), re-intervention rate (OR 0.24 95% CI 0.11 – 0.51) and re-admission to hospital rate (OR 0.21 95% CI 0.12 – 0.37) compared to PT-GBD. No difference emerged in clinical success (OR 0.68 95% CI 0.38 – 1.21) adverse events (OR 0.69 95% CI 0.28 – 1.70) and mortality (OR 1.04, 95% CI 0.35 – 3.11).

Conclusions EUS-GBD is a safe and effective procedure that reduces the need for re-intervention.

In patients who are poor surgical candidates it should become the first choice treatment in tertiary care centres with expert endoscopists.

OP278 EUS-GUIDED GALLBLADDER DRAINAGE (EUS-GBD) WITH LUMEN-APPOSING METAL-STENT – BEYOND BILIARY ISSUES. SEDATION AND AIRWAYS MANAGEMENT, ICU ADMISSION AND GENERAL OUTCOMES

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Aims EUS-guided gallbladder drainage (EUS-GBD) in high-risk surgical patients with acute cholecystitis is a safe procedure, with a high success rate. Several studies have been published dealing with technical, clinical outcomes, procedural adverse events; moreover, comparison with surgery, percutaneous drainage, trans-papillary endoscopic drainage have been performed. To our knowledge, no data on procedural issues have been clearly stated, in terms of type of sedation administered, airways management, need for ICU admission, length of stay and long-term survival.

Methods We enrolled patients with clinical, biochemical and radiological diagnosis of severe acute cholecystitis, who underwent EUS after being considered contraindicated for surgery at multidisciplinary evaluation. All procedures have been conducted with the supervision of an anesthesiologist.

Results 20 patients were considered but in 6 case EUS-GBD was not indicated because of no signs of cholecystitis (no.3), obstructive cholangitis (no.2), no signs of biliary stones or inflammation (no.1). In 14 patients (8 male; 78-year-old [69 – 91]) EUS-GBD was considered indicated; in case, no EUS operative window was identified and the drainage was not performed. Trans-duodenal drainage was performed in 10 out of 13 cases (76.9%). Clinical success was achieved in 11/13 cases (84.6%). 2 patients (14.3%) required ICU admission, before the procedure, because of biliary septic shock. 2 (14.3%) patients required general anesthesia with Airways intubation, 9 (64.3%) required deep sedation with propofol while, in 3 cases (21.4%) were managed with fentanyl and midazolam. ICU length of stay was 8 [2 – 14] days; length of stay was 9 [7 – 32] days; in-hospital mortality was 7.1%; 1-month survival was 92.9%; 6-month survival was 6 (7) 85.7%. Elective cholecystectomy was performed in 1 patient because of recurrent cholecystitis due stent occlusion.

Conclusions EUS-GBD was a safe and effective technique; the procedure could be performed without general anesthesia and Airways intubation in
most cases (>85%) leading to very low anesthesiological complications and mortality.

**OP279 ENDOSCOPIC ULTRASOUND-GUIDED RENDEZVOUS IN BENIGN BILIARY OR PANCREATIC DISORDERS WITH A 22-GAUGE NEEDLE AND A 0.018-INCH NOVAGOLD GUIDEWIRE**

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**DOI** 10.1055/s-0039-1681455

**Aims** To assess the efficacy and safety of endoscopic ultrasound-guided rendezvous (EUS-RV) for benign biliary or pancreatic disorders with a 22-gauge needle and a 0.018-inch guidewire.

**Methods** Retrospective study of patients who underwent EUS-RV after failed biliary or pancreatic cannulation for benign disorder. For EUS-RV, a 22-gauge needle and a 0.018-inch Novagold guidewire were used. The primary outcome was the technical success rate and the secondary outcome was the rate of adverse events.

**Results** Thirty-one patients were included (18 men and 13 women, average age (SD) of 71.8 (13.1) years. In 27 cases, the EUS-RV was biliary, and in 4 cases, it was pancreatic. Initial ERCP was performed for bile duct stones (n = 20), benign stenosis (n = 5), biliary leak (n = 2), pancreatic stenosis (n = 1), pancreatic fistula (n = 1), and the treatment of intraductal lithiasis in chronic pancreatitis (n = 2). Twenty-five (80.6%) patients underwent EUS-RV in the same session after failed ERCP. The reasons for applying EUS-RV were undetectable papilla (n = 3), intraductal papilla (n = 9), and failed cannulation (n = 19). Duct puncture and contrast injection were achieved with the 22-gauge needle in all cases. However, the guidewire could be placed only in the duodenum in 25/31 (80.6%), completing the procedure in all cases in which the guidewire was passed, which represents a technical and clinical success rate of 80.6%. In pancreatic EUS-RV, the technical success rate was 75% (3/4), and in biliary, it was 81.5% (22/27), p = 0.76. The overall adverse event rate was 12.9% (4 adverse events in 3 patients), all of which were in biliary EUS-RV.

**Conclusions** EUS-RV may be a safe and feasible salvage method for unsuccessful cannulation for benign disorders. The use of a 22-gauge needle with a 0.018-inch guidewire may be the first option for benign pathology.

**Saturday, April 6, 2019**

**Video ERCP 1** South Hall 1A

**OP280V ENDOSCOPIC DESTRUCTION OF A LARGE INTRAJEJUNAL BILIARY STONE USING THE POLYPECTOMY SNARE AND HIGH AUTOCUT MODE**

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**DOI** 10.1055/s-0039-1681456

**Biliary stones are usually found in the gallbladder or in the biliary ducts and are sometimes challenging to destroyed with mechanical, electrohydraulic or laser lithotripsy. Collection of gallstones in the jejunal limb after duodenopancreatico-ectomy was rarely reported in the literature. We report here the case of a 66 years-old woman followed up since 1998 after an Imanaga’s procedure of pancreatoduodenectomy for an endocrine tumor. In 2014, she was referred for an angiocholitis and a percutaneous radiologic drainage was performed. Biliary stones were removed and a one-year drainage was maintained to calibrate the biliojejunal anastomosis. In 2017, she repeated angiocholitis with acute pain of the hepatic region. An abdominal CT scan revealed a 4 cm radiopaque stone in the afferent jejunal loop responsible of bile duct dilation. Endoscopy showed a stenosis of the gastrojejunal anastomosis not passable initially with a scope. After a 12 mm balloon dilatation we explored the afferent loop and found immediately an enormous yellow stone. The capture of the stone was impossible with a 40 mm snare and we thus decided to destroy the stone. We first tried argon plasma coagulation and electromechanical lithotripsy but without any effectiveness on the stone. Finally, the tip of a 10 mm snare (Olympus, Tokyo, Japan) was used to damage the stone using the Autocut mode 180W (Erbe, Tuebingen, Germany) to drill and fragment this stone. After 2 hours of procedure, 80% of the stone were destroyed and we decided to schedule a second endoscopic session. Pain disappeared immediately after the first session and 1 month later, a 1 cm stone remained which was easily fragmented with the same technique.

In conclusion, we report an extremely rare complication after Imanaga’s procedure treated by endoscopy. Autocut mode 180 watt applied with tip of the snare is a possible technique to split stones to avoid difficult surgery approach.

**OP281V ERCP IN BILIARY PARASITOSIS – FROM DIAGNOSIS TO TREATMENT**

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**DOI** 10.1055/s-0039-1681457

**Description** We present the video of 4 patients with biliary parasitosis, diagnosed and treated by endoscopic retrograde cholangiopancreatography (ERCP), in a series of more than 3000 CPREs performed in a gastroenterology department (prevalence < 0.14%). Three of the cases correspond to biliary tree colonization by Fasciola hepatica, and the forms of presentation were recurrent anicteric cholestasis, biliary pancreatitis and obstructive jaundice respectively. In 2 patients, the parasite was removed from the bile duct still alive. Endoscopic treatment was complemented with triclabendazole. The last case corresponds to a patient with cholangitis. During ERCP, cholangiography showed a long linear opacity suggestive of Ascaris lumbricoides (AL) in the biliary tract. After performing the sphincterotomy, the bile duct was explored with a Dormia basket and a balloon extractor, removing multiple AL already without motility. Endoscopic treatment was supplemented with albendazole.

**Motivation** In Portugal, as in other developed countries, biliary parasitosis are rare diseases. However, the incidence of these infestations appears to be increasing in line with the increase in tourism and immigration. The diagnosis of parasites in the biliary tree is usually performed by ultrasound, computed tomography, magnetic resonance imaging or even echoendoscopy. ERCP, an essentially therapeutic technique, is used for the removal of these parasites from the bile duct. There are, however, very rare cases in which the diagnosis is made only during ERCP.

With this video we intend to illustrate the typical findings of these parasitosis, in cholangiography and duodenoscopy, as well as to demonstrate the usefulness of this technique in the treatment of biliary obstructions by this etiology.
OP282V  CLIPS + RUBBER BAND COUNTERTRACTION: A NEW SIMPLE METHOD TO ALLOW INTRADIVERTICULAR PAPILLA CANNULATION

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The prevalence of ligation biliary pathologies is high in patients with peri-ampullary diverticula.

We report the case of a patient with main bile duct stones, confirmed after EUS examination. The endoscopic view of the duodenal tract showed an intradiverticular papilla. In order to facilitate the exposure of the papilla, we proceed to a counter traction by clip and rubber band. A first Boston Resolution 360 clip, on which was hung a dental rubber band (Ormco Ostrich 19.1 mm) was set up in para-papillary position by the operating channel of the duodenoscope (Olympus). A second clip was introduced into the operator channel to tract the elastic on the outer edge of the duodenum. The papillary exposure was improved and cannulation of the main bile duct was achieved in 3 minutes and 10 seconds with a Boston Jagwire guide wire and a Boston sphincterotome 4.4. After performing a sphincterotomy, the stones were extracted with an balloon and hemostatic compression was performed due to post-sphincterotomy bleeding. The haemostasis was completed by the placement of a covered SEMS Cook Evolution 40 × 10 mm, then by the injection of saline and adrenaline 1/1000.

The use of a pediatric biopsy forceps in the same working channel as the sphincterotomy has been described to pull the infundibulum and facilitate its catheterization. This technique is not easy and the movements of the erector and sphincterotomy are limited by the presence of the pediatric forceps throughout the cannulation tentatives. The use of a counter-traction facilitates the exposure of an intra-diverticular papilla and the bile duct cannulation and it allows a higher maneuverability of the erector and the sphincterotomy during the procedure.

The use of a counter-traction by two clips and an elastic can be useful for ERCP in the case of intra-diverticular papilla.

OP283V  DEGENERATED TODANI IA CHOLECOCHAL CYST

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Introduction  Choledochal cysts are a very rare pathology and malignant transformation is the most serious complication (1).

Case report  In a 72-year-old patient with acute cholangitis a Cholangio-NMR (Fig. 1) and abdominal-CT revealed a mass at the choledochal-pancreas-duo-denum crossroads, dilation of the bile duct up to 38 mm and pancreas divi-sum.

Gastroscopy showed an infiltrated duodenal bulb (biopsies: adenocarcinoma), and a extrinsic luminal bulging.

EUS described a cystic dilation of the common bile duct with solid echogenic content inside it. The EUS-guided puncture was non-specific.

ERCP confirmed an adenomatous papilla (Fig. 2) and a great saccular cyst dilation of the extrahepatic bile duct (Todani Ia). Deep cannulation of the proximal bile duct was possible after a fistulotomy. Stood out that polyloid formations extruded through fistulotomy (Fig. 3); the histopathology was adenocarcinoma with dysplasia. A 10 Fr plastic prosthesis was placed to ensure biliary drainage.

Our patient was diagnosed of advanced adenocarcinoma of choledochal cyst and a chemotherapeutic treatment was initiated.

Comments  We present this case due to the unusual aggressiveness of tumor infiltration and endoscopic expression.

After fistulotomy in bulging papillae output of lithiasis or intraampullary am-putoma are observed in some cases, but the extrusion of neoplastic forma-tions is exceptional.

Choledochal cysts are associated to an anomalous arrangement of the pan-creatobiliary duct. Pancreas divisum results from a fusion failure of the pancreatic buds. The coexistence of pancreas divisum and choledochal cyst in adults has been reported in less than 10 well documented cases (2).


OP284V  ENDOSCOPIC MANAGEMENT OF DIFFICULT BENIGN BILIARY AND PANCREATIC STRICTURES USING A WIRE-GUIDED CYSTOTOME

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Aim  Endoscopic management using standard accessories is the preferred modality for treating benign biliary/pancreatic strictures. However, if there’re difficult and severe strictures, the passage of accessories over a guidewire across the stricture isn’t feasible. Hence, our aim is to report our experience regarding the use of a standard diathermic dilator (cystotome) to aid in stric-ture dilatation and stent placement in patients with difficult strictures.

Methods  We report 4 patients with biliary/pancreatic severe strictures treated with a 6Fr cystotome with diathermic tip (CystoGastro-set; Endo-flex, Germany). In all cases the cystotome was passed over the guidewire under fluoroscopic guidance and the current was applied until the tip of the cystotome crossed the stricture. Efficacy of stricture dilatation was considered when stent placement was achieved with adequate ductal drainage after standard endoscopic therapy failure; safety was considered the absence of complications during 30-day follow-up.

Results  In 1 patient with liver transplant (LT) and 1 patient with prior chole-cystectomy, a guidewire was passed across the stricture using SpyGlassDS; however, biliary balloon catheter couldn’t pass across the stricture so a wire-guided 6Fr-cystotome was used.

In another patient with LT, a guidewire was passed across the papilla by EUS-assisted biliary rendezvous technique. Then, a 6Fr-cystotome was used after a biliary balloon catheter couldn’t pass. About pancreatic stricture in a patient with chronic pancreatitis, retrograde cannulation failed, hence EUS-assisted pancreatic rendezvous technique was performed. Once the guidewire passed across the papilla, a pancreatic balloon dilator couldn’t pass across the stricture. Then, a wire-guided 6Fr-cystotome was successfully used.

In all cases, after using 6Fr-cystotome, stent placement and duct drainage were successfully achieved; there weren’t complications during follow-up.

Conclusion  The cystotome can be an effective and safety tool in the man-agement of difficult benign biliary and pancreatic strictures, whereas conven-tional methods to negotiate stricture have failed.
OP285V  ENDOSCOPIC RENDEZVOUS FOR AN ANASTOMOTIC STRicture AFTER HEPATOEJUNOSTOMY
Authors  Gerees C1, Weber P1, Siersema PD2, Neuhaus H1, van Geenen EJM2, Beyna T1
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Aims  Anastomotic stenosis of the hepatojjunostomy (HJS) remain a common complication and a major cause of morbidity. (Balloon assisted)-ERC is the golden standard to treat HJS. In 38 % BE-ERC is not successful because of the inability to reach and/or cannulate the anastomosis. An alternative is surgical treatment, which is associated with significant morbidity and mortality. Surgery can be contraindicated by ASA3 plus patients. For those patients long term trans hepatic biliary drainage might be a therapeutic option. In this case we show a trans hepatic, cholangioscopy guided reopening of a bilioenteric anastomosis stricture.
Methods  We report the case of a 71-year-old female with adenocarcinoma of the papilla, who received a pylorus-sparing pancreatoduodenectomy and developed a HJS with recurrent cholangitis. Former two surgical revisions and ERCPs failed. At our center ERCPs with small, long colonoscope and duodenoscope were performed. The HJS were identified at the expected place of the neo-papilla, but biliary cannulation was impossible. In order to obtain biliary drainage a PTCD-Series with a dilation of the bile duct was performed. A cholangioscope was inserted through the PTCD up to the hepatojjunostomy, which showed a complete stricture of the anastomosis. In a rendezvous maneuver diaphany was achieved with the colonoscope while the stricture could be re-opened with a needle knife under cholangioscopic control.
Results  After a large incision the cholangioscope was able to pass into the small bowel. A transhepatic drainage catheter was placed through the opened HJS. Three months later the re-opened HJS was stabilized and the catheter could be extracted, with a passage of bile through the treated HJS.
Conclusions  In certain cases, cholangioscopic incision of the bilioenteric anastomosis in a rendezvous maneuver can be an alternative to long term PTCD. For the safely success of the procedure diaphany established with a second endoscope was found to be essential.

OP286V  ENDOSCOPIC DEPLOYMENT OF MULTIPLE (≥ 3) METAL STENTS FOR UNRESECTABLE MALIGNANT HILAR BILIARY STRictures: A COMbINATION OF SIDE-BY-SIDE AND STENT-IN-STENT METHODS (WITH VIDEO)
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Aim  The endoscopic deployment of multiple (≥ 3) self-expandable metal stents (SEMS) for high-grade unresectable malignant hilar biliary strictures (UMHBS) is technically challenging. We evaluated the efficacy of endoscopic deployment of multiple SEMS using a combination of side-by-side (SBS) and stent-in-stent (SIS) methods.
Methods  Eleven consecutive patients with high-grade UMHBS (mean age: 76 years, male/female: 5/6, Bismuth-Corlette classification IVa/IV: 7/4) underwent the endoscopic deployment of multiple SEMS using the combination technique. After the initial drainage with endoscopic biliary stenting and/or endoscopic nasobiliary drainage, SEMS were typically deployed as follows. After selective cannulation using a 0.025-inch guide wire, the SEMS were deployed in the right posterior sectoral duct and the left hepatic duct using the SBS method. Next, a 0.025-inch guide wire was introduced into the right anterior sectoral duct through the mesh of the SEMS on the right side. Then, the mesh of the stent was dilated with a 6-mm balloon, the guide wire was exchanged for a 0.035-inch stiff guide wire, and the delivery system was introduced. Finally, another SEMS was deployed in the right anterior sectoral duct using the SIS method.
Results  The technical and clinical success rates were 11/11. More than three SEMS were successfully deployed, and obstructive jaundice was fully improved in all cases. Stent occlusion was recognized in 4 of 11 patients (mean: 134 days, range: 28 – 232). Reinterventions for both liver lobes were feasible by passing the guide wire inside the previously placed stents in 3 of 4 patients. The median stent patency was 150 days during a mean follow-up period of 184 days (range: 37 – 558). Three patients developed self-limiting cholangitis without definite stent occlusion as late (> 30 days) adverse events.
Conclusion  Employing the combination of SBS and SIS methods may facilitate the endoscopic deployment of multiple SEMS to treat high-grade UMHBS.

OP287V  ‘CLIP WITH LINE’ TECHNIQUE FOR SUCCESSFUL LUXATION OF THE PAPILLARY ORIFICE FROM A DUODENAL DIVERTICULUM AND SUCCESSFUL CANNULATION
Authors  Horn A1, Meves V1, Hochberger J1
Duodenal diverticula (DD) are a frequent condition (approximately 10 – 20% of all patients). An endoscopic retrograde cholangioscopy (ERC) of those patients can be challenging. We report a patient with a large DD. The papilla vateri (PV) is located completely in the diverticulum. The initial cannulation of the bile duct orifice (BDO) was difficult. This video shows a possibility to make the cannulation and the sphincterotomy feasible in cases with a DD. Transferred from Endoscopic Submucosal Dissection, we used the ‘Clip with Line’ technique for the first time in an ERC to cannulate the intra-diverticular site of the papillary orifice.
Description  A 88-year-old women was admitted for jaundice. Ultrasonography showed a dilated bile duct. An ERC revealed a large DD with the inability to detect the PV. BDO could be hardly visualized by lifting the top of the diverticulum with a catheter. We attached dental floss to a haemoclip to exert traction to the diverticulum and to facilitate the cannulation of the BDO. Outside the patient, a haemoclip was advanced through the working channel and was pushed out of the scope. We opened the clip and we linked the dental floss (about 2.25 m) to one arm of the clip. The endoscope was then re-inserted to the patient. Subsequently, the clip was attached to the mucosa of the papillary roof. Hence, traction was externally exerted by pulling the dental floss. With this movement the cannulation of the PV was facilitated. X-ray showed bile duct stones. A sphincterotomy was performed. Because complete extraction of bile duct stones was not confirmed, a bile duct stent was placed.
Conclusion  In some cases DD impede the cannulation of the common BDO. Therefore, the clip with line technique is an easy and affordable option to enable the exploration and if necessary a treatment in the common bile duct.
OP288 INSPECTION OF THE COLON IN RETROFLEXION INCREASES ADENOMA DETECTION RATE

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Aims: Adenoma detection rate (ADR) is inversely related to the incidence of interval colorectal cancers and therefore serves as a benchmark criterion for quality assessment during screening or surveillance colonoscopies. Within this study, we evaluated whether additional retroflex inspection of the colon can increase ADR and the number of adenomas per patient.

Methods: Patients undergoing screening or surveillance colonoscopies were prospectively enrolled. During colonoscopy, each segment of the colon (cecum and ascending colon, transverse colon, descending and sigmoid colon) was inspected first with HD standard forward view (SFV) followed by inspection of the same segment in retroflexed view (RFV) using a dedicated endoscope with a 210° retroflex angulation (Pentax RetroView). Number of adenomas in each segment detected with SFV and RFV as well as withdrawal times with SFV and RFV were recorded.

Results: At the time of abstract submission, 44 patients (mean age 58 years, 28 male) were prospectively included. Inspection of the whole colon in retroflexion was possible in all patients. Polyp detection rate (PDR) with SFV was 34% and increased to 45% when additional RFV was performed in each segment. Likewise, ADR increased by 9% when RFV was performed (ADR SFV: 30%, ADR RFV: 39%). Adenoma per patient rate was 1.6 with SFV and increased to 2.3 with additional RFV. Size of the additional adenomas found with RFV ranged from 3 to 10 mm. Withdrawal times were not significantly different between SFV and RFV.

Conclusions: Additional retroflexion of the colon using a dedicated endoscope can significantly increase ADR and the number of adenomas found per patient. This approach should be considered during standard colonoscopy to increase ADR and to improve the quality of colonoscopy.

OP289 ADENOMA DETECTION RATE AND COLONOSCOPY INDICATION: BEYOND SCREENING PROCEDURES

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Aims: Adenoma detection rate (ADR) is the most important quality measure in screening colonoscopies because it inversely related to the development of interval cancer and mortality. Minimum standard ADR recommended according to ESGE Guidelines is ≥ 25%; however, this recommendation’s made for primary screening colonoscopies and it remains unknown whether this cut-off must be the same for other colonoscopy indications. Hence, the aim of this study was to describe the ADR based on procedure indication and to predict the ADR recommended for other indications.

Methods: An observational, multicenter and cross-sectional study was conducted between February 2016 and December 2017 across 14 Spanish centers. Four colonoscopy indications have been considered: primary screening colonoscopies, positive fecal immunochromatographic test (+FIT) (OC-SensorTM; cut-off level 20μg/g), post-polypectomy surveillance and gastrointestinal symptoms. The ADR was calculated by age group and sex. The ESGE Guideline published in 2017 by Kaminski MF et al has been considered as a reference for ADR recommendations. Logistic regression analysis was used and population proportions and its confidence intervals (95% CI) were calculated using the exact Clopper-Pearson method.

Results: A total of 14,867 patients were included and the ADR was 38%. According to procedure indications and adjusted by sex and age, statistically significant differences between ADRs were found (p-value<0.001). The ADR in gastrointestinal symptoms was 28.1% (OR 0.76, 95% CI 0.66–0.87), 46.4% (OR 1.50, 95% CI 1.31–1.72) in FIT-based procedures, 48.2% (OR 1.51, 95% CI 1.30–1.76) in endoscopic surveillance compared to 30.8% in primary colonoscopy colonoscopies. 95% CI calculated for ADR population proportions were 26.9–29.3% in symptoms, 45.1–47.8% in +FIT endoscopies, 46.1–50.3% in post-polypectomy surveillance and 28.2–33.5% in colonoscopy screening group.

Conclusions: ADR significantly differs between colonoscopy indications. According to population proportions, we suggest new minimum standard ADR recommendations when procedure indication differs from primary screening colonoscopy: ≥27% in gastrointestinal symptoms, ≥45% in FIT-based screening and ≥46% in endoscopic surveillance.

OP290 SECOND FRONTAL VIEW VS PROXIMAL RETROFLEXION IN RIGTH COLON IN COLO-RECTAL CANCER SCREENING: MULTICENTRE RANDOMIZED TRIAL

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DOI: 10.1055/s-0039-1681466

Aims: Colonoscopy, the gold standard for the detection of colorectal cancer, fails to detect 22–28% of polyps, resulting in interval cancer (IC). IC are more frequent in right colon. The aim of this study was to compare second view of right colon with proximal retroflexion to second forward viewing in the detection of colorectal neoplasm in colorectal cancer screening programme. (NCT03041532).

Methods: Multicenter Prospective Randomized study of 691 patients referred from the colorectal screening program with a positive fecal occult blood test (FOBT) (October 2016 and October 2018). Patients were randomized to sec-
OP290 COLONOSCOPY WITH THE SINGLE USE ENDOSCOPE INVENDSCOPE SC 210 IN ROUTINE CLINICAL PRACTICE

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Aims Healthcare-associated infections linked to re-useable endoscopes was a matter of controversy in the past. In 2008 Invendo Medical presented the first single use endoscope for colonoscopy. With the Invendoscope SC210 there is now a further development with high definition available. Instead of the classical „wheel and wire“ mechanism this 170 cm colonoscope works with an electro-hydraulic controlled deflecting tip which allows a 180° bending in all directions. A joystick-like handled control plate is used to navigate the tip. Standard endoscopic devices for interventions can be used over the 3.1 mm working channel. This multicenter study assessed the safety and efficacy of this new endoscope in routine clinical practice.

Methods A total of 40 patients with indication for a colonoscopy were examined with the Invendoscope SC210 using carbon dioxide insufflation and water instillation on demand. The rate of successful intubation of the coecum and the required time was documented. For the registration of potential periinterventional complications an interview four weeks after colonoscopy took place.

Results 23 men and 17 women were examined with an average age of 65 (± 5.4) years. 35 patients received a sedation with propofol. The coecum was reached in 38 patients (coecal intubation rate of 95%), despite looping of the colonoscope in 28 patients. The median time to reach the coecum was 14,23 min (± 7.2 min). The withdrawal time was 10,2 min. In 12 patients (30%) polyps were resected by snare or biopsy forceps. 3 patients (7.5%) complained about abdominal pain after the examination and in one patient a self limiting hemorrhage from the sigma occurred. No major complication occurred.

Conclusions The sterile single use endoscope Invendoscope SC210 showed a good coecal intubation rate in routine clinical practice with safe resection of polyps as well. For a further evaluation of the effectivity comparative studies with standard colonoscopy are warranted.

OP291 CAN WE USE POLYP DETECTION RATE (PDR) ALONE TO DESCRIBE ADEQUATE INSPECTION OF BOWEL MUCOSA?

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Aims The aim of our study was to assess whether polypl detection rate (PDR) correlates with adenoma detection rate (ADR) and with mean adenoma per colonoscopy (APC). Our effort was to determine minimal marginal value for APC.

Methods Prospective multicenter study included asymptomatic individuals aged 45 – 75 who underwent preventive colonoscopy in 2012 – 2016 as part of Czech study monitoring metabolic risk factors of colorectal cancer. Individuals with incomplete colonoscopy and endoscopists with less than 30 colonoscopies and/or no detected adenoma in the observed group were excluded from the study. Spearman’s correlation coefficient was used to assess the relation between individual PDR/ADR and PDR/APC resp. The resulting conversion factors to predict ADR (APC) from PDR were obtained by linear regression.

Results In total, the study included 1,614 preventive colonoscopies performed by 16 endoscopists. Correlation between PDR and both indicators in all preventive colonoscopies was strong and statistically significant (PDR/ADR: Rs 0.82; p < 0.001; PDR/APC: Rs 0.70; p = 0.0027). We used the same methodology to determine gender-specific and indication-specific PDR/ADR and PDR/APC correlations. In all cases, we demonstrated a strong and statistically significant correlation between PDR and ADR (APC resp). We obtained conversion factors for both quality indicators: PDR to ADR 0.7185, resp. PDR to APC 0.0123.

Conclusions There is a strong correlation between PDR/ADR as well as between PDR/APC. Because of better availability, PDR may replace ADR and APC in colonoscopy quality assessment. Using our conversion factor we obtained minimal marginal value of APC 0.5 based on 40% minimal marginal value of PDR as recommended by ESCE.

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OP292 ENDOCUFF-ASSISTED COLONOSCOPY INCREASES ADENOMA DETECTION RATE: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Aims Endocuff -a plastic device with flexible projections- mounted on the distal tip of the colonoscope, promises improved colonic mucosa inspection. Since data from individual studies are controversial, we aimed to elucidate the effect of Endocuff on adenoma detection rate (ADR), advanced ADR (AADR) and mean adenomas per colonoscopy (MAC).

Methods We performed literature searches in MEDLINE and Cochrane Library for randomized-controlled trials (RCTs) published as full papers in English language evaluating Endocuff-assisted (EAC) versus conventional colonoscopy (CC) in terms of ADR, AADR and MAC. The effect size on study outcomes was calculated using fixed or random effect model, as appropriate, and it is shown as RR (95% CI) or MD (95% CI).

Results We identified 9 studies enrolling 6038 patients. All studies included mixed population (screening, surveillance and diagnostic examinations). In three of them patients with a FOBT/FIT-positive were also included. Seven studies evaluated the first generation device; Endocuff Vision -the second
generation device—was used in 2 studies. All studies reported on ADR and EAC was associated with increased ADR compared to CC [RR (95% CI) = 1.19 (1.07 – 1.33); I² = 71%] and EAC benefits more endoscopists with ADR ≤ 35% compared to those with ADR > 35% [RR (95% CI) = 1.37 (1.11 – 1.69); I² = 51% versus 1.12 (0.99 – 1.26); I² = 74%]. Data from 7 studies did not detect any difference in terms of AADR and MAC between EAC and CC [RR (95% CI) = 1.01 (0.84 – 1.20); I² = 8% and MD (95% CI) = -0.30 (-0.17 – 0.78); I² = 99%]. Sub group analysis did not show any difference between the two device generations for any of the three endpoints.

**Conclusions** Endocuff-assisted colonoscopy increases adenoma detection rate compared to conventional colonoscopy. Endoscopists with lower ADR benefit more from Endocuff use.

### OP294 ENDORINGS ASSISTED COLONOSCOPY VERSUS STANDARD COLONOSCOPY FOR POLYP DETECTION IN SYMPTOMATIC AND ASYMPTOMATIC PATIENTS: A RANDOMISED CONTROLLED TRIAL

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**DOI** 10.1055/s-0039-1681470

**Aims** The Endorings is a distal attachment consisting of two layers of circular flexible rings that evert mucosal folds. Aims; to investigate if Endorings Colonoscopy (ER) improves polyp and adenoma detection compared to standard colonoscopy (SC).

**Methods** This multi-centre, parallel group, randomized controlled trial included screening, surveillance and symptomatic patients. Primary outcome: number of polyps per patient. Secondary outcomes: number of adenomas per patient, adenoma/polyp detection rates and withdrawal times.

**Results** Total of 556 patients (214 females, 342 males) randomized to ER (275) or SC (281). Mean age 67. Colonoscopy completed 532/556 (96%) cases. Endorings removed in 74/275 (27%) patients. In 66/74 (89%) cases removal was performed due to difficulties with sigmoid intubation. Remnant removed to facilitate retroflexion or polyp removal/retrieval. Total number of polyps in ER limb 571 vs. 443 in SC limb. Total number of adenomas in ER limb 361 vs. 343 for SC limb. Our study showed a statistically significant difference in the mean number of polyps per patient in both the Intention To Treat (ITT) (1.8 SC vs. 2.1 ER, p-value 0.02) and Per Protocol (PP) (1.8 SC vs. 2.25 ER, p-value 0.009).

<table>
<thead>
<tr>
<th>Tab. 1 Intention to Treat Analysis</th>
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<tbody>
<tr>
<td><strong>Standard Colonoscopy (SC)</strong></td>
</tr>
<tr>
<td>Mean polyps per patient</td>
</tr>
<tr>
<td>Mean adenomas per patient</td>
</tr>
<tr>
<td>Polyp detection rate</td>
</tr>
<tr>
<td>Adenoma detection rate</td>
</tr>
</tbody>
</table>

There was a trend towards a greater polyp detection rate in the ER colonoscopy (67.5% SC vs. 75.2% ER, p-value 0.05).

**Conclusions** Despite the high removal rate of Endorings, there was a statistically significant increase in the mean number of polyps in the ER limb compared to the SC limb. Our study shows promise for the EndoRings device to improve polyp detection.

### OP295 RETROFLEXION IN THE ASCENDING COLON IS A COSTLESS ENDOSCOPIC MANEUVER INCREASING ADENOMA DETECTION RATE

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**DOI** 10.1055/s-0039-1681471

**Aims** Missing polyps during colonoscopy is an important factor for the appearance of interval cancers especially in the ascending colon (AscCol). Study aim: Evaluate the contribution of retroflexion to polyp/adenoma detection.

**Methods** Consecutive patients with complete colonoscopy were prospectively evaluated for polyp detection in the AscCol. Protocol of AscCol examination for polyp detection: 1st Phase (Forward view – FrwV)= Insertion from the right flexure (RFx) to the caecum followed by withdrawal till the RFx and reinsertion to the caecum. 2nd Phase (Retroflexion): U-turn of the colonoscope in the caecum till the RFx, redressing to the FrwV and reinsertion to the caecum.

**Statistics** McNemar’s test, logistic regression model to identify factors associated with per-patient adenoma miss rate.

**Results** 628 out of 655 patients with successful RFx (95.9%) were analyzed, mean age 62.5 years, 49.52% males, indication for colonoscopy: screening (42.2%), Follow-up (62.0%) Diagnostic (58.0%), p < 0.01. In total 269 polyps and 205 adenomas were detected in the AscCol. FrwV identified 148 polyps and 119 adenomas yielding a polyp and ADR in the AscCol of 16.72% (95% CI: 13.8 – 19.64) and 13.38% (95% CI: 10.7 – 16.0) respectively. Retroflexion identified 121 more polyps and 86 adenomas improving the polyp detection and ADR in the AscCol to 28.66% (95% CI: 25.13 – 32.2) and 22.9% (95% CI: 19.04 – 25.5) respectively, (p < 0.01). Adenoma miss rate was 42% (86/205) and per patient adenoma miss rate was 11.62%. Retroflexion improves ADR mainly in the upper third of the AscCol (p < 0.01). Multivariate analysis showed that age > 60 years, adenoma detection in FrwV, indication “Follow-up” and previous surgery influenced ADR with retroflexion.

**Conclusions** Retroflexion in the ascending colon is a simple and safe maneuver that substantially increases the ADR in the ascending colon, especially towards the right flexure.

### OP296 ONLY LINKED COLOR IMAGING INCREASES COLOR CONTRAST BETWEEN COLON POLYPOLYS AND SURROUNDING MUCOSA

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**DOI** 10.1055/s-0039-1681472

**Aims** Evaluation of color difference between colon adenoma and surrounding mucosa as a potential explanation of higher detection rate. HD-white light endoscopy (WLE) is the gold standard in the detection of colon adenoma. Virtual chromoendoscopy cannot improve adenoma detection. Recently linked color imaging (LCI) was developed which is combining special light and a post processing in one imaging modality. First study results show a better visibility and a higher adenoma detection rate using LCI.

**Methods** Prospective acquisition of images from adenoma in the three light modes WLE, Blue Light Imaging (BLI) and LCI. Transformation of the images into L*a*b* color space. Measurement of color at areas of 31 × 31 pixels, two inside the polyp and 2 in the surrounding mucosa each. Calculation of the color difference according to the Delta E (Lab) Method.

We used paired t-test for statistical analysis.

**Results** In total 90 polyps were evaluated. Delta-E in WLE was lowest (12.34 ± 6.73). The highest Delta-E value was calculated for LCI (16.83 ± 10.85). The
Delta-E using BLI was 14.38 ± 11.42. The difference between LIC vs. BLI and BLI vs. WLE was not significant. He difference between WLE and LIC was highly significant (p = 0.002).

Conclusions Only linked color imaging leads to a significant increase of the color contrast of colon adenoma. This is a useful explanation for the reported increased adenoma detection rate using LIC.

**OP297 USE OF HIGH-DEFINITION EQUIPMENT IMPROVES POLYP DETECTION RATE: OBSERVATIONS FROM THE EUROPEAN COLONOSCOPY QUALITY INVESTIGATION (ECQI) QUESTIONNAIRE**

**Authors** Ono A1, Agrawal A2, Amaro P3, Brink L4, Fischbach W5, Hünger M6, Park JJ1, Koh JS1, Joo MK1, Lee BJ1, Chun HJ2, Lee SW3, Yang CH4, Jover R7, Kinnunen U8, Koulaouzidis A9, Patai Á10, Pecere S11,12

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**Aims** To assess the influence of the use of high-definition (HD) equipment on polyp detection rate (PDR) using questionnaire responses from across Europe.

**Methods** The development of the procedure questionnaire, by the European Colonoscopy Quality Investigation (ECQI) Group, has been previously described in posters presented at UEGW, 2015 and 2016. Data collection is an ongoing process: we analysed data collected between 2/6/16 and 30/4/18. The ESGE definition of PDR was used: all screening and diagnostic colonoscopies in patients aged ≥ 50 years were included in our dataset. A polyp was considered detected if there was a positive answer to ‘Polyp detected’ in any colon segment, or a polypectomy was reported under ‘Endoscopic intervention’.

A univariate binary logistic regression model was used to determine the effect of use of HD equipment on PDR.

**Results** 3335 of 6445 procedures met the criteria for PDR analysis, 2975 of which provided information upon their use (or not) of HD equipment. PDR approached significance (p = 0.054, see table).

**Tab. 1 Effect of type of high-definition equipment used on polyp detection rate**

<table>
<thead>
<tr>
<th>HD equipment used</th>
<th>PDR (n/N)</th>
<th>Odds ratio (95% CI)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scope and monitor/ screen</td>
<td>44.6% (804/1804)</td>
<td>Reference</td>
<td></td>
</tr>
<tr>
<td>Monitor/screen only</td>
<td>51.5% (50/97)</td>
<td>1.32 (0.88, 1.99)</td>
<td>0.180</td>
</tr>
<tr>
<td>Scope only</td>
<td>38.3% (98/256)</td>
<td>0.77 (0.59, 1.01)</td>
<td>0.058</td>
</tr>
</tbody>
</table>

**Conclusions** The use of HD equipment is associated with an improved PDR. The reported use of HD scope alone appears to produce a worse PDR than HD monitor/screen either with or without HD scope.

**OP298 FEASIBILITY AND LONG-TERM EFFICACY OF ENDOSCOPIC TREATMENT OF GASTROINTESTINAL STROMAL TUMORS IN UPPER GASTROINTESTINAL TRACT**

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**Aims** Endoscopic resection has been introduced for the treatment of subepithelial tumors (SETs) in the upper gastrointestinal tract (UGIT). We aimed in this study to investigate the feasibility and long-term efficacy of endoscopic resection of gastrointestinal stromal tumor (GIST) in UGIT.

**Methods** Between March 2005 and February 2018, 126 cases of GIST in UGIT were resected. We retrospectively analyzed clinicopathologic parameters and recurrence rate.

**Results** Mean age was 57.6 ± 12.4 years, and male: female ratio was 50:76. Fifty-one tumors (40.5%) were located in the 40.5% on body of stomach, followed by 34 (27.0%) on fundus, 24 (19.0%) on cardia, and 16 (12.7%) on antrum. One hundred four cases (82.5%) was resected by endoscopic submucosal dissection, followed by endoscopic mucosal resection in 10 (7.9%), and endoscopic submucosal tunnel dissection in eight (6.3%). Endoscopic full thickness resection was performed in three cases (2.4%). In terms of complication, eight macroperforation (6.3%), eight microperforation (6.3%), and seven major bleeding (5.6%) were noted. According to the National Institutes of Health classification, 64 patients (50.8%) were corresponding to very low risk, followed by low risk 42 (33.3%), intermediate risk 14 (11.1%) and high risk six (4.8%). En bloc resection rate was 72.2% (91/126), and R0 resection rate was 22.2% (28/126). R1 resection rate was 68.3% (86/126) and R2 resection rate was 7.1% (9/126). Among 68 patients who were followed-up longer than 12 months, two patients (2.9%) showed recurrence during 31.7 months of follow-up period.

**Conclusions** Endoscopic resection of GIST appears to be a feasible procedure with relatively low rate of recurrence, even low R0 resection rate.

**OP299 TUNNEL DISSECTION AS A TREATMENT OPTION IN PATIENTS WITH GASTROINTESTINAL STROMAL TUMORS**

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**Aims** To evaluate the effectiveness of submucosal tunnel dissection in treating patients with gastrointestinal stromal tumors.

**Methods** Since March 2014 twenty four patients with gastrointestinal stromal tumors were operated using a tunneling method. There were three men and twenty one women. Twenty seven tumors were removed in total. The average age of patients was 62.8 years. We operated patients with primary tumors, as well as patients who were under follow-up for a long time. The indication for surgery for the latter was a negative dynamics according to endosonography including increasing in size and changes in structure of the tumor. The average size of tumor was nineteen mm. The main point of surgery is the formation of tunnel in submucosal space through mucosal incision and enucleation of...
tumor preserving the integrity of capsule. Patients were maintained in the supine position, and general anesthesia was administered using mechanical ventilation.

**Results**

Intraoperative carboxyperitoneum occurred in four cases, it was resolved by abdominal decompression with the help of Verres needle. No other intraoperative or postoperative complications were observed. Patients were discharged the next day after surgery. Immunohistochemistry assay demonstrated sixteen gastrointestinal stromal tumors (nine specimens of low risk, seven of intermediate risk). In eight patients immunohistochemistry confirmed leiomyomas.

**Conclusions**

Endoscopic tunnel operations are technically feasible and can be used as a surgical treatment of subepithelial tumors of myogenic origin. Moreover, a minimal access significantly reduces the number of complications and a period of patients’ rehabilitation after operation.

**OP300 IMPLEMENTATION OF ENDOSCOPIC SUBMUCOSAL DISSECTION (ESD) IN EUROPE – SURVEY AFTER ESD EXPERT TRAINING WORKSHOPS 2009 – 2018**

**Authors**

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**Institute 1**

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**DOI** 10.1055/j-0039-1681476

**Aims**

To obtain information on implementation of ESD in participating centres of ten experimental ESD Training Workshops in Salzburg [Dig Endosc 2011;23:282 – 89].

**Methods**

ESD WORKSHOPS lasted 3.3 days under instruction by international experts, 177 trainees from 135 referral centers had participated once or twice. A brief questionnaire was mailed to participants of all 135 centres and reported data (n, %) analyzed.

**Results**

Completed data from 77 of 135 centres (57%), information on zero ESD from 32 (24%), no information from 26 (19%). ESD had been implemented without supervision by expert during initial learning. Nineteen (17%) of 109 centres had performed >150 ESD (professional level), 27 (25%) had 31 – 150 ESD (competent level), and 32 (29%) had each ≤ 30 ESD (initial learning) and zero ESD, resp.. Outcome (% as medium, range) of centres on initial learning (n = 425 ESD) is compared to centers with >30 ESD (n = 5439): ESD en bloc was 75 [40 – 80)% vs. 85 [49 – 100]%, conversion to hybrid-ESD 20 [0 – 100]% vs. 11 [0 – 51]% and to piecemeal-EMR 5 [0 – 45]% vs. 4 [0 – 15]%. Majority (65 – 70%) of ESD were in colorectum (35% malignant lesions) with low risk and satisfactory oncological outcome – even during initial learning (s. table). Overall, 30 day morbidity was 0.6 ± 2.2% (stenoses), and mortality 0.04% (2 cases).

**Conclusions**

ESD has been implemented at least in 46 centres across Europe on competent or professional level, with low risk during unsupervised learning. The majority (65 – 70%) are colorectal ESD, even during initial learning.

**OP301 COMPARISON OF NON-EXPOSURE SIMPLE SUTURING ENDOSCOPIC FULL-THICKNESS RESECTION (NESS-EFTR) AND LECS FOR GASTRIC SUBEPITHELIAL TUMORS**

**Authors**

Kim CG1, Choi DI2, Yoon HM3, Eom BW4, Ryu KW1, Kim YW1, Kim YI1, Lee JY1, Choi J1

**Institute 1**

National Cancer Center, Center for Gastric Cancer, Goyang, Korea, Republic of

**Aims**

Laparoscopy and endoscopic cooperative surgery (LECS) has the limitation of tumor exposure to peritoneal cavity. Recently, endoscopic full-thickness resection (EFTR) method which does not expose the tumor to peritoneal cavity (NESS-EFTR) was developed. We evaluated the NESS-EFTR technique with LECS.

**Methods**

We compared the outcomes of two prospective trials (with LECS or NESS-EFTR) for the resection of gastric subepithelial tumor. NESS-EFTR procedure including steps of laparoscopic seromuscular suturing which results in inversion of the stomach wall, EFTR of the inverted stomach wall, and finally, endoscopic mucosal suturing with endoloops and clips. Fifteen patients were prospectively enrolled in both studies, respectively. Primary outcome was the rates of complete resection. Follow-up endoscopy was performed 3 months after EFTR.

**Results**

A total of 11 (NESS-EFTR) and 14 patients (LECS) could be analyzed. The tumors were located at cardia in 64% (7/11) and 35.7% (5/14) of each group (p = 0.24). The tumor sizes (median) were not different between two groups (2.2 in NESS-EFTR and 2.6 cm in LECS, p = 0.12). The rate of complete resection was 100% in both groups. Total operation time (mean ± SD) is longer in NESS-EFTR group than that of LECS (198 ± 62 vs. 119 ± 36 minutes, p = 0.001). There is no complication except a transient fever in NESS-EFTR group. Peritoneal recurrence of GST was occurred in a patient of LECS group after 17 months after operation.

**Conclusions**

NESS-EFTR and LECS were successful in all patients. NESS-EFTR has the longer operation time, but has an advantage of non-exposure of tumor to peritoneal cavity. Further large-scale long-term follow-up study is needed.

**OP302 LONG-TERM CLINICAL OUTCOMES OF ENDOSCOPIC SUBMUCOSAL DISSECTION (ESD) IN GASTRIC EPITHELIAL LESIONS: A SPANISH SINGLE-CENTER COHORT**

**Authors**

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**DOI** 10.1055/j-0039-1681478

**Aims**

To analyze recurrence rates at 5-year follow-up after gastric ESD in a cohort of patients, according to different variables.

**Methods**

Patients with gastric epithelial lesions who underwent ESD were included from a Spanish single referral center. Prospective data (from 2008 to 2015) were collected about patients and lesions characteristics. Kaplan-
Meier curves were used to analyze the 5-year-recurrence rate and results were compared according to different factors (bloc vs. piecemeal resection, R0 resections, lateral margins (LM) involvement, histology) using log-rank test.

**Results** 49 patients with gastric ESD were initially included. 14 cases were excluded: 2 cases with positive vertical margin (VM+) because need of surgery; 3 cases with no epithelial lesions and 9 cases lost follow-up. Finally, data from 35 patients were analyzed. Most frequent location was lower third (62.9%) and morphology Type 0-Ila/lc (34.3%). Median size lesion was 26 mm. The main histology was Vienna 4 (48.5%) and Vienna 5 (34.3%). Median follow-up was 33.62 months (range 6–60). R0 resection rate was 80% and bloc resection rate was 85.7%. Two cases had LM+ and 5 cases LM unknown (20%). Local recurrence rate at 5-years was 11.4% (4 patients). A second ESD was performed in two of these cases. Recurrence rate was higher in LM+ and piecemeal resection groups, without statistical significance (p = 0.057 and p = 0.48) ESD can achieve high rates of long-term curative treatment in our cohort.

**OP303 FEASIBILITY OF ENDOSCOPIC SUBMUCOSAL DISSECTION USING DETACHABLE ROBOTIC ASSISTIVE DEVICE**

**Authors** Jang SH1, Choi HS2, Kim SH3, Jeon HJ4, Choi SJ5, Kim SH6, Lee JM7, Kim EJ8, Keum B1, Lee HS9, Kim CD1

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**DOI** 10.1055/s-0039-1681479

**Aims** Endoscopic submucosal dissection (ESD) is a standard treatment treatment of early gastric cancer without lymph node dissection. However, ESD still takes long procedure time and ESD related complications still exist. One of those reason is that there is no proper counter-traction during procedure. Many ways have been tried to overcome these limitations. Recently, our research team developed Endoscopic Assistive Robot (EAR). In this study, we improved previous Endoscopic assistive robot and conducted an in vivo test to evaluate the efficacy and safety of our device.

**Methods** We perform ESD was performed to imaginary gastric lesions in nonsurvival porcine models using our novel robotic assistive device. EAR can be mounted on GIF-Q260 endoscope and can be passed through overtube to porcine stomach, making it possible for clinical use. We devised two groups, conducted by experts and novice. We measured the time required to complete the ESD and complications involving perforation and significant bleeding in each group.

**Results** Total 12 cases of ESD were done. 2 cases were conventional ESD, each 5 cases were ESD with EAR by expert and novice. There was no significant difference in total procedure time per width, but dissection time was faster than robot ESD. There was no significant time difference between experts and novice. No perioperative complications occurred during the procedure.

**Conclusions** Our endoscopic assistive robot reduced dissection time and show its safety. Our robotic device could be helpful, especially in novice endoscopist.

**OP304 CLINICAL OUTCOMES AND POST-PROCEDURAL COMPLICATIONS OF ENDOSCOPIC SUBMUCOSAL DISSECTION OF GASTRIC NEOPLASIA INVOLVING THE PYLORIC CHANNEL**

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**DOI** 10.1055/s-0039-1681480

**Aims** Gastric neoplasia involving pyloric channel (GNPC) is technically difficult and post-procedural stenosis is concerned. We evaluated the feasibility and effectiveness of the endoscopic submucosal dissection (ESD) for GNPC, and predictive factors for stenosis during follow-up.

**Methods** Ninety-seven patients with GNPC underwent ESD from January 2007 to October 2017. We retrospectively analyzed the short-term clinical outcomes and post-procedural stenosis.

**Results** Among 97 patients, male were 59 (60.8%), and mean age was 63.1 years. Fifty-eight cases (59.8%) were tubular adenoma (42 low grade dysplasia, 16 high grade dysplasia) and 34 (35.1%) were early gastric cancer. In 46 cases (47.4%), conventional anterograde ESD without retroflexion in the duodenum was performed, and 51 cases (52.6%) were resected by the retroflexion method. Seventy-seven lesions (79.4%) were located at pyloric channel and either antral or bulb side, and 20 cases (20.6%) were located throughout antrum and bulb. En bloc resection rate and R0 resection rate were 86.7% (85/97) respectively. Post-procedural stenosis was observed in 16 cases (16.5%). By multivariate analysis, resected circumference of pyloric channel > 75% was the only predictive factor for stenosis (odds ratio; 8.15, 95% confidence interval; 1.97 – 33.74, p = 0.004). However, all the stenosis was managed with conservative method such as balloon dilatation. Compared with anterograde resection, retroflexion method was performed in tumors located throughout antrum and bulb (17/51, 33.3% vs. 9/46, 6.5%, p = 0.001), and larger tumors (17.1 mm vs. 11.8 mm, p = 0.004).

**Conclusions** ESD is a feasible method for treatment of GNPC. Retroflexion method may be effective for larger tumor located throughout antrum and bulb. However, if resected circumference of pyloric channel is over 75%, post-procedural stenosis is expected.

**OP305 LONG TERM SURVIVAL OF EARLY GASTRIC CANCER WITH SUBMUCOSAL INVASION AFTER ESD**

**Authors** Takagi Y1, Yamamoto K1, Michida T2, Sato Y3, Tokuda Y4, Tatsumi N1, Ito T1

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**DOI** 10.1055/s-0039-1681481

**Aims** Clinical outcome of early gastric cancer (EGC) with submucosal (SM) invasion after endoscopic submucosal dissection (ESD) is not fully elucidated. Additional surgery may decrease the mortality by lymph node metastasis, but can be an overtreatment for some patients with SM invasion gastric cancer. We investigated the clinical outcome for SM invasion gastric cancer after ESD.

**Methods** ESD was performed for 1559 lesions of EGC at our hospital between July 2006 to August 2018. 145 lesions were histopathologically diagnosed as tubular adenocarcinoma with submucosal invasion. Based on the Japanese guideline, we recommended the patients to undergo radical surgery or be followed up without additional treatment. Concretely, the patients whose histopathological findings revealed SM invasion depth were shallower than 500 μm, lymphatic and vascular invasion were negative, and horizontal and vertical margin were negative were followed up without additional treatment. Other patients were recommended to undergo radical surgery. Patients were divided into radical surgery group (n = 76) and no additional treatment group (n = 70). We retrospectively analyzed the disease-specific survival (DSS) and disease-free survival (DFS) in both groups.

**Results** 3 year and 5 year DSS are 98.4% and 98.4% in radical surgery group, and 100% and 100% in no additional treatment group. 3 year and 5 year DFS
were 97.4% and 97.4% in radical surgery group, and 98.1% and 98.1% in no additional treatment group, respectively. There are no statistically significant differences between the radical surgery group and no additional treatment group in DSS and DFS. Local recurrence rate was 2.6% in the radical surgery group and 1.4% in no additional treatment group.

**Conclusions**

This study demonstrates that the patients of SM invasion gastric cancer after ESD revealed high long term survival. The decision of treatment strategy based on the Japanese guideline seemed to be appropriate for SM invasion gastric cancer.

**OP307 ENDOSCOPIC SUBMUCOSAL DISSECTION FOR GASTROINTESTINAL NEOENDOCRINE TUMORS: A BICENTRIC PROSPECTIVELY COLLECTED WESTERN PRELIMINARY EXPERIENCE**

**Authors**

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**DOI** 10.1055/s-0039-1681483

**Aims**

Selected gastrointestinal (GI) neuroendocrine tumors (NETs) are suitable for endoscopic submucosal dissection (ESD) but its efficacy and safety in western countries are limited. The aim of this study is to review two European centers experience of endoscopic treatment of superficial GI NET by ESD.

**Methods**

Clinical and technical data of patients treated by ESD from two tertiary European centers were prospectively collected from October 2014 to November 2018. Complete resection (R0) was defined as clear lateral and vertical margins.

**Results**

Twenty-three ESDs of NET were performed in 21 patients (males 38%, mean age of 56 years). The majority of the lesions were located in the stomach (68%) followed by the rectum (26%), esophagus (4%) and duodenum (4%). For gastric NETs, 87% were associated to atrophic gastritis and 53% to previous history of multiples NETs. Complete endoscopic resection by en-bloc resection was achieved in all patients (100%). R0 resection rate was 71% (91% clear lateral and 73% clear vertical margins).

Median ESD duration time was of 60 min (20 – 240). Two cases presented small perforations, treated conservatively by antibiotics and clip closure. The median specimen size was of 25 (12 – 50) mm. Pathological examination showed 56% grade 1 NETs, 36% grade 2 and 4% grade 3. Fifteen lesions were characterized as pT1 (75%). Three patients were candidates for additional treatment: one received EMD for additional known lesions, one underwent surgery with oncological lymph node resection (finally pT2N1) and the one refused systemic therapy. Two cases of recurrence were identified at the end of a median follow-up of 18 months: one was managed endoscopically while the second refused treatment.

**Conclusions**

Our series of ESD for selected GI NETs showed favorable results in term of efficacy and safety. However, further studies are needed to determine the role of ESD compared to other resection modalities.

**Saturday, April 6, 2019 11:00 – 13:00**

**Esophagus diagnosis and ablation**

**South Hall 1B**

**OP308 MOLECULAR ENDOSCOPIC IMAGING FOR DETECTION OF BARRETT’S ESOPHAGUS (BE) USING NANOPARTICLES**

**Authors**

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**DOI** 10.1055/s-0039-1681484

**Aims**

Early detection of BE may allow for more effective surveillance. Molecular endoscopic imaging (MEI) permits visualization of disease-specific molecular alterations. Past studies on MEI have used antibodies for detection of disease-specific targets. In contrast, nanoparticles can be coated with stronger fluorophores and can also be loaded with ligands to multiple biomarkers. To date, no data is available on the use of nanoparticles for MEI. We aimed to assess the diagnostic applicability of MEI with nanoparticles for diagnosis of Barrett’s metaplasia. In addition, we aimed to compare the results with traditional MEI using specific labeled Muc-2 antibodies and histology.
Methods: Consecutive patients undergoing surveillance of known BE were included. Following careful inspection of the Barrett’s segment, biopsies were obtained and rinsed in PBS. Afterwards, biopsies were incubated with FITC labeled Muc-2 antibodies or biodegradable, pH sensitive nanoparticles coupled with FITC conjugated Muc-2. Afterwards, MEI was performed using the probe-based confocal imaging system. Esophageal squamous epithelium and gastric tissue samples were considered as controls. Fluorescence intensities were compared, followed by immunohistochemistry and final histopathological workout.

Results: 22 specimens were analyzed. No fluorescence signals were noted on samples from the squamous epithelium or from the stomach demonstrating the high specificity of the technique. Fluorescence signals were noted for traditional MEI using Muc-2 antibodies in intestinal type Barrett’s metaplasia corresponding to goblet cells in the histopathological examination. Of note, significantly stronger fluorescence signals were achieved with nanoparticles coupled with FITC conjugated Muc-2. MEI with nanoparticles for prediction of Barrett’s metaplasia corresponded in all cases to final histopathological examination.

Conclusions: This is the first study showing the applicability of nanoparticles for molecular endoscopic imaging. The use of highly-specific nanoparticles allow for targeted imaging of Barrett’s metaplasia. With the potential of nanoparticles allowing ligation to multiple biomarkers, future research is now focusing on identifying different grades of dysplasia.

**OP309 CLINICAL CONSEQUENCES OF NON-ADHERENCE IN SURVEILLANCE OF BARRETT’S ESOPHAGUS: A MULTICENTER PROSPECTIVE COHORT STUDY**

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DOI: 10.1055/s-0039-1681485

Aims: Guideline recommendations for surveillance of Barrett’s esophagus (BE) aim to reduce heterogeneity and to improve quality of care. We aimed to estimate the clinical consequences of non-adherence on (1) the endoscopic resectability of esophageal adenocarcinoma (EAC), (2) mortality due to EAC, and (3) the risk of misdiagnosis of grade of dysplasia.

Methods: In this multicenter prospective cohort study, data from BE patients were collected in 13 hospitals. We assessed the proportion of (non-)adherent endoscopies for both surveillance interval and Seattle protocol (1) in patients with EAC at stage ≤T1a or >T1a; and (2) in patients with mortality due to EAC.

Also, (3) the probability of misdiagnosis of grade of dysplasia due to non-adherence to the Seattle protocol was estimated with a multistate Markov model.

Results: 3815 endoscopies were performed in 726 BE patients; in 18 patients EAC was detected. Adherence to the recommended surveillance interval or the Seattle protocol did not influence endoscopic resectability of EAC (p = 0.68 & p = 0.34, respectively). Six patients died due to EAC. Two deceased during surveillance. The surveillance interval was among these patients, if non-adherent, shorter than recommended; the Seattle protocol was followed appropriately particularly in their last endoscopies. In the remaining four patients neoplastic progression was detected at surveillance endoscopies and they deceased after drop-out due to therapy complications or EAC recurrence.

The risk of misdiagnosis of grade of dysplasia was reduced by 23% if biopsied according to the Seattle protocol (OR 0.77, 95% CI 0.60 – 0.98).

Conclusions: The disadvantageous effect of non-adherence to guideline recommendations may be limited with respect to endoscopic resectability of EAC and mortality. These results are in line with the lack of evidence underpinning the guideline. Despite the proven effectiveness of the Seattle protocol, it is time-consuming and error-prone due to non-adherence. Other strategies should be evaluated to estimate the neoplastic progression risk.

**OP310 FEASIBILITY, SAFETY, TOLERABILITY AND DOSE-RELATED EFFICACY OF A NOVEL CRYOBALLOON SWIPE ABLATION (CBSAS[^9^]) DEVICE IN DYSPLASTIC BARRETT’S ESOPHAGUS**

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DOI: 10.1055/s-0039-1681486

Aims: Cryoballoon ablation is endoscopic cryotherapy for Barrett’s esophagus (BE), which offers potential advantages over heat-based ablation. Focal CBA has been promising for limited BE, whereas the novel 90°-swipe CBA (CBSAS[^9^]) ablates larger areas (90° × 3 cm) in a single-step. The controller software allows for dose adjustment (rate at which the diffuser traverses the 3 cm long catheter axis while emitting cryogen). CBSAS[^9^] has been feasible and safe in animal and pre-esophagectomy studies. This is the first clinical study to assess feasibility, safety and efficacy of CBSAS[^9^] for dysplastic BE.

Methods: Patients with flat BE (≤ 3 cm) and low/high-grade dysplasia (LGD/HGD) or residual BE after endoscopic resection (ER) were enrolled. We started dose-finding with semi-circumferential treatment at dose 1 (0.8 mm/s). This was escalated with 0.1 mm/s (N = 6 per dose) until the dose resulted in BE regression: 80% without dose-related SAEs (DR-SAEs). This effective dose (ED) was confirmed with circumferential treatment (N = 12). DR-SAEs included severe pain ≥ 7days or stenosis. Pain (VAS 0–10) and dysphagia (0–4) were evaluated at days 0, 1,7,30. Outcomes were technical success, DR-SAEs and efficacy (BE regression at 8-weeks follow-up).

Results: Twenty-five patients were included (median Prague COM3, 26% prior ER). Technical success was 92% (23/25pts). Device malfunctions occurred in 8%, all resolved with replacement. BE regression was 78% (IQR 68 – 86) for dose 1 (0.8 mm/s) and 85% (IQR 75 – 95) for dose 2 (0.7 mm/s), which was in turn defined as ED. Circumferential treatment with the ED resulted in 94% (IQR 89 – 97) BE regression. However, 2 patients (17%) developed a stenosis after circumferential treatment (1&3 dilatations). Median pain scores were 3 (IQR 1 – 5), 0 (0 – 0), 2 (0 – 0) and 0 (0 – 0) at days 0, 1,7,30 respectively. Median dysphagia scores were 0 at all days.

Conclusions: CBSAS[^9^] is feasible and a promising tool for ablating larger areas of dysplastic BE. However, because of concerns with respect to strictures, the dose that optimally balances efficacy and safety needs further evaluation in larger studies with direct circumferential treatment.
OP311 EVALUATION OF THE INTEROBSERVER CONCORDANCE OF THE ENDOSCOPIC CLASSIFICATION OF INTRAPAPILLARY CAPILLARY LOOPS FOR ESOPHAGEAL SQUAMOUS CELLS CARCINOMA OF THE JAPAN ESOPHAGEAL SOCIETY

Authors
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Aims Endoscopic evaluation of superficial esophageal squamous cancer (ESCC) is crucial to estimate the invasion depth and decide the most appropriate therapeutic strategy. Recently, the JES published a new magnifying endoscopic (ME) classification to predict the invasion depth of ESCC based on microvessels morphology, with a reported accuracy of up to 90%. The objective of this study was to evaluate the inter and intra-observer agreement of the JES classification in a Western oncological center.

Methods Images from 30 lesions with suspected ESCC were accessed by ten endoscopists according to the JES classification. Five observers were familiar with the new JES classification and had performed over 100 ME-BLI examinations, and five observers had limited experience with ME-BLI and/or JES classification.

Results Overall interobserver agreement of JES classification was substantial (0.61). Kappa level was 0.46 (moderate agreement) among Experienced endoscopists, and 0.51 (moderate agreement) among non-experienced. Agreement was poorer in B1/B2 lesions and there was a trend towards overstaging the lesions.

Conclusions Our study was the first to evaluate the interobserver concordance of the endoscopic classification of intrapapillary capillary loops for esophageal cells carcinoma of Japan Esophageal Society in a Western center. We demonstrated only a moderate interobserver agreement in both experienced and inexperienced endoscopist. Our results differ from what was observed in eastern studies and may reflect the learning curve in the interpretation of IPCL images.

OP312 INDIVIDUALS’ PREFERENCES FOR ESOPHAGEAL CANCER SCREENING STRATEGIES: A DISCRETE CHOICE EXPERIMENT

Authors
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DOI 10.1055/s-0039-1681488

Aims Screening for esophageal adenocarcinoma (EAC) and its precursor Barrett’s esophagus could possibly reverse the increasing incidence of EAC. Our objective was to determine individuals’ preferences for EAC screening and to assess to what extent procedural characteristics of screening tests predict willingness for screening participation.

Methods A discrete choice experiment questionnaire was sent by mail to 1000 individuals aged 50 to 75 years who were randomly selected from the municipal registry of Nijmegen. Each subject answered 12 discrete choice questions of two screening tests comprised of five attributes: EAC-related mortality risk reduction, procedure-related pain and discomfort, location, test specificity, and costs. A multinomial logit model was used to estimate preferences for each attribute level and to calculate relative importance scores of each attribute and expected uptake rates. A multinomial logit model was used to estimate preferences for each attribute level and to calculate relative importance scores of each attribute and expected uptake rates.

Results In total, 375 patients (37.5%) completed the questionnaire. Test specificity had the highest impact on respondents’ preferences, accounting for 27.2%, followed by pain and discomfort (26.8%), and mortality reduction (24.6%). The average expected uptake of EAC screening was 62.8% (95% CI: 61.1 – 64.5). Heavy pain and discomfort had the largest impact on screening uptake (-22.8%; 95% CI: -26.8 – -18.7) (Table 1). Male gender (OR: 1.86; P = 0.05), health status (OR: 0.18; P = 0.03), endoscopy experience (OR: 2.07; P = 0.02), and upper gastrointestinal symptoms (OR: 1.13; P = 0.001) were significantly associated with screening participation.

Table 1 Effects of changing the screening program characteristics on the probability of participation in esophageal cancer screening

<table>
<thead>
<tr>
<th>Attributes</th>
<th>Impact of attribute levels on probability of screening participation (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mortality reduction (per 1000 screened individuals)</td>
<td>2 per 1000 Reference 3 per 1000 +5.8%* 4 per 1000 +14.0%* 5 per 1000 +17.8%*</td>
</tr>
<tr>
<td>Pain and discomfort</td>
<td>No pain/discomfort Reference Moderate pain/discomfort Heavy pain/discomfort</td>
</tr>
<tr>
<td>Costs (€)</td>
<td>€0 Reference €25 €50 €75</td>
</tr>
<tr>
<td>Specificity (%)</td>
<td>Spec 70% Spec +3.2% Spec 90% Spec +12.7% Spec 100% Spec +17.1%</td>
</tr>
</tbody>
</table>

Conclusions Understanding individuals’ preferences for EAC screening tests helps to further design the optimal screening modality by selecting the attributes that maximize attendance. Based on our results, an optimal screening test should have a high specificity, cause no or low to moderate pain or discomfort and result in a decrease in EAC-related mortality.

OP313 ENDOSCOPIC CRYBALLOON ABLATION IS SAFE, WELL-TOLERATED AND HIGHLY EFFECTIVE IN THE ERADICATION OF ESOPHAGEAL SQUAMOUS CELL NEOPLASIA

Authors
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Aims Globally, 80% of all esophageal cancers are squamous cell cancer (ECC), arising from squamous cell neoplasia (ESCN). Although patients with ESCN have poor prognosis, curative endoscopic treatment can be performed for ESCN. ESCN mainly occurs in developing countries, with limited endoscopic expertise and resources. Hence, an easy-to-use, low-cost treatment would be of great value. The cryoballoon focal ablation system (CbfAS) is a novel endoscopic ablation therapy that comprises a portable handle with a through-the-scope catheter containing a conformable balloon. The balloon is simultaneously inflated and cooled, resulting in ice patches of ± 2 cm². CbfAS is easy to use and requires no capital equipment. We aimed to assess the safety, tolerability and efficacy of CbfAS for eradicating ESCN.

Methods In this prospective trial, patients with one flat-type unstained lesion (USL) on Lugol’s chromoscopy, < 6 cm and < 50% of the circumference with moderate/high-grade intraepithelial neoplasia (MGIN/HGIN) were enrolled. At baseline, the lesion was treated with side-by-side ablations of 10 seconds. Safety phone calls were performed at days 2, 7 and 30. Follow-up endoscopies with biopsies and retreatment for persisting lesions were performed at 3 month intervals. All patients underwent a 12-months endoscopy.

Results We enrolled 80 patients (59 MGIN, 21 HGIN) with a USL of median 3 (IQR 3 – 4) cm. Median 5 (4 – 7) side-by-side ablations were performed per patient, over a median ablation time of 5 (5 – 10) minutes. After a single
treatment, 70/78 patients (90%) exhibited CR and 8/78 (10%) had residual USeL and were retreated; all had CR 3 months later. At 12 months, 76/78 patients (97%) exhibited CR whereas 2 patients had a recurrent MGIN. No strictures or serious adverse events occurred. Post-procedure median VAS was 1/0/0 at days 2/7/30.

Conclusions Results of our prospective cohort study in China suggest that CBfAS of ESN is safe, well-tolerated, and highly effective in inducing endoscopic and histological remission.

OP314 ENDOROTOR ABLATION OF BARRETT’S ESOPHAGUS: A SAFETY AND FEASIBILITY STUDY

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Aims The aim of this study was to assess the safety and efficacy of a novel, non-thermal resection device (EndoRotor) for the ablation of Barrett’s esophagus (BE).

Methods Between January 2017 and September 2018, patients with BE were included from 2 tertiary referral centers. Inclusion criteria: BE 2–5 cm, with low-grade dysplasia (LGD), high-grade dysplasia (HGD) or residual BE after endoscopic resection (ER) of a lesion containing HGD or early esophageal adenocarcinoma. Exclusion criteria: previous ER of >50% circumference, or previous ablation therapy. During the procedure, we aimed to ablate at least 50–100% of the BE. Follow-up endoscopy was performed 3 months after treatment. Primary outcome: percentage of endoscopically visible surface regression at 3-months FU, and complications. Secondary outcome: procedure time.

Results Thirty patients (median BE C 0 (IQR 0–1) M3 (IQR 3–3.3)) were included. Eighteen patients had undergone ER prior to ablation. The median % BE ablated was 100% (IQR 94 – 100) with a median circumferential extent of 95% (IQR 50 – 100). Median procedure time was 42 minutes (IQR 33 – 60) and median ablation time was 28 minutes (IQR 20 – 45). Median BE surface regression at 3-months FU was 90% (IQR 80 – 99). Multiple residual Barrett’s islands were commonly seen. Serious complications occurred in 2/30 patients (7%): 1 perforation and 1 post-procedural bleed, both requiring intervention and hospitalization. 8/30 patients (27%) complained of dysphagia; 4 patients had a stricture requiring intervention. Non-circumferential scarring was seen and hospitalization. 8/30 patients (27%) complained of dysphagia; 4 patients (7%): 1 perforation and 1 post-procedural bleed, both requiring intervention.

Conclusions For ablation of Barrett’s esophagus, the EndoRotor seems non-inferior to established ablative techniques. However, complication rates seem higher and procedure time longer. Additionally, the difficulty level in operating the device is high, with a high potential for complications in inexperienced hands. For patients with therapy-naive BE, we advise against the use of the EndoRotor.

OP315 CHARACTERIZATION OF ESOPHAGEAL MICROBIOTA IN PATIENTS WITH BARRETT’S ESOPHAGUS AND ESOPHAGEAL ADENOCARCINOMA

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Aims The aim of our study was to characterize esophageal microbiota composition in patients with BE and EAC.

Methods 26 patients were enrolled: 10 healthy patients as control group; 10 with a diagnosis of BE and 6 with a new diagnosis of EAC. Genomic DNA was extracted from distal esophagus biopsies and V3-V4 regions of the 16S rRNA gene were sequenced by MiSeq Illumina platform. In patients with BE, biopsies were obtained from both metaplastic (BEM) and normal mucosa (BEU).

Results BE and EAC patients showed an overall higher level of biodiversity which was statistically significant between BE and control patients (Wilcoxon test for Phylogenetic Diversity Whole Tree metric p < 0.05). When evaluating β-diversity, a separation on the first axis was observed for unweighted Unifrac, in which control samples were significantly separated from both BE (p < 0.005) and EAC (p < 0.05), as well as BE were substantially diverging from EAC (p < 0.05). BEU samples showed significant higher values of α-diversity (PD whole tree) when compared with control patients (p < 0.05), while EAC shared similar values with EAC, being lower than BEU and higher than control patients. A substantial divergence on the first axis was registered for unweighted Unifrac with control patients significantly separated from BEU (p < 0.005) and EAC samples (p < 0.05). Among phyla, relative abundance analysis revealed a lower level of Firmicutes and a significantly higher percentage of Bacteroidetes in BEU and EAC compared with control subjects. BEM and EAC exhibited a significantly higher presence of Fusobacteria compared with control samples. At genus level, Streptococcus relative abundance showed a reduction in EAC when compared with BEM and control samples.

Conclusions These data describe a specific microbial signature for both BE and EAC and open new horizons towards the identification of potential risk factors for the progression.

OP316 EFFECTIVENESS OF IRREVERSIBLE ELEKTROPORATION USING NEWLY DEVELOPED ENDOSCOPIC ABLATIVE CATHETERS IN GASTROINTESTINAL TRACT: AN IN VIVO ANIMAL STUDY

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Aims Irreversible Electroporation (IRE) is an ablation technique that induces apoptosis by applying an electric field. IRE has several advantages over other ablation techniques. For this reason, the IRE has already been used as an adjunctive treatment in many areas of tumor therapy and has confirmed its possibility. The purpose of this study was to investigate the possibility of applying IRE therapy to gastrointestinal tract using newly designed endoscopic ablative catheters.

Methods The IRE was performed in the esophagus, stomach, and duodenum to six general anesthetized pigs. Two types of endoscopic IRE catheters were used. The gap between the electrodes was about 1.0 cm. One, a basket-shaped catheter was used for the esophagus and duodenum. The other is two electrode catheter used for stomach. The voltage was applied from 500V to 2000V, and the number of pulses was fixed to 60. The pigs were euthanized after 24hr from experiment day. After the IRE ablation on tissue, histological...
Results: Endoscopic IRE in the esophagus, stomach, and duodenum confirmed cell necrosis around the stimulation site. No damage was done to 500V in all tissues. The stomach caused necrosis of mucosa at 1000V, inflammation of submucosa at 1500V, and inflammation and vessel injury of all submucosa at 2000V. In the esophagus, separation of the layer was observed at 1000V, desquamation of layer and erosion of mucosa were seen at 1500V, and inflammation of submucosa was induced at 2000V. In duodenum, erosion and necrosis were seen in mucosa at 500V, inflammation in submucosa at 1000V, and perforation at 2000V.

Conclusions: Our newly designed catheters can be used to effectively ablate the esophagus, stomach, and duodenum. Further studies will be needed for the protocol about IRE ablation suited for esophagus, stomach and duodenum.

OP317 EVALUATION OF BARRETT’S ESOPHAGUS (BE) USING BLUE LIGHT IMAGING (BLI) AND LINKED COLOR IMAGING (LCI): EXPERIENCE OF 2 UNIVERSITY HOSPITALS

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DOI: 10.1055/s-0039-1681493

Aims: Endoscopic surveillance is mainstream to diagnose BE and its complications. BLI/LCI of ELUXEO system (Fujifilm, Tokyo, Japan) has emerged as a powerful image enhancement diagnostic tool for neoplastic lesions. The aim of our study was to evaluate the performance of this system to characterize BE and its complications.

Methods: We conducted a 6-month prospective study in 2 university hospitals. Patients with known BE were included. A thorough analysis was done by an expert endoscopist during gastroscopy: 1 or 2 areas of interest (AoI) were selected in every patient then studied in white light, BLI and LCI and photos were taken in every modality at 3 zoom levels. Mucosal pattern (villous, circular or tubular glands; absent or enlarged glands) and vascular pattern (regular vessels; enlarged, tortuous or absent vessels) were evaluated. Each AoI was biopsied separately.

Results: 25 patients were included (median age 65 +/- 9.5 years, 68% males) and 31 AoI were analyzed. Histology showed that 21 (67.7%) AoI were non-dysplastic BE (NDBE), 8 (25.8%) were High-grade dysplasia (HGD) or adenocarcinoma (ADC) and 2 were gastric metaplasia. Prediction of histology was 91.3% for NDBE and 100% for HGD/ADC. Regarding mucosal pattern, NDBE showed 100% regular glands with 71.4% circular pattern. For HGD/ADC analysis, the sensitivity for enlarged glands and absence of glands was respectively 50% and 70%, with 100% specificity, leading to a NPV of 83% and 91% and a PPV of 100%. Concerning vascular pattern, the vessels were regular in 100% of NDBE. For HGD/ADC the sensitivity for enlarged vessels, tortuous vessels and absence of vessels was respectively 100%, 87.5% and 37.5%, corresponding to a NPV of 100%, 95.2% and 80%.

Conclusions: In this preliminary study, ELUXEO associated to BLI/LCI has high sensitivity to detect NDBE and high specificity for HGD/ADC. Further prospective large scale trials are needed to validate our findings.

Procedures

OP318V LUMEN-APPOSING METAL STENT (LAMS) DISLODGMENT DURING POST-BARIATRIC ERCP: ENDOCOPIC BRIDGING WITH A DOUBLE-CHANNEL ENDOSCOPE

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DOI: 10.1055/s-0039-1681494

Introduction: EUS directed trans-gastric ERCP allows access to the excluded stomach through a gastro-gastrostomy in Roux-en-Y gastric bypass. We similarly fashioned a jejun-jejunal EUS-guided LAMS anastomosis to allow through-the-stent (TTS) ERCP in a patient with recurrent pancreatitis and duodenal switch (DS), a bariatrically altered anatomy distinctly precluding peroral ERCP. We present techniques for localizing the biliary limb in DS and for managing LAMS dislodgment.

Procedure: We successfully performed ERCP in DS as a three-stage procedure. Firstly, a EUS-guided hepaticogastrostomy (HG) was performed with a SEMS. Secondly, we placed a nasobiliary drain (NBD) through the HG across the ampulla into the biliary limb. After advancing the EUS scope into the alimentary limb, contrast was injected through the NBD to identify the biliary limb under EUS and fluoroscopic guidance. A 20-mm cautery-enabled LAMS was deployed to create a jejun-jejunosotomy bypass from the alimentary into the biliary limb. After balloon dilation of the LAMS, the papilla was reached through it with a pediatric colonoscope. Needle-knife sphincterotomy over the NBD and sphincteroplasty were performed. During colonoscope withdrawal, the LAMS proximal flange dislodged distally into the biliary limb. Attempts to reposistion the LAMS with forceps failed. A second overlapping LAMS was deployed to bridge the peritoneal gap, but failed to hold in place the distally dislodged LAMS. Both LAMS ended up lying across the peritoneal gap. A double-channel endoscope was used to successfully pull with dual traction the proximal flange of the first LAMS back into the second LAMS. Seven weeks later, we removed all stents and sutured the fistula endoscopically.

Conclusion: EUS allows tailoring entero-anastomoses for ERCP access to the individual bariatric patient anatomy. The risk of LAMS dislodgement during TTS-ERCP is not eliminated by the novel larger diameter LAMS. Dual forceps traction with double-channel endoscope seems simple and effective to manage LAMS dislodgement.

OP319V SUCCESSFUL RETRIEVAL OF A PROXIMALLY MIGRATED PANCREATIC STENT BY DIGITAL PANCREATOSCOPY

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DOI: 10.1055/s-0039-1681495

With the increasing use of pancreatic duct stenting, its complications have also been recognized. Proximal stent migration has been described in 5.2% of patients and it represents a challenging situation. Although there is no consensus for the best strategy for retrieval, several endoscopic techniques have been described. These techniques have a success rate of 87%, but not frequently distal pancreatectomy is needed. More recently, the use of digital pancreatectoscopy for this matter has been described.

We present 45 year-old male patient, with a bile leak after laparoscopic choledochectomy. An ERCP was performed and a biliary stent was placed to manage the bile leak. The procedure was complicated by a proximally migrated pancreatic stent placed to assist cannulation. After multiple failed removal attempts, a prophylactic stent for prevention of pancreatitis was placed and a decision for surgical retrieval by distal pancreatectomy was taken. During the
open surgery, the surgeon found “changes of acute pancreatitis”, decided to abort the procedure and placed a retroperitoneal drain. The patient was referred to our unit for another attempt of retrieval.

After two failed attempts using a biliary extraction balloon and an over the wire forceps, we decided to use digital pancreatoscopy, with which successful retrieval using a slim scope biopsy forceps was achieved. Afterwards, during a control pancreatography, a pancreatic leak was revealed, so a second digital pancreatoscopy was undertaken where we visualized the site of impaction of the PS and the previously located retroperitoneal drain. We decided to manage the leak with a new PS, without further complications. Patient evolved well and was discharged without the retroperitoneal drain 10 days after the procedure.

In this case we successfully retrieved a proximally migrated PS by digital pancreatoscopy and through the slim scope biopsy forceps. This way further complications and need for surgery were avoided.

**OP320V  ENDOSCOPIC DRAINAGE OF A GIANT NON-RESECTABLE IPMN AFTER PANCREATOSCOPY-GUIDED DIAGNOSTIC PROCEDURE**

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**DOI**  10.1055/s-0039-1681496

A 73 years-old male presented with a giant cystic lesion developed in the pancreatic lodge. The MRI confirmed a 180/70 mm collection, with T2 enhancement, developed from the main pancreatic duct. Patient had always been asymptomatic and we suspected a giant mucinous tumour or a large walled off necrosis after a misdiagnosed acute pancreatitis.

Intraductal papillary mucinous neoplasms of the pancreas (IPMN) are precancerous cystic lesions of the pancreas involving the main duct or its secondary branches [1]. This cystic tumour had a high risk of malignant transformation because of size and the communication with the main pancreatic duct [2 – 4] so we decided that surgical resection was the best strategy. However, the tumour was in close contact with the gastric wall and surrounded the retroperitoneal vessels so complete surgical resection was impossible.

Then, we performed trans-papillary drainage using a 40/10 mm metallic stent and then endoscopic biopsies by passing a transnasal endoscope through the biopsy forceps (Video). The biopsies showed non characteristic fibrotic tissue. However, due to the thick walls of the cyst we decided to attempt a second pancreatoscopy using the dedicated usable scope SpyGlass (Boston scientific, Boston, USA). Endoscopic aspect was typical with large papillas (Video) and biopsies with dedicated forceps confirmed a IPMN with low grade dysplasia.

Six months later the patient was still asymptomatic, the tumour dramatically decreased in size, and MRI showed a 60/40 mm cyst. After multidisciplinary team discussion, second attempt of surgery was proposed to resect this IPMN.

**OP321V  ENDOSCOPIC REMOVAL OF TUBULOVILLOUS ADENOMA WITH HIGH-GRADE FOCAL DYSPLASIA IN THE DISTAL COMMON BILE DUCT**

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**DOI**  10.1055/s-0039-1681498

**Introduction**  A pluripathology 80-year-old female was admitted for cholangitis. A dilatation of the common bile duct (CBD) and a possible distal cholecdocholithiasis was shown in CT scan. An ERCP was performed and the duct was swept with a balloon, showing a polypoid lesion of adenomatous appearance through the papilla. The pathology confirmed a tubulo-villos adenoma with high-grade focal dysplasia. An EUS revealed the presence of a polyp of 10 × 8 mm in the CBD. In accordance with a multidisciplinary committee and being a high risk surgical patient, an endoscopic treatment was indicated.

**Description of the technique**  The papilla is achieved with the duodenoscope and a papillolast is performed with a 12 mm pneumatic balloon. With the help of the Fogarty balloon and a biopsy forcep, the polyp is tractioned towards the duodenum and then the polypectomy is done with a pediatric hot snare. Later, a fulguration with soft coagulation is done and a fully covered self-expanding metallic biliary stent is placed. Follow-up at 2 months, no macroscopic lesion is observed with a baby scope cholangioscopy, after removing the stent. In addition, fulguration with Argon-Beam (30W) is applied in the site of polypectomy. In next follow-up at 6 months no remais of polyp is seen with a baby scope cholangioscopy. Pathology confirmed the absence of adenoma at 2 and 6 months. No complications detected during the follow-up.

**Conclusions**  Adenomas of the extrahepatic bile duct are uncommon benign neoplasms with an unknown malignant potential. Surgery is the current treatment, and there are only 5 published cases of endoscopic treatment, with good results in non-surgical patients. In our case, the key to achieve a technical success were to have a good visualization through the polyp (papillolast + stent) and the use of a pediatric polypectomy snare with the help of the balloon.
OP323V  ERCP PERFORMED IN A PATIENT WITH TOTAL SITUS INVERSUS VISCERUM

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Situs inversus viscerum is a rare congenital condition characterized by complete transposition of all viscera. Endoscopic exams are often challenging in these patients, namely ERCP.

We present a case of a 63-year-old patient with total situs inversus viscerum that presented with complaints of intermittent upper left abdominal pain. Abdominal CT scan showed gallstones in the common bile duct and gallbladder. An ERCP was performed with the patient in a supine position and the endoscopist at the left side of the patient. A side-viewing endoscope was used (Olympus TJF-Q180V). Because of the altered anatomy, papilla was in the right upper quadrant of the image and bile duct cannulation was made toward the direction of “1 o’clock”. Cannulation was performed with a standard sphincterotomy and guidewire. Cholangiography showed multiple stones in the gallbladder and filling defects in the distal portion of the common bile duct. Sphincterotomy was performed towards the “1 o’clock” reference. Several infracentimetric stones were removed with a Dormia basket and a Fogarty balloon. The patient was referenced for a surgical consult for cholecystectomy.

This is a case of successfully treated choleclocholithiasis in a patient with total situs inversus viscerum. We present figures and video of imagiological exams and ERCP procedure.

OP324V  ELECTROHYDRAULIC LITHOTRIPSY IN CASE OF SEVERE BILE DUCT STONES AFTER BILROTH-II

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**DOI** 10.1055/s-0039-1681500

Patient, male, 76 years old, admitted to our hospital with diagnosis: bile stone disease, obstructive jaundice with bilirubin 21 mg/dl, bile duct stones with biliary hypertension. Bilroth-II stomach resection due to ulcer bleeding 30 years ago. Common bile duct – 20 mm, common hepatic duct – 15 mm, cystic duct – 8 mm. Multiple bile duct stones of barrel and cubic shape, 25*20 mm in size. According to our experience, side-viewing duodenoscope is not a best choice in Bilroth-II cases. We performed duodenoscopy with forward-viewing HD-scope, canulated papilla, initiated cholangiography. We performed sphincterotomy with a sphincterotome, developed for reverse EST in Bilroth-II cases. Barrel-shaped triangular and cubic stones are the most challenging for endoscopic extraction. So, we failed to treat patient in routine way. Further methods of treatment offered: extracorporeal distant shockwave lithotripsy, percutaneous transhepatic drainage, surgery and endoscopic cholecholoholysis with direct lithotripsy. Endoscopy seemed to be the most balanced between risks and benefits of treatment. We repeated duodenoscopy with standard forward-looking 9 mm diameter HD-scope with instrumental channel 2.8 mm. As EST was already performed we could easily enter the bile duct with the scope. Cholangioscopy was performed with water filling and without gas inflaion. We visualised bile duct stones and crushed them with direct contact electrohydraulic lithotripsy with WALZ system. The procedure took one hour and 20 minutes. The procedure was performed with propofol sedation in our ERCP room.

Patient was discharged from hospital after 5 days with significant condition improvement. No signs of residual bile duct stones and no postoperative complications.

Direct contact electrohydraulic lithotripsy is effective and safe method in treatment of severe bile duct stones, especially in difficult anatomical and clinical situations. In Bilroth-II cases this technic can replace cholangioscopy with a very special devices.

OP325V  DON’T SKIP THE GIP

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**DOI** 10.1055/s-0039-1681501

**Aim** We report the case of a 59-year-old patient with intramucosal adenocarcinoma of the cervical esophagus, found within an esophageal inlet patch, successfully treated with endoscopic mucosal resection.

**Methods** A 59-year-old asymptomatic man with nondysplastic COM2 Barrett’s esophagus history was referred to our institution for a surveillance upper esophagogastroduodenoscopy (EGD). EGD showed a cervical esophageal 5 mm Paris Is lesion, arising from an esophageal gastric inlet patch (GIP). Biopsies showed high grade intra-epithelial neoplasia within the polygonal lesion and confirmed gastric-type mucosa in the surrounding esophageal inlet tissue patch. Endoscopic ultrasonography showed no evidence of submucosal invasion or lymph node invasion. After multidisciplinary review, the patient was referred for endoscopic mucosal resection (EMR). End-bloc cap-assisted EMR of the suspicious nodule was realized under general anesthesia (see video). Final histology EMR specimen showed radically resected (R0) well-differentiated intramucosal adenocarcinoma pT1m3 with no lympho-vascular invasion. No immediate or delayed complications were encountered. A 3 and 6 months surveillance endoscopy showed no local recurrence.

**Results** Esophageal Gastric Inlet Patches (GIP) are composed of islands of heterotropic gastric columnar epithelium in the cervical esophagus. They are usually incidentally found at endoscopy and have a reported prevalence of 0.18 to 14.5%. The most frequently accepted theory concerning the origin of an esophageal GIP is the sequestration of gastric mucosa in the developing esophagus. Esophageal adenocarcinoma rarely occurs in the cervical esophagus and is most often linked to inlet patches. About fifty cases of adenocarcinoma arising from GIP have been reported in the literature. GIP may contain normal gastric mucosa but also intestinal metaplasia. Significant association between GIP and Barrett’s esophagus have also been described.

**Conclusion** Esophageal GIP is a common underestimated and overlooked endoscopic finding. Even if regular GIP biopsies are not recommended, systematic careful endoscopic inspection should be advised to detect early malignancies.

**Best abstract awards**

**April 6, 2019**

**11:00 – 13:00**

**Congress Hall**

OP326  ANTIBIOTIC PROPHYLAXIS FOR EUS GUIDED FNA OF PANCREATIC CYSTIC LESIONS: A MULTICENTER, RANDOMIZED AND DOUBLE BLINDED CLINICAL TRIAL

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**DOI** 10.1055/s-0039-1681502

**Aims** Routine antibiotic prophylaxis for EUS-FNA of pancreatic cysts is suggested in guidelines, but evidence is conflicting. The aim of the study was to investigate whether the procedure without antimicrobial prophylaxis does not increase the incidence of infection.

**Methods** We conducted a multicenter, randomized, non-inferiority clinical trial controlled with parallel treatment from September 2014 to June 2018.
OP328 A RANDOMIZED CONTROLLED TRIAL ON THE CONTRAST ENHANCED GUIDED EUS-FNA AGAINST STANDARD EUS-FNA IN DIAGNOSING THE SOLID PANCREATIC LESIONS

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DOI 10.1055/s-0039-1681504

Aims To assess the efficiency of the contrast enhanced guided endoscopic ultrasound fine needle aspiration (CH-EUS-FNA) in comparison to standard endoscopic ultrasound fine needle aspiration (EUS-FNA) in diagnosing the solid pancreatic masses.

Methods This randomized controlled study included patients with the suspicion of pancreatic solid masses on transabdominal ultrasound or CT scan admitted in one academic medical center. There were excluded patients with cystic component more than 20% or patients with previous biliary or duodenal stenting. Two passes with 22G standard FNA needle were done in random order (established by computer at the start of the study) by using EUS-FNA or CH-EUS-FNA. For contrast assessment the contrast substance used was 2.4 ml Sonovue for each patient and the low mechanical index was 0.20. The diagnosis of EUS-FNA was based on the pathology analysis of visible core. The final diagnosis was based on EUS-FNA or surgical specimen results and on following up data every three month by imaging methods for at least six months.

Results There were included 150 patients and two of them were lost during follow-up. There were 99 adenocarcinoma, 13 neuroendocrine tumors, 3 schwannoma, 3 cholangiocarcinoma, 11 metastases, 19 benign lesions. The EUS-FNA pass and the CH-EUS FNA pass had the accuracy of diagnosis of 86.48% and 89.18%, respectively (p = NS), and the global accuracy of the two passes was 93.2%. All the false negative cases on CH-EUS-FNA were hypoenhanced. No difference between the two FNA passes was seen regardless the location, size or tumor stage.

Conclusions The diagnostic rate of core obtained by using 22G FNA needles with standard EUS-FNA and guided CH-EUS-FNA did not differ statistically.
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Aims Adenomas in Lynch syndrome (LS) have an accelerated progression to colorectal cancer. Despite low evidence, clinical guidelines recommend using high-definition and pan-chromoendoscopy (CE) for surveillance in LS. We aimed to compare the adenoma detection rate (ADR) between high-definition white-light endoscopy (WLE) and CE in individuals with LS.

Methods Multicenter, randomized and parallel study with high-level detector endoscopists, devoted to high-risk conditions of colorectal cancer. Adults with confirmed mutation (MLH1, MSH2, MSH6, PMS 2 and Epcam) were randomized 1:1 to WLE or CE. 244 individuals were required to demonstrate non-inferiority of WLE versus CE (non-inferiority margin of 15%; power 80%; drop-out rate 10%; significance of 0.025).

Results 256 subjects were included by 14 Spanish centers. Baseline characteristics (demographic, medical history, genotype) were similar between groups. The ADR for WLE versus CE were 28.1% (95% confidence interval 21.1%-36.4%) versus 34.4% (26.4%-43.3%) respectively (p = 0.281). The detection rate of lesions in WLE versus CE group were as follow: polyps 50.0% versus 57.7% (p = 0.004), serrated lesions 23.4% versus 37.5% (p = 0.015), proximal serrated lesions 10.2% versus 11.7% (p = 0.689), sessile serrated lesions 5.5% versus 3.9% (p = 0.554) and advanced adenomas 7.8% versus 3.9% (p = 0.183) respectively. The mean (± standard deviation) of lesions per patient for WLE versus CE were as follow: adenomas 1.04 (1.37) versus 0.86 (1.04) (p = 0.670), polyps 2.36 (1.77) versus 2.67 (2.29) (p = 0.004), serrated lesions 0.67 (0.89) versus 1.04 (1.38) (p = 0.004), proximal serrated lesions 0.25 (0.56) versus 0.25 (0.61) (p = 0.426), sessile serrated lesions 0.10 (0.31) versus 0.11 (0.67) (p = 0.660) respectively. The total procedural time and withdrawal time (mean ± standard deviation; in minutes) with WLE versus CE were as follow: 22.42 ± 8.72 versus 30.67 ± 12.84 (p < 0.001) and 13.5 ± 5.63 versus 18.37 ± 7.57 (p < 0.001) respectively.

Conclusions In a scenario with high-level detector endoscopists, high-definition WLE is an optimal and efficient endoscopic technique for surveillance of LS. CE prolonged the procedural time without increasing detection of relevant lesions.

OP330 METHYLENE BLUE-MMX FOR SCREENING COLONOSCOPY

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Aims Topically applied methylene blue dye chromoendoscopy is effective in improving detection of colorectal neoplasia. When combined with a pH- and time-dependent multimatrix structure, a per-oral formulation methylene blue formulation (MB-MMX) is directly delivered to colorectal mucosa.

Methods In a Phase III study, 50-to-75-year-old patients scheduled for colorectal cancer screening or surveillance colonoscopy were randomized between 200 mg MB-MMX, placebo, or 100 mg MB-MMX in a ratio of 2:2:1. The 100 mg MB-MMX arm was only for masking purposes. MB-MMX and placebo tablets were administered with a 4 liters polyethylene glycol-based bowel preparation. The primary endpoint was the proportion of patients with one adenoma or carcinoma (adenoma detection rate [ADR]) expressed as odds ratio (OR) with 95% CI between the 200 mg MB-MMX and placebo groups, while false-positive (resection rate for non-neoplastic polyps) and adverse event rates were secondary endpoints.

Results Across 1,205 randomized patients, ADR was higher with MB-MMX (273/485[56.29%]) than the placebo (229/479[47.81%]; OR: 1.46[1.09, 1.96]). The proportion of patients with non-polypoid lesion was higher with MB-MMX than the placebo (213/485[43.92%] vs. 168/479 [35.07%]; OR: 1.66[1.21, 2.26]), as was that for ≤ 5 mm adenomas (180/485[37.11%] vs. 148/479 [30.90%]; OR: 1.36[1.01, 1.83]), while no difference for those with polypoid or larger lesions was observed. The false-positive rate was similar across the study arms (MB-MMX:83/356[23.31%] vs. placebo: 97/326 [29.75%]). Overall, 0.7% of patients had severe adverse events with no difference between the two arms.

Conclusions MB-MMX led to an absolute 8.5% ADR improvement without increasing the removal of non-neoplastic lesions.

OP331 ENDOSCOPIC FULL-THICKNESS RESECTION OF COLORECTAL LESIONS – A DUTCH NATIONWIDE PROSPECTIVE COHORT STUDY

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Aims A subset of colorectal lesions is not suitable for conventional endoscopic resection because of increased risk for incomplete resection or perforation. Recently, endoscopic full-thickness resection (eFTR) was introduced to allow definite diagnosis and radical treatment of lesions that otherwise might have required surgical resection. We prospectively evaluated all eFTR procedures performed in the Netherlands with the full-thickness resection device (FTRD, Ovesco Endoscopy, Tübingen, Germany).

Methods All patients undergoing eFTR between September 2015 and October 2018 in 22 hospitals were included. To determine the technical success, we studied the number of macroscopic complete en bloc resections. Secondary outcomes were: histologically confirmed radical (R0) resections, full-thickness resections and adverse events. Standard descriptive statistics were used.

Results This prospective multicenter study included 401 procedures. The mean age was 69 ± 8.6 years and 62.6% of the patients was male. eFTR was performed for primary resection of T1 CRCs (n = 79), re-resection after previous (potentially) incomplete resection for T1 CRCs (n = 159), difficult adenomas (n = 146), submucosal tumors (n = 15) and for suspected motility disorders (n = 2). Technical success of all initiated procedures was achieved in 83.5% (n = 335/401). In 5.5% (n = 22/401) no histology could be obtained because the lesion either could not be reached or could not be retracted into the cap. R0 resection in the 379 cases amenable to eFTR was 79.7% (n = 302/379) and full-thickness resection was confirmed in 82.8% (n = 314/379). The median diameter of the resected specimen was 23.4 mm (range 5–45). Overall adverse event rate was 9.2% (n = 37/401) of which 2.7% (n = 11/401) required emergency surgery for 2 immediate perforations, 5 delayed perforations and 4 cases of appendicitis.

Conclusions Endoscopic full-thickness resection was technically successful in over 80% of procedures with an acceptable complication rate. The issue of delayed perforations needs further assessment as well as the risk for secondary appendicitis in appendical polyp cases.

**OP332 ENDOCOPIC PYLOROMYOTOMY (G-POEM), EFFICACY EVALUATION AFTER ONE YEAR, IN REFRACTORY GASTROPARESIS: A FRENCH MULTICENTRIC STUDY**

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**Aims** Long term results of G-POEM for refractory gastroparesis are lacking. Here we report the results of the largest multicenter study with long term follow up about G-POEM for refractory gastroparesis.

**Methods** Retrospective, multicentric study of all G-POEM cases, performed in six French expert centers, for refractory gastroparesis, within at least one year of follow up.

Primary Endpoint: One year clinical success defined by improvement of GCISi by at least one point.


**Results** Description of the population: 93 patients were included in 6 French expert centers. 65% were women, the medium age was 52 years old. About aetiologies: 31% diabetes, 25% post-surgery, 34% idiopathic and 8,5% systemic disease. The medium evolution duration of the symptoms was 73,5 months. The mean 4h remaining in stomach before G-POEM was 44,6%. The mean GCISi average before G-POEM was 3,6.

Technical success was achieved in 96,1%.

**Primary Endpoint:** Clinical success was achieved in 71% at 6 month, and 69% at one year, with an average decreasing GCISi score of 1,6 point.

**Secondary Endpoints:** In multivariate analysis, only an high fullness underscore was significantly associated with an efficacy of the G-POEM (OR = 2,3 (1,35 - 3,88) p = 0,002). 18,3% of the patients declared pain after the therapeutic, controlled by paracetamol and PPI. 4,1% of the patients had complications, with a positive evolution under medical treatment. At two years clinical success was 69% (n = 39).

**Conclusions** This study confirms the efficiency and safety of G-POEM in the treatment of refractory gastroparesis The clinical success after one year is achieved for 69% of the patients. Only a high fullness subscale of the GCISi predicts efficiency. G-POEM should be the first treatment in case of refractory gastroparesis.

**OP333 INCORPORATION OF TEMPORAL INFORMATION IN A DEEP NEURAL NETWORK IMPROVES PERFORMANCE LEVEL FOR AUTOMATED POLYP DETECTION AND DELINEATION**

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**DOI** 10.1055/s-0039-1681509

**Aims** As opposed to current automated polyp detection techniques, endoscopists will use information from previous video-frames to indicate the presence of a polyp. We aim to exploit this type of temporal information by introducing memory cells into an artificial intelligence (AI) system.

**Methods** Colonoscopy videos from 104 patients are included with 258 polyps. Shorter video-clips of each polyp are extracted and only a few frames were annotated by experts. These manual annotations are automatically propagated over the entire clip. The resulting, much larger annotated dataset is then used to train a convolutional neural network (CNN). This network is extended with a recurrent module, resulting in an AI system that uses knowledge from previous timesteps.

Frame-level sensitivity and specificity describe detection power. For delineation accuracy, the soft Dice score quantifies the amount of overlap between a delineation map and its ground truth considering the confidence of the network (a number between 0 and 1 where the latter means perfect overlap with 100% confidence).

**Results** Two different networks are trained for evaluation. A first CNN is trained solely on the expert annotated frames and a second CNN includes the temporal module and is trained on all the auto-generated annotations (called EXP and REC respectively). The results are shown in table 1. The incorporation of temporal information improves the network for each metric and especially increases specificity since it makes the network less sensitive to
Tab. 1 Sensitivity, specificity and soft Dice score for both networks evaluated on an independent test set. N = number of images used for training.

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Sensitivity</th>
<th>Specificity</th>
<th>Soft Dice score</th>
</tr>
</thead>
<tbody>
<tr>
<td>CNN1</td>
<td>EXP</td>
<td>0.83</td>
<td>0.54</td>
<td>0.38</td>
</tr>
<tr>
<td>CNN2</td>
<td>REC</td>
<td>0.91</td>
<td>0.74</td>
<td>0.56</td>
</tr>
</tbody>
</table>

Conclusions The inclusion of temporal information provides more accurate and confident results for polyp detection and delineation on endoscopic videos.

OP334 INTERVAL COLORECTAL Cancers AFTER NEGATIVE FECAL IMMUNOCHEMICAL TEST IN A 13-YEAR SCREENING PROGRAM

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Aims Interval cancers (IC) were considered in order to judge the round-specific sensitivity of fecal immunochemical tests (FIT) within a colorectal cancer screening program in Italy.

Methods This study concerns ICs diagnosed in a cohort of 50- to 69-year-olds screened with FIT repeatedly (up to 6 times) between 2002 and 2015. The test's sensitivity was calculated using both the Proportional Interval Cancer Rate and the Interval Cancer Proportion method.

Results Among 441,647 FITs performed for 123,347 individuals, 150 ICs were detected after a negative FIT. The overall incidence rate of IC was 1.87 × 10,000 person-years (95% CI 1.60 – 2.20), and was higher during the second interval year (OR 1.78; 95% CI 1.28 – 2.47), for proximal locations (OR 3.00; 95% CI 1.92 – 4.68), and among 60- to 71-year-olds (OR 2.37; 95% CI 1.61 – 3.50), with no significant differences regarding sex and stage at diagnosis.

The Proportional Interval Cancer Rate was 13.1%, with an overall sensitivity of 86.9% (95% CI 84.7 – 89.0). Sensitivity was lowest at the first screening round (81.5%; 95% CI 75.6 – 86.2), and increased up to 91.9% (95% CI 83.9 – 96.5) for subsequent rounds. Applying the Interval Cancer Proportion method, sensitivity was 83.9% (95% CI 81.1 – 86.3), and was highest at the first round (89.0%; 95% CI 85.5 – 91.6), ranging between 73% and 83.1% at subsequent rounds.

Conclusions A FIT sensitivity for cancer higher than 80% resulted in a low overall incidence of ICs. Due to intrinsic biases, the Proportional Interval Cancer Rate and the Interval Cancer Proportion method generated different trends in FIT sensitivity by screening round. IC incidence rates may provide an accurate picture of the harmful effects associated with false-negative test results.

OP335 POST-POLYPECTOMY SURVEILLANCE IN THE ENGLISH BOWEL CANCER SCREENING PROGRAMME: RESULTS OF FIRST SURVEILLANCE

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Aims The English Bowel Cancer Screening Programme (BCSP) offers biennial g-FOBT from 60 – 74 years. Post-polypectomy surveillance is offered within BCSP during the screening age range for those at “high risk” (≥ 5 adenomas or ≥ 3 at least one ≥ 10 mm) and “intermediate risk” (3 – 4 small adenomas or at least one ≥ 10 mm). CRC screening reduces mortality. To date, robust evidence to support post-polypectomy surveillance is lacking.

Methods Details were extracted from the BCSP database for individuals who attended surveillance from the start of the BCSP in 2006 until January 2017. Data were analysed using Stata 14. Advanced adenoma (AA) was defined as size ≥ 10 mm, ≥ 25% villous architecture, or HGD.

Results Results of first surveillance were available for 43088 individuals, of whom 51.9% were IR and 48.1% HR at baseline. The most advanced neoplasia detected at first surveillance is presented in the table. First surveillance was performed at the intended time interval (12 months for HR adenomas, 3 years for IR adenomas) in ≥ 89% of cases.

Tab. 1 NAA = non-advanced adenoma

<table>
<thead>
<tr>
<th></th>
<th>High risk at baseline (n = 20722)</th>
<th>Intermediate risk at baseline (n = 23366)</th>
<th>Difference between HR/IR</th>
</tr>
</thead>
<tbody>
<tr>
<td>No adenoma</td>
<td>39.1% (n = 8112)</td>
<td>56.1% (n = 12567)</td>
<td>p 0.000</td>
</tr>
<tr>
<td>NAA</td>
<td>48.0% (n = 9963)</td>
<td>35.3% (n = 7904)</td>
<td>p 0.000</td>
</tr>
<tr>
<td>AA</td>
<td>12.3% (n = 2545)</td>
<td>8.0% (n = 1798)</td>
<td>p 0.000</td>
</tr>
<tr>
<td>CRC</td>
<td>0.5% (n = 102)</td>
<td>0.4% (n = 97)</td>
<td>p 0.120</td>
</tr>
</tbody>
</table>

Subgroups: The subgroup with the lowest AA rate at first surveillance was those with one adenoma (≥ 10 mm) at baseline (n = 12397): 6.1% AA.

Conclusions CRC was diagnosed at first surveillance in a very small percentage of cases, reflecting the high quality baseline colonoscopy performed in the BCSP.

AA was found at first surveillance in 8.0% of those IR at baseline and in 12.3% of those HR at baseline. These results support the hypothesis that post-polypectomy surveillance may be safely delayed or discontinued in some groups, particularly those with one adenoma of ≥ 10 mm.

OP336 EFFECT OF THE NATIONAL SCREENING PROGRAM ON THE COLORECTAL CANCER INCIDENCE AND MORTALITY REDUCTION IN THE CZECH REPUBLIC

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Aims The organized non-population based National Colorectal Cancer (CRC) Screening Program in the Czech Republic has been running since year 2000. In January 2014, the transition to population-based setting has been implemented. The main target lesions of the CRC screening program are the adenomas and early cancers. Therefore, the relation between number of colonoscopies/ endoscopic polypectomies and CRC incidence and mortality decrease was evaluated.

Methods The analysis was based on the aggregate data from the Health Insurance Companies Databases, Preventive Colonoscopies Database and National Oncology Registry.

Results Between years 2000 and 2015, there was significant reduction of the CRC incidence (18.4%) and mortality (32.4%) observed. The number of colonoscopies and endoscopic polypectomies has been raising continuously every year. In 2015, there were 264,399 colonoscopies performed from the following indications: 227,905 (86.2%) symptoms, follow-up and therapy; 23,463 (8.9%) FIT positivity and 13,031 (4.9%) screening at age ≥ 55. In the same year, overall 60,120 endoscopic polypectomies were done (22.7% of all colonoscopies) in following age groups: 5,272 in age < 50; 5,627 in age 50 – 54 and 49,221 in age ≥ 55. In 36,494 colonoscopies performed within the organized CRC screening program in year 2015, there were 14,085 (38.6%) adenomas and 969 (2.7%) cancers diagnosed. 40.0% of the adenomas were advanced (≥ 10 mm, villous component, high-grade dysplasia). Majority of the cancers found were in stage I (45%) and II (18%).
Conclusions There is a very likely connection between the high number of diagnostic/therapeutic colonoscopies and CRC incidence and mortality reduction. To assess the benefit of the screening program to this effect, the comprehensive individual data from the new National Registry of Reimbursed Health Services needs to be evaluated. Supported by the Czech Ministry of Health grant No. 17 – 31909A and projects MO1012 and Progres Q 28/LF1.

OP337 TIME TO COLONOSCOPY AFTER A POSITIVE FECAL TEST AND RISK OF COLORECTAL CANCER

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Aims To evaluate if time to colonoscopy after a positive fecal blood test is associated with the risk of colorectal cancer or adenoma and to identify a safety-threshold.

Methods We used the data from the colorectal cancer screening programs of the Veneto Region (North East of Italy) from 2004 to 2017. The date and the outcome of each colonoscopy was recorded, together with the date of the corresponding positive fecal blood test.

Results Overall, 80% of the 123,165 colonoscopies that were included in the study took place within 60 days after the FIT, 13.7% between 61 and 90 days, 3.8% between 91 and 120 days, 1.7% between 121 and 180 days and 0.8% after more than 180 days (n = 1008).

Colorectal cancer and high-risk adenoma were more frequently detected among subjects whose colonoscopy was performed more than 180 days after the FIT (colorectal cancer: OR vs. 1 – 60 days 1.40, p = 0.001; high risk adenoma: OR 1.12, p < 0.001), while no significant association was observed between the time-to-colonoscopy and a diagnosis of intermediate- or low-risk adenoma.

Conclusions A time-to-colonoscopy shorter than 180 days after a positive FIT is not associated with an increased risk of colorectal cancer or high-risk adenoma. In the experience of the Veneto screening program, a longer interval was observed for a minority of patients (0.8%) and it was generally due to delays attributable to the patients.

OP338 GASTRIC ADENOMA OR EARLY GASTRIC CANCER IS AN IMPORTANT RISK FACTOR FOR COLORECTAL ADENOMA

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Aims Patients diagnosed gastric cancer have a higher prevalence and increased risk of colorectal cancer. But few studies have investigated the risk of colorectal cancer or adenoma in patients with early gastric cancer or gastric adenoma. The purpose of this study is to investigate the prevalence of colorectal adenoma or cancer in patient with gastric adenoma and early gastric cancer.

Methods We performed a prospective study. From January 2015 to December 2016, 110 patients who had treated stomach ESD due to early gastric cancer or adenoma were enrolled. Healthy age- and sex-matched controls were enrolled from general screening population. Demographic factors and colonoscopic findings of the cases and the controls were collected and prevalence and risk factor of colorectal adenoma and cancer of both groups are analyzed.

Results Data from 110 patient in the gastric neoplasm group (93 with gastric adenoma, 17 early gastric cancer) and 110 healthy control group participants were included in the statistic-cal analysis. The presence of gastric adenoma or early gastric cancer was an independent risk factor for colorectal adenoma (OR = 2.52 (1.34 – 4.75, P = 0.004) and colorectal advanced adenoma (OR = 3.19, 95% CI = 1.07 – 9.53, P = 0.037).

Conclusions 1. This is the first prospective randomized control study to confirm that gastric adenoma or early gastric cancer is an important risk factor for colorectal adenoma by identifying colonoscopic quality indicators that may affect adenoma detection. (High quality colonoscopy). The risk of colorectal adenoma and advanced colorectal adenoma increased significantly in patients with gastric adenoma and early gastric cancer. Therefore, we suggest that colonoscopic surveillance should be strictly considered in patient with gastric adenoma and early gastric cancer.

OP339 UK BOWEL CANCER SCREENING PROGRAM: A LOCAL EXPERIENCE OF POLYPECTOMY FOR POLYPS ≥ 2CM

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Institute 1 University Hospitals Birmingham, Birmingham, United Kingdom


Aims The English National Health Service (NHS) Bowel Cancer Screening Program (BCSP) was introduced in 2006 to improve CRC mortality by earlier detection of CRC and has been associated with a 15% reduction in mortality. We wanted to study the outcome of large polypectomies under BCSP in our department.

Methods We analysed all patients in the BCSP at a District General Hospital between 1/1/11 and 1/1/17 and selected those who had polypectomies for polyps ≥ 2 cm in diameter. Data was obtained from electronic patient records and follow-up was for at least one year.

Results A total of 299 patients, (209 M, 90F, age range 61 – 91y, median 70y) had at least one polyp ≥ 2 cm at index colonoscopy. 75.9% of polyps (n = 227) were removed en bloc, the rest by piecemeal EMR (pEMR). Site of polyps were: rectum (42), recto-sigmoid (12), sigmoid (183), transverse colon (12), hepatic flexure (6), ascending colon (13) and caecum (14). Size of polyps: 20 – 29 mm (196), 30 – 39 mm (66), 40 – 49 mm (18), > 50 mm (19). Paris morphology where documented: 1p (178), 1s (92), 1sp (17), lla (3), llb (0), lic (0), other (8). Polyp histology: carcinoma (4.7%, n = 14), tubulovillous adenoma (55.2%, n = 165), tubular adenoma (32.8%, n = 98), traditional serrated adenoma (1.7%, n = 5) and sessile serrated polyp (n = 1). 28 (9.4%) of patients underwent surgery, 4 of them with adenocarcinoma.

After initial polypectomy, one year follow up colonoscopy data was available in 116 patients. Of these, the polypectomy site was endoscopically clear in 103/ 116 (88.8%). The recurrence rate at 12 months increased with the size of the initial polyp, (20 – 29 mm = 5/75, 6.7%), (30 – 39 mm = 2/26, 7.7%), (40 – 49 mm = 3/5, 60%) and (50+ mm = 3/10, 30%), p < 0.05. The complication rate was 2.3%(n = 7): 1 early bleed, 5 late bleeds and 1 suspected perforation (not seen at laparotomy). The others were managed conservatively.

Conclusions Polypectomy was effective in removing large polyps found during the BCSP. There was a statistically significant difference between polyp size and recurrence. The complication rate for large polypectomy was low.

OP340 BREATH ANALYSIS CAN BE USED TO DETECT COLORECTAL CANCER: PROOF-OF-PRINCIPLE STUDY

Authors van Keulen KE1, Jansen ME2, Schrauwen RWM1, Kolkman JJ2, Siersma PD3

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Aims Color rectal cancer (CRC) is the third most common cancer diagnosis and a major cause of mortality worldwide. This study aims to assess if breath analysis with an electronic nose (Aeonose, the eNose Company, the Netherlands) can be used as a non-invasive screening test for CRC.

Methods This multicenter, cross-sectional, proof-of-principle study was conducted in three hospitals in the Netherlands. Consecutive colonoscopy patients aged ≥18 years old, without inflammatory bowel disease or (previous) malignancy, were included. A random sample of two-thirds of the data was used to develop a disease-specific breathprint with an artificial neural network (ANN) which was then used to blindly predict patient diagnosis of the remaining patients (internal validation). Finally, a new disease-specific model was developed with all available data to further improve the ANN.

Results Breath samples of 511 patients were collected. Sixty-four patients were excluded due to an inadequate breath tests (n = 51), incomplete colonoscopy (n = 8) or colitis (n = 5). Seventy patients were diagnosed with CRC and 128 patients did not have any colonic abnormalities. The prediction model for CRC had an AUC of 0.76, with a sensitivity and specificity of 83% and 60%, and predicted the blinded data set with a sensitivity and specificity of 85% and 62%. The final disease-specific model using all data had a diagnostic accuracy of 0.84 with a sensitivity of 95% and specificity of 64%.

Conclusions Breath analysis with the Aeonose can be used to detect CRC with high sensitivity. It is expected that with the inclusion of more patients the robustness of the ANN can be further improved for the detection of CRC.
p = 0.14). The risk for bleeding was significantly associated with the size of the adenoma (11% in adenomas <30 mm and 37% in adenomas ≥30 mm; p = 0.008) 5 of 20 patients with an ampullary adenoma resection developed acute pancreatitis postinterventional (25%). Three cases of intraoperative perforations were observed which could all be controlled endoscopically. One patient died after cholangitis, formation of a stricture with the consequence of perforation after dilatation.

Conclusions: The endoscopic resection of even large duodenal adenomas is possible in an experienced center but shows a high frequency of complications of which the most relevant is bleeding. Resections of ASDA are at higher risk for complications compared to NASDA.

OP344 EFFECTIVENESS OF PROPHYLACTIC MUCOSAL CLOSURE AFTER DUODENAL ENDOSCOPIC SUBMUCOSAL DISSECTION TO PREVENT HAZARDOUS COMPLICATIONS

Authors: Hoteya S¹, Okamoto Y¹, Ochiai Y¹, Suzuki Y¹, Tanaka M¹, Nomura K¹, Odagiri H¹, Yamashita S¹, Kikchi D¹, Matsui A¹, Miani T¹, Iizuka T¹, Tateiri Y¹, Tsubaki T¹, Koyama A¹, Araki T¹
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Aims: The endoscopic submucosal dissection (ESD) for superficial non-ampullary duodenal epithelial tumors (SNADETs) is technically challenging because of anatomical specificities and, to date, has not been validated concerning the high rate of complications. Especially, postoperative complications such as delayed perforation and bleeding are often hazardous. The aims of this study were to clarify the feasibility and effectiveness of prophylactic ligation to prevent peritoneal mucosal defect after duodenal ESD using endoscopic closing technique such as endoloop method or grasping method.

Methods: We analyzed 76 consecutive duodenal ESDs between February 2011 to November 2018. We divided the duodenal ESDs into 59 (77.6%) closure group (with prophylactic closure after ESD using clipping technique) and 17 (22.4%) non-closure groups. The outcomes (rate of general anesthesia, tumor/resection size, operation time, complete resection rate, delayed bleeding rate, cancer bearing rates and hospitalization days) were retrospectively analyzed.

Results: There was no significant difference between the closure and non-closure groups about the cancer bearing rates (52.9% and 47.5%), mean operation time (203.6 and 147.3 min), complete resection rates (88.2% and 96.6%) and hospitalization (13.1 and 10.1 days). The rate of general anesthesia was significantly higher in closure group (98.3%) than in non-closure group (88.2%). Delayed bleeding rate was significantly lower in closure group (1.7%) than that of non-closure group (23.5%). All patients with delayed bleeding were managed safely and successfully by coagulation using hemostatic forceps or clips. Delayed perforation occurred in only 1 patient in non-closure group, who required local closure and drainage of an abscess by open surgery.

Conclusions: Endoscopic closing technique such as endoloop method or grasping method were feasible and reliable. Using these technique, the prophylactic mucosal closure after duodenal ESD could prevent the hazardous delayed complications.

OP345 ENDOSCOPIC PAPILLECTOMY FOR NEOPLASTIC LESIONS OF THE AMPULLA OF VATER: A SYSTEMATIC REVIEW WITH POOLED-ANALYSIS

Authors: Fugazza A¹, Spadaccini M¹, Frazzoni L², Fuccio L², Hassan C², D’Amico F³, Lamonaca L³, Cravittio V³, Maselli R¹, Maroni L¹, Repici A¹, Andersson A¹
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Aims: Endoscopic papillectomy (EP) is currently accepted as a viable alternative therapy to surgery in both sporadic and familial ampullary lesions (AL). Many series have reported relatively low morbidity and acceptable outcomes compared to surgery, but most of them were retrospective studies with limited samples. Considering the lack of conclusive evidences, we performed a pooled analysis of the available literature to assess the safety and efficacy of EP for AL.

Methods: Electronic databases (Medline, Scopus, EMBASE) were searched up to September 2018. The search was restricted to English language full articles. Studies including patients with AL lesions endoscopically resected were eligible. The adverse event rates (primary outcome), complete resection, en-bloc resection, needs-for-further-treaments and curative resection (complete resection without recurrence) rates were pooled by means of a random- or fixed-effect model according to the degree of heterogeneity to obtain a proportion with a 95% confidence interval (CI).

Results: Twenty-nine studies were eligible for inclusion providing data on 1751 patients (mean ages ranging from 42 to 68 years). Nine studies were performed in United States, 1 in Australia, 10 in Asia, and the others in Europe; six studies were prospective. The mean of the lesion size ranged from 8.7 mm to 20.3 mm. Biliary and pancreatic stenting were performed in 33.3% (20.2 – 49.5%) and 75.2% (63.6 – 84.0%) respectively. The overall adverse event rates was 25.4% (CI: 21.5 – 29.7%) with rates of procedural-related bleedings and perforations of 10.7% (8.1 – 14 – 1%) and 3.2% (2.3 – 4.3%) respectively. Pancreatitis occurred after the 12.3% (CI: 10.7 – 14.1%) of the procedures and cholangitis rate was 2.9% (CI: 2.0 – 4.4%). Complete resection was 91.3% (CI: 86.7 – 94.4%) with a rate of en-bloc resection of 81.7% (CI: 73.6 – 87.7%). Multiple endoscopic treatments were needed in the 11.9% (CI: 7.2 – 17 – 2) of cases, and 74.1% (CI: 66.4 – 80.6) of the procedures were ‘curative’ in a mean endoscopic surveillance period ranging from 9.6 to 84.5 months.

Conclusions: Endoscopic papillectomy (EP) is a relatively safe technique compared to surgery for resecting ampullary lesions (AL). Even if efficacy outcomes, are heterogeneously reported by the different studies, EP still seems to be a reliable alternative therapy to surgery in term of curative resection rates.

OP346 SALINE-IMMERSION THERAPEUTIC ENDOCOPIC OF SPORADIC LATERALLY SPREADING NONAMPULLARY DUODENAL ADENOMAS

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Aims: Introduction: Sporadic laterally spreading nonampullary duodenal adenomas (SSNDA) are an uncommon incidental finding during oesophagogastroduodenoscopy. Endoscopic mucosal resection (EMR) in the duodenum is challenging due to increased risk of perforation and bleeding. Underwater EMR (UEREM) is a novel and effective endoscopic resection technique performed without submucosal injection. Saline-immersion therapeutic endo-
scopy (SITE) is an evolution of UEMR and saline solution is used instead of water to minimise the risk of water intoxication.

**Aims** Our aim was to evaluate the efficacy and safety of SITE-EMR for SLSNDA.

**Methods** Retrospective review of SLSNDA resected by SITE-EMR at our institution between May 2017 to October 2018. Demographic, clinical, endoscopic findings and follow-up data were analysed.

**Results** Nine SLSNDA (median size: 25 mm) were found in eight patients (4 male, median age: 69 year-old). One was located in D1, 4 in D2 and 4 in D3. En-bloc resection was achieved in two lesions (23%) while wide-field resection was performed in seven lesions (77%). Complete resection was achieved in seven patients (87.5%). A circumferential lesion involving the whole duodenal bulb was found in one case and SITE-EMR technique was not feasible as well as other alternative endoscopic resection techniques due to severe fibrosis; the patient was therefore referred for surgery and excluded from further analysis. Histological results revealed six (75%) tubulo-villous adenomas with low-grade dysplasia and two tubular adenomas low-grade dysplasia (25%). Immediate complications including perforation and bleeding did not occur. One patient (12.5%) presented with delayed GI bleeding 24 hours post procedure and was treated successfully with endoclips. Three cases (37.5%) of recurrences were identified at 3 months follow-up requiring further endoscopic treatment. No further recurrence was identified at 6 and 12 months follow-up in any patient.

**Conclusions** SITE-EMR of SLSNDA appears to be a safe and effective management with low recurrence rates at long term follow-up.

**OP347 EFFECT OF SUBMUCOSAL INJECTION IN ENDOSCOPIC PAPILLECTOMY OF AMPULLARY TUMOR: PROPENSITY-SCORE MATCHING ANALYSIS**

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**DOI** 10.1055/s-0039-1681523

**Aims** The role of submucosal injection (SI) in endoscopic papillectomy (EP) is controversial. **Objective** This study investigated the effects of SI before EP of ampullary tumors.

**Methods** All patients who underwent initial curative EP at our institution between March 2006 and March 2014 were retrospectively recruited. The presence of residual tumor after three months, recurrence-free survival and post-procedural adverse events were compared between the SI group and non-injection (NI) group. Propensity-score matching was performed between the two groups to reduce potential selection bias and confounding.

**Results** A total of 122 patients were included (SI: 26, NI: 96). Following propensity-score matching, 25 paired patients were selected. Residual tumor was not shown in the NI group, whereas seven (28.0%) patients in the SI group had residual tumor (p = 0.010). The recurrence-free survival of the NI group was significantly longer than that of the SI group (p = 0.036). Upon multivariate analysis, pathologic grade (p = 0.026) and SI (p = 0.033) were significantly related to recurrence-free survival. Post-procedural adverse events were not significantly different between the two groups.

**Conclusions** SI before EP of ampullary tumor was related to more frequent residual tumor and shorter recurrence-free survival and did not reduce post-procedural adverse events.

**OP348 UTILITY OF NEWLY DEVELOPED SHORT TYPE DOUBLE BALLOON ENDOSCOPY FOR ERCP IN POSTOPERATIVE PATIENTS WITH SURGICAL ANATOMIC VARIATIONS: A LARGE CASE SERIES**

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**DOI** 10.1055/s-0039-1681524

**Aims** The aim of this study was to evaluate the usefulness of new short DBE for ERCP in postoperative patients.

**Methods** From August 2015 to October 2018, ERCP using new short DBE (DB-ERCP) was performed in 238 postoperative patients (579 procedures). We retrospectively studied the success rate of reaching the blind end, the mean time to reach the blind end, the overall success rate of DB-ERCP, the mean time to complete ERCP related interventions, and adverse events.

**Results** The success rate of reaching the blind end was 99.1%. By type of reconstruction methods, the success rate of reaching the blind end was 95.6% in Roux-en-Y (R-Y) hepatocojejunostomy, 100% in R-Y partial gastrectomy, 96.1% in R-Y total gastrectomy, 100% in Billroth II gastrectomy (B-II), 100% in pancreateoduodenectomy (PD), 100% in pylorus preserving pancreatecduodenectomy (PPPD) and 96.7% in others. The mean time to reach the blind end was 16.1 min. By type of reconstruction methods, the mean time to reach the blind end was 25.6 min. in R-Y hepatocojejunostomy, 16.2 min. in R-Y partial gastrectomy, 17.5 min. in R-Y total gastrectomy, 6.8 min. in B-II, 9.2 min. in PD, 11.7 min. in PPPD and 15.0 min. in others. The overall DB-ERCP success rate was 95.5%. By type of reconstruction methods, the overall DB-ERCP success rate was 98.8% in R-Y hepatocojejunostomy, 100% in R-Y partial gastrectomy, 95.9% in R-Y total gastrectomy, 93.8% in B-II, 96.5% in PD, 98.9% in PPPD and 90% in others. The mean time to complete DB-ERCP was 61.1 min. By type of reconstruction methods, the mean time required to complete DB-ERCP was 79.4 min. in R-Y hepatocojejunostomy, 66.4 min. in R-Y partial gastrectomy, 74.4 min. in R-Y total gastrectomy, 44.1 min. in B-II, 41.3 min. in PD, 46.9 min. in PPPD and 51.5 min. in others. The occurrence of adverse events was 4.0%.

**Conclusions** The newly developed short DBE for ERCP in postoperative patients is useful and safe.

**OP349 LAPAROSCOPY-ASSISTED VS. BALLOON ENTEROSCOPY-ASSISTED ERCP FOR POST BARIATRIC ROUX-EN-Y GASTRIC BYPASS PATIENTS**

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**DOI** 10.1055/s-0039-1681525

**Aims** Roux-en-Y gastric bypass (RYGB) patients are at increased risk of biliary disease necessitating endoscopic retrograde cholangiopancreatography (ERCP), which poses a challenge due to the long endoscopic access route to the major papilla. The two most widely utilized treatment strategies are laparoscopy assisted ERCP (LA-ERCP) and balloon enteroscopy assisted ERCP (BEA-ERCP). There are few studies comparing these procedures. The aim of the current study was to compare the performance, benefits and harms of LA-ERCP and BEA-ERCP in a post RYGB patients.
Methods We compared electronic patient records of all ERCPs performed in RYGB patients at two tertiary care endoscopy centers in Oslo, Norway between 2008 and 2017. One center performed BEA-ERCP, while the other performed LA-ERCP for this patient group. The primary outcomes were procedure performance, success and adverse events.

Results During the 10-year study period, 61 BEA-ERCP and 39 LA-ERCP procedures were performed. Median procedure time was 125 minutes for BEA-ERCP, versus 182 minutes for LA-ERCP (p < 0.001). Procedure success rate was 67% for BEA-ERCP and 87% for LA-ERCP. The success rate for BEA-ERCP increased from 54% (first quintile) to 83% (last quintile) for BEA-ERCP, as compared to 88% to 100% for LA-ERCP. Concomitant cholecystectomy was performed during 64% (25/39) of LA-ERCP. Adverse events occurred in 26% (16/61) of BEA-ERCP and 28% (11/39) of LA-ERCP (p = 0.828). Serious adverse events, defined as Clavien-Dindo grade ≥ 3b, occurred in 1.6% (1/61) of BEA-ERCP and 7.7% (3/39) of LA-ERCP (p = 0.132).

Conclusions In experienced hands, laparoscopy-assisted and balloon enteroscopy-assisted ERCP for post bariatric Roux-en-Y gastric bypass patients have comparable success rates. Serious adverse events may be fewer with balloon-assisted ERCP, and it may be less time-consuming. However, concomitant cholecystectomy can be performed with LA-ERCP, but not with BEA-ERCP.

OP350 COMBINED RETROGRADE/ANTEGRADE ENDOSCOPIC APPROACH TO DISCONNECTED BILE-DUCT (DBD) AS A RESULT OF SEVERE POSTOPERATIVE INJURY

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Aims DBD is defined at ERCP by lack of proximal filling under pressure cholangiography with/without contrast extravasation. Combined percutaneous-endoscopic approaches are encouraging. We hypothesized that aggressive retrograde (ERCP) and/or antegrade (EUS) attempts at recanalization might salvage DBD for endotherapy. To assess feasibility and efficacy of an endoscopic treatment algorithm of DBD and characterize the heterogeneous techniques used.

Methods Among 756 database ERCPs at single center 2010–2018 for postoperative complications (strictures/leaks) in 261 patients (169 Liver transplant [LT]; 92 Other), 51 (20 female; age = 62.5 [34–92] years) had DBD (24 post-cholecystectomy, 15 post-LT, 12 Other). Procedural success/complications, technique and outcomes were determined.

Results Recanalization was achieved in 32/51 DBD, by means of ERCP in 16 (8 post-LT, 4 post-cholecystectomy); ERCP combined with EUS-guided antegrade approach in 15 (5 post-LT, 6 post-cholecystectomy), and EUS alone in 1. Lack of upstream dilation precluded EUS in 13, and recanalization failed in 6 despite EUS-hepatico-gastrostomy. 12 initial failures underwent surgical repair, 21/32 recanalizations required forced antegrade/retrograde techniques: hard end of stiff guidewire, intraductal needle-knife/hollow-needle puncture, transhepatic peritoneoscopy or magnetic-compression anastomosis. Recanalization took a mean (range) of 3.4 (1–6) ERCPs. Coincidental bilomas were endoscopically drained in 4 DBD. 26 Patients completed 31 treatment courses of stenting (2 plastic & 22 covered metal with/without plastic) after 269 (51–698) days of stents in place. After a mean follow-up of 479 (30–2200) days post-stent removal, 8 recurrences developed (5 successfully re-treated endoscopically, 2 undergoing stenting, 1 surgery). Overall complications: 7 (2 severe) post-procedural or stent related cholangitis, 4 post-sphincterotomy/EUS-BD bleeding, 2 pancreatitis, one death.

Conclusions 62.7% of DBDs can successfully be recanalized endoscopically by means of forced mechanical (guidewires, needles), thermal or magnetic techniques. Antegrade EUS approaches can salvage 50% ERCP failures. Mid-term treatment outcomes using this algorithm for DBDs appear comparable to those seen with partial postoperative strictures.

OP351 FEWER COMPLICATIONS FOLLOWING PERCUTANEOUS-TRANSHEPATIC-ENDOSCOPIC RENDEZVOUS PROCEDURES COMPARED TO PERCUTANEOUS TRANSPANECHAL CHOLANGIOGRAPHY ALONE

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Aims Biliary drainage can be challenging in cases of refractory bile duct obstruction and percutaneous-transhepatic-endoscopic rendezvous procedures (PTE-RVs) might facilitate biliary drainage even in these cases. This study evaluated the safety and the technical success of PTE-RVs in comparison to those of percutaneous transhepatic cholangiographies (PTCs) for biliary drainage.

Methods Over a 10-year period, percutaneous procedures were retrospectively analyzed in our tertiary referral center. The examinations were accomplished due to a previous or expected failure of standard endoscopic methods including ERC or balloon-assisted ERC to achieve biliary access.

Results In total, 553 percutaneous procedures including 163 PTE-RVs and 390 PTCs were performed in 244 patients during the 10-year period of observation. 71.3% of the patients had a malignant disease with pancreatic-carcinoma (32.8%) and cholangio-carcinoma (19.0%) as the most frequent, while 28.7% of the patients had a benign disease with choledolithiasis (45.7%) and postoperative biliarystrictures (31.4%) as the most frequent conditions. 50.8% of the patients had a postoperative change in bowel anatomy.

The technical success rate of PTCs was very high (89.7%) and although the technical success rate of PTE-RVs was significant lower, it was still high (80.4%; p < 0.003). Overall, adverse events occurred in 23.5% of all examinations; comparing, significantly less complications occurred following PTE-RVs than following PTCs (16.6% vs. 26.4%; p = 0.037).

Conclusions Rendezvous procedures offer a high technical efficacy and significantly less complications happen following PTE-RVs in comparison to PTCs. Considering this, PTE-RV should be preferred over sole PTC in terms of safety.

OP352 PATIENT RADIATION EXPOSURE DURING ENTEROSCOPY-ASSISTED ERCP IN SURGICALLY ALTERED ANATOMY

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DOI 10.1055/s-0039-1681528

Aims To provide data on radiation exposure in patients with surgically altered anatomy undergoing enteroscopy-assisted ERCP (EA-ERCP) during a 3-months registration period in comparison with conventional ERCP (C-ERCP) data.

Methods 20 EA-ERCP procedures were compared with 53 C-ERCP procedures. Data on patient and procedure characteristics were collected as well as radiation data: fluoroscopy time, total radiation dose and dose-area product (DAP).

Results Mean age in the EA-ERCP group was 58±5 years vs. 66±2 years in the C-ERCP group (p = 0.105) with a general M/F ratio of 67/33%. Surgical reconstructions were Roux-en-Y hepatojejunostomy, total gastrectomy, gastric bypass and Whipple’s resection. EA-ERCP procedures were restricted to biliary indications, whereas C-ERCP indications were both biliary and pancreatic. Mean fluoroscopy time was comparable in both groups (358±28 s vs. 350±40 s, p = 0.815), as was total mean radiation dose with a tendency to be
lower in the EA-ERCP group (83 ± 9 mGy) as compared to the C-ERCP group (97 ± 10 mGy, p = 0.449). However, DAP was significantly higher in the EA-ERCP group (2104 ± 187 μGy*m2 vs. 1464 ± 117 μGy*m2, p = 0.006), as is the total procedure time (82 ± 7 min vs. 41 ± 3 min, p < 0.001). These results indicate that C-ERCP procedures are more complex needing magnified fluoroscopy, whereas EA-ERCP procedures take more time for enteroscope insertion under wide field fluoroscopic guidance (as shown by increased DAP) with less complex ERCP manipulation (as shown by lower total dose).

**Conclusions** ESGE guidelines provide data on patient radiation exposure during conventional ERCP. However, no data are currently available on patient radiation exposure during enteroscopy-assisted ERCP in patients with surgically altered anatomy. Radiation exposure in EA-ERCP is different as compared to C-ERCP: EA-ERCP takes longer with a higher DAP, but with a lower total radiation dose. This is explained by the need of fluoroscopy during enteroscope insertion (higher DAP) to perform less complex ERCP procedures (lower total dose).

**OP354 TREATMENT OF REFRACTORY POST-SPHINCTEROTOMY AND POST-PAPILLECTOMY BLEEDING BY ENDOSCOPIC FIBRIN GLUE INJECTION. RESULTS OF A LARGE SERIES**

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**DOI** 10.1055/s-0039-1681530

**Aims** Bleeding is one of the most common complication after endoscopic biliary sphincterotomy (ES) and post-papillectomy. Endoscopic hemostasis can be achieved by epinephrine, hemoclip, thermal coagulation or combining these options. Transarterial embolization (TAE) or even surgery are the last options to control bleeding. Aim of this study is to evaluate the results and the long-term follow-up of treatment of refractory post-sphincterotomy and post-papillectomy bleeding with endoscopic injection of fibrin glue.

**Methods** Consecutive patients with refractory intraoperative or delayed bleeding following endoscopic sphincterotomy or papillectomy between October 2007 and February 2017 were identified from an electronic database. The following data were recorded: type of procedure with bleeding, treatment of first bleeding (diluted epinephrine injection, hemoclip or thermal coagulation), time between first and last bleeding, complications. Fibrin glue (Tissucol, Baxter, frozen storage; Beriplast P, CSL Behring, refrigerator storage) was injected only for refractory bleeding.

**Results** Over a 9 years period and a case volume of >10000 ERCPs, refractory post-sphincterotomy and post-papillectomy bleeding occurred in 63 cases, 26 intraoperative (40.6%) and 37 delayed (57.8%). All cases were treated with fibrin glue and stable hemostasis was reached in 61 (95.3%) cases except in 2 cases and in one case also after fully covered metal stent insertion, emergency arteriography diagnosed, and successfully treated in one case gastroduodenal artery pseudoaneurism, surgery was necessary in the other one. After fibrin glue injection 29 patients received a biliary stent, 32 a NBD, 2 patients both. Cholangiography through the NBD showed an intraductal fibrin clot in 2 cases (6.3%) easily removed with a Dormia basket. No cases of pancreatitis were reported after fibrin glue injection.

**Conclusions** Endoscopic fibrin glue injection for refractory post-sphincterotomy and post-papillectomy bleeding could represent a safe and effective treatment. Main limitation of this series is the lack of a control group.

**Saturday, April 6, 2019 14:30 – 16:00 Motility 2 Panorama Hall**

**OP355 GASTRIC PER ORAL ENDOSCOPIC PYLOROMYOTOMY (G-POEM): A RETROSPECTIVE SINGLE-CENTER EXPERIENCE**

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**DOI** 10.1055/s-0039-1681531

**Aims** Evaluate the safety and the efficacy of G-POEM as a treatment of patients with gastroparesis and refractory symptoms.

**Methods** Patients who were intended to benefit from G-POEM from January 2015 to November 2018. Symptoms were assessed with the Gastroparesis Cardinal Symptoms Index (GCSI) score. Gastric Emptying was evaluated with scintigraphy (GES) before gastric emptying time (HGET), Retention Percentage at 2 Hours (RPH2). Statistical evaluation was carried out using the software SPSS. Statistical difference is determined with the Wilcoxon Signed Ranks Test, with P < 0.05 considered as significant. Data are presented as medians with minimum and maximum.
Results 23 patients were treated. GES was delayed in all patients, median HGET was 143.5 min (101–802, n = 13) and RPH2 58.5% (40–104, n = 14). Follow-up was 3 months (1–24, n = 22). Aetiologies were diabetic in 13% of patients (n = 3), post surgical in 30% (n = 7), idiopathic in 30% (n = 7), post oesophago-gastrectomy in 26% (n = 6). Median duration of symptoms was 26 months (2–149). Median age was 55 years (17–73, n = 23), with 74% female (n = 17) and 26% male subjects (n = 6). Previous therapies included Botox injection in 39% of patients (n = 9), and Surgical jejunostomy in 13% of patients (n = 3). G-POEM was completed successfully in 22 patients (95.65%) with one failure due to fibrosis and thus no access to submucosal space. They were 3 immediate complications and no delayed complications (1 bulbar perforation, 1 gastric perforation and 1 hemorrhage) all managed endoscopically. Median length of myotomy was 2 cm (1–3, n = 12). Median GCSI before and after treatment were 4 (2.78–5, n = 11) and 2.11 (0.44–4.44, n = 13). GCSI was compared before and after treatment in 10 patients and were significantly improved (p = 0.022). GES were obtained in 14 patients at 3 months (1–10), with a significant reduction of RPH2 and HGET (p = 0.003 and 0.016).

Conclusions These retrospective data suggest that G-POEM is a technically feasible and safe procedure.

OP356 PERORAL ENDOSCOPIC SEPTOTOMY (POES) FOR ZENKER DIVERTICULUM: A PILOT STUDY

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Aims Treatments Zenker’s diverticulum (ZD) aim to dissect the muscle in order to remove the underlying dysfunctional condition. In the last decade, the endoscopic septotomy performed with a flexible endoscope has been reported as a safe and effective alternative to both open surgery and rigid endoscopic diverticulotomy. More recently, Li described a novel endoscopic technique, called Z-POEM, inspired by the per-oral endoscopic myotomy (POEM) developed for Achalasia. Patients with short septum diverticulum represent a difficult-to-be-treated subgroup of patients because of anatomical limitation leading to reduced operation space. Aim of this study was to investigate the efficacy and safety of a novel alternative third space approach, called Per-Oral Endoscopic Septotomy (POES) to treat symptomatic patients with short-septumZD.

Methods All patients with short-septumZD who were referred for endoscopic repair since September 2017, were considered for the study. Exclusion criteria consisted of previous treatments for Zenker, ZD with septum > 2 cm, use of anticoagulants, inability to provide informed consent. The POES technique consisted of a 15 mm mucosotomy performed, after submucosal injection, at the top of the diverticular septum, alongside its long axis. The underlying submucosa was dissected to create an endoscopic window to access the submucosal space and to visualize the muscular septum. Then this was dissected along its entire length, sparing the overlying mucosa. Mucosal incision was finally sealed with clips. Outcomes included improvement of dysphagic symptoms which were scored using the Dakkak and Bennett dysphagia scale (0–4) and procedure-related adverse events.

Results Fourteen patients (M/F:9/5, mean age:62.5 ± 13.2) underwent the POES. All procedures were performed under deep sedation. Mean size of ZD was18.1 ± 2.6 mm and mean dysphagia score was2.8 ± 0.4. Average procedural time was12.0 ± 2.6 min. No intra-nor post-procedural adverse events occurred. Septal miotomy was successfully completed in all patients. Procedure was performed in outpatient setting in 11out14patients. Dysphagia has significantly improved in thirteen out of 14 patients, with dysphagia score dropping from2.8 ± 0.4to0.2 ± 0.6. No recurrences were reported in a mean follow up time of7.3 ± 2.1months (range:6–12).

Conclusions According to the preliminary results of this pilot study, POES treatment provided safe and effective treatment of a specific difficult-to-treat group of patients with ZD.

OP357 PER-ORAL ENDOSCOPIC PYLOROMYOTOMY (G-POEM) FOR THE TREATMENT OF REFRACTORY GASTROPARESIS

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Aims G-POEM is a new promising method for the treatment of refractory gastroparesis (GP). So far, small studies have been published suggesting its short-term efficacy and low incidence of peri-procedural complications, but more data is necessary to assess the real role of G-POEM in clinical practice. The aim of our pilot study was to assess long-term (more than 12 months) clinical effectiveness, safety and technical aspects of G-POEM in consecutive patients with refractory GP.

Methods All patients with Gastroparesis cardinal symptom index (GCSI) > 2.3 and abnormal gastric emptying study (GES) were included. Main outcomes were a) the proportion of patients with treatment success (defined as a decrease of a total GCSI score of at least 40%) at 3, 12 and 24 M and b) incidence of adverse events.

Results G-POEM was performed in 9 patients (5 women) with the following etiologies of GP: 5 post-surgical, 2 diabetics, 1 idiopathic, 1 combined post-surgical and diabetic and all were successfully completed. Treatment success was achieved in 8/9 patients (88.9%) at 3, 12 and 3/4 (75%) at 24 M. The mean GCSI score decreased from 3.3 ± 0.8 to 1.0 ± 0.3 (p < 0.001), 1.0 ± 0.7 (p = 0.02) and 1.4 ± 0.9 (p = 0.15) at 3, 12 and 24 M after the procedure. In those patients with a treatment success, no recurrences have occurred so far. In one patient, there was a leak on POD 1 and he needed additional clips to safely close the incision. One patient experienced delayed bleeding from gastric ulceration, which was successfully treated endoscopically, all remaining patients recovered uneventfully. GES improved/normalized in all patients.

Conclusions G-POEM was effective in 88.9% of patients and the effect seems long-lasting. (Supported by a grant from the Czech Ministry of Health 17 – 28797A).

OP358 SUBMUCOSAL TUNNELLING ENDOSCOPIC SEPTUM DIVISION (Z-POEM) FOR ZENKER’S DIVERTICULUM: A NEW EMERGING TECHNIQUE COMARED TO CONVENTIONAL ENDOSCOPIC SEPTOTOMY

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Aims Zenker’s diverticulum (ZD) is an acquired protrusion of the esophageal wall. A wide variety of different treatment techniques have been published. Historically ZD managed by surgery and for last few years endoscopic septum

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division is done. We compared the clinical success of Z-POEM for ZD with conventional.

**Methods** Patient treated with conventional septotomy from 2013 to 2016 and with Z-POEM from 2016–2018 for ZD, were included in our retrospective data analysis. A total 15 patients (9 men), who were presented symptomatic ZD were treated with conventional septotomy (n = 8) and Z-POEM (n = 7). A mean age was 71.4 years (range 67 – 81). The most common symptom was dysphagia (78.6%), which was recorded by a 0 – 4 score (0 = no dysphagia, 1 = solids, 2 = semisolids, 3 = liquids, 4 = saliva).

**Results** Clinical response was significantly more frequent in the Z-POEM (50.0% vs. 0%; P < 0.05). Z-POEM patients had shorter mean hospital stay than conventional septotomy patients (1.1day vs. 2.5day; P < 0.05) despite longer procedure time of Z-POEM (49 min vs. 34.5 min; P < 0.05). Conventional septotomy shown significantly longer mean remaining length of septum than Z-POEM (5.5 mm vs. 2.6 mm; P < 0.05). The complete resolution of sole complaint regurgitation by Z-POEM (100% vs. 37%; P < 0.05). Patients were followed for at least 18 months and showed a favourable outcome; more recurrence of symptoms in conventional 3/8 vs/ 0/7 in Z-POEM (37.5% vs. 0%; P < 0.05). Rate of adverse events significantly less in the Z-POEM group (14.3% vs. 62.5%; P < 0.05). There were no cases of bleeding in Z-POEM and in conventional septotomy cases (25%) bleeding who required endoscopic intervention.

**Conclusions** POEM allows for a longer myotomy than conventional septotomy, which may result in improved clinical outcomes. Z-POEM appears to be an effective and safe alternative to conventional septotomy in patients with ZD.

**OP359 SIX YEARS OF SINGLE CENTER EXPERIENCE WITH PERORAL ENDOSCOPIC MYOTOMY (POEM)**

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**Aims** POEM has proved excellent mid-term efficacy even when compared with other standard methods for treatment of achalasia, but the long-term durability still needs to be confirmed. Nevertheless, the high risk of post-POEM reflux tempers the enthusiasm. The aim of our study was to assess the long-term clinical outcome of POEM and a thorough analysis of post-POEM reflux.

**Methods** A retrospective analysis of prospectively collected data of patients undergoing POEM (December 2012-November 2018). All patients were scheduled for follow up at 3, 6, 12 M and every year after POEM. Upper GI endoscopy, HRM and 24-hour pH monitoring were performed 3M after POEM; endoscopy was then repeated between 24–36 M. Main outcomes were treatment success defined as ES < 3, recurrence rate and reflux parameters evaluated by 24 h pH-metry, presence of reflux esophagitis, reflux symptoms and use of PPIs.

**Results** A total of 295 patients with achalasia underwent 308 POEMs. Follow-up visits at 3, 12, 24, 36 and 48 M were completed in 238, 167, 122, 66 and 25 patients At 3, 12, 24, 36 and 48 M treatment success was achieved in 97% (CI 95 – 100), 95% (91 – 98), 90% (84 – 95), 83% (74 – 92) and 83% (74 – 92) of patients. A total of 24 patients experienced treatment failure (n = 6) or recurrence (n = 18). At 3 M, RE was observed in 101/238 (42.4%, LA C/D in 11 patients). Abnormal acid exposure was detected in 89/208 (42.8%) patients. At 24 – 36 M, endoscopy was performed in 82 patients and RE was present in 25 patients (30.5%). PPIs were administered to 38.4% and 40.1% of patients at 3 and 24 M, respectively.

**Conclusions** POEM is a highly effective endoscopic treatment for achalasia with sustained treatment success of more than 80% at 24 and 36 M. Post-POEM reflux is present in almost 40% of patients, thus remaining a crucial clinical challenge in safety profile of the procedure.

**OP360 ESOPHAGEAL CLEANSING BEFORE POEM – A SIMPLE AND EFFECTIVE TECHNIQUE**

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**Aims** To devise a simple yet effective method for pre procedural oesophageal preparation for POEM.

**Methods** We have devised a scoring system depending on the esophageal mucosa, presence of fluid/froth and severity of candidial infection on the initial endoscopy.

- Grade I – clean esophagus
- Grade II – presence of fluid/froth + crumpled but normal mucosa
- Grade III – fluid/froth + intermittent esophageal candidiasis
- Grade IV – fluid/froth + severe esophageal candidiasis
- Grade V – extensive food residue with candidial infection

This is a comparative analysis of 100 patients with achalasia cardia confirmed on endoscopy and HRM. The first 50 (Group – A) patients were prepared with conventional preparation:

1. Clear liquids for 48 hours
2. NBM for 24 hours prior to POEM
3. Thorough wash with saline day before POEM

The subsequent 50 patients (Group – B) were prepared with simple and novel method:

1. patients are kept on warm water and a “carbonated drink” only
2. NBM for 6 hours prior to POEM
3. No wash was given.

**Results:**

- Grade I 14 12
- Grade II 13 21
- Grade III 13. 06
- Grade IV 06 07
- Grade V. 04. 04

No difference was found in group I to III as far as luminal clearance was concerned.

Group-B was superior in terms of shorter stay, less cost (10000 INR less) and more compliance. All patients of grade-V and two patients of grade-IV in group-A required additional wash prior to POEM due to food residue where group-B patients had clear lumen even in grade-IV and V. Group-B patients had less exposure to anesthesia as and less risk as they had much clearer esophageal lumen.

**Conclusions** Simple warm water before POEM, cleans the oesophagus far better than any other agent. Decreases time of preparation and improves patient compliance. Very cheap and cost effective. Reduces anaesthesia risk and time.

**OP361 AN NOVEL DEVICE FOR ENDOSCOPIC RECORDING GASTROINTESTINAL SLOW WAVE**

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**DOI** 10.1055/s-0039-1681537

A simple and effective method for pre procedural oesophageal preparation for POEM.

**Methods** We have devised a scoring system depending on the esophageal mucosa, presence of fluid/froth and severity of candidial infection on the initial endoscopy.

- Grade I – clean esophagus
- Grade II – presence of fluid/froth + crumpled but normal mucosa
- Grade III – fluid/froth + intermittent esophageal candidiasis
- Grade IV – fluid/froth + severe esophageal candidiasis
- Grade V – extensive food residue with candidial infection

This is a comparative analysis of 100 patients with achalasia cardia confirmed on endoscopy and HRM. The first 50 (Group – A) patients were prepared with conventional preparation:

1. Clear liquids for 48 hours
2. NBM for 24 hours prior to POEM
3. Thorough wash with saline day before POEM

The subsequent 50 patients (Group – B) were prepared with simple and novel method:

1. patients are kept on warm water and a “carbonated drink” only
2. NBM for 6 hours prior to POEM
3. No wash was given.

**Results:**

- Grade I 14 12
- Grade II 13 21
- Grade III 13. 06
- Grade IV 06 07
- Grade V. 04. 04

No difference was found in group I to III as far as luminal clearance was concerned.

Group-B was superior in terms of shorter stay, less cost (10000 INR less) and more compliance. All patients of grade-V and two patients of grade-IV in group-A required additional wash prior to POEM due to food residue where group-B patients had clear lumen even in grade-IV and V. Group-B patients had less exposure to anesthesia as and less risk as they had much clearer esophageal lumen.

**Conclusions** Simple warm water before POEM, cleans the oesophagus far better than any other agent. Decreases time of preparation and improves patient compliance. Very cheap and cost effective. Reduces anaesthesia risk and time.
Aims Gastric slow waves regulate peristalsis, and gastric dysrhythmias have been implicated in functional motility disorders. To accurately define slow wave patterns, it is currently necessary to collect recordings during open surgery, which is invasive and limit their application. We therefore developed a novel gastric slow wave mapping device for use during endoscopic procedures. We aimed to assess feasibility of the new device for acquisition of gastrointestinal slow wave.

Methods The device consists of a spreading catheter constructed of a flexible core coated with Pebax. Acquisition of gastric electrical signals was performed on healthy fasted weaner pigs under general anesthesia. Once deployed with endoscopic guidewire, catheter arrays is revealed with 12 electrode at 5 mm intervals. A multi-channel recorder (Acknowledge 4.4, MP150; Biopac Systems, Santa Barbara, CA) was used to record gastric myoelectrical activity throughout the study. We compared gastric electrical signals from gastric mucosal according to various lesions.

Results Gastric slow wave activity was successfully recorded simultaneously via both the novel endoscopic probe and the serosal measurement. The mean amplitude was 0.67 ± 0.05 mV in endoscopic probe and 1.07 ± 0.11 mV in reference. Recordings from the device and a reference array in pigs were identical in frequency, and activation patterns and velocities were consistent.

Conclusions In conclusion, the novel endoscopic device achieves high-quality mucosal slow wave recordings. It might be applied for endoscopic diagnostic studies to document slow wave patterns in patients with gastric motility disorders.

Saturday, April 6, 2019  14:30 – 16:00  Preparation  Club A

OP362 PUBLIC ATTITUDES TO COLONOSCOPY: EMBARRASSMENT LEVELS AND COLONOSCOPY

Authors Bhandari P1, Amlani B2, Radaelli F3
Institute 1 Department of Gastroenterology, Portsmouth University Hospital, Portsmouth, United Kingdom; 2 Medical Affairs, Norgine, Harefield, United Kingdom; 3 Unità Operativa Complessa di Gastroenterologia, Ospedale Valduce, Como, Italy
DOI 10.1055/s-0039-1681538

Aims European public beliefs and attitudes to colonoscopy are poorly understood. A survey was conducted to better understand the issue.

Methods An online survey was conducted in the UK, Germany, France, Spain, and Italy among members of the general public who had not had a colonoscopy and also those who had undergone a colonoscopy in the last five years. One of the ten questions to both groups asked: Please indicate how strongly you agree or disagree with the following statements: ‘I would be embarrassed to have a colonoscopy’.

The survey targeted 500 people that had not had a colonoscopy and 100 people that have undergone a colonoscopy in the last five years in each country. The survey targeted people aged 18 to 70 and aimed to balance respondent groups for region, gender, age and occupation.

Results Among 53,795 invited persons, 18,650 (35%) responded to the survey, 2,500 (5%) completed the survey who had never had a colonoscopy before and 500 (1%) completed the survey who had a colonoscopy in the last five years across the five assessed EU countries. Despite the experience of colonoscopy being better than anticipated (59% felt it was better than expected) 43% of respondents who have had a colonoscopy noted that they would be embarrassed to have another compared with 59% of those that haven’t had a colonoscopy.

Response levels differed across the countries, notably the embarrassment levels in both groups between Spain and Germany. 66% from Spain who had undergone a colonoscopy and 78% who haven’t would be embarrassed to undergo the procedure, compared with 29% and 38% respectively in Germany.

Conclusions Embarrassment doesn’t disappear following a colonoscopy. Despite the experience of colonoscopy being better than anticipated, two in five adults would still be embarrassed to have another colonoscopy.

OP363 EDUCATIONAL TELEPHONE INTERVENTION BY ENDOSCOPY NURSE. IMPACT ON THE ADHERENCE OF OUTPATIENT COLONOSCOPY

Authors Seoane Urgorri A1, Font Lagarriga X1, Pérez Berbegal R1, Pérez Carregal C1, Parrilla Carrasco M1, Romero Xandre J1, Álvarez González MA1, Pantaleón Sánchez M1, Enríquez CF1, Riu Pons F1, Dedeu Cusco JM1, Barranco Priego LE1, Bessa Caserras X1, Ibañez Zafón I1
Institute 1 Endoscopy Unit, Parc de Salut Mar, Hospital del Mar, Barcelona, Spain
DOI 10.1055/s-0039-1681539

Aims The growing complexity of colonoscopy in endoscopy units has increased the need for good patient preparation and the endoscopy nurse role is crucial for it. This study was directed to determine the impact of an educational telephone intervention on colonoscopy adherence. The compliance with colonoscopy preparation protocols and patient satisfaction were also assessed.

Methods Prospective, randomized, controlled study. All consecutive patients referred for colonoscopy from the primary care centers from February to July 2018 were included. Two groups were designed, one of which received a standardized educational telephone call before the procedure. All patients received medical information from the primary care center and an administrative reminder from the hospital. An intention-to-treat (ITT) and per-protocol (PP) analysis were performed.

Results 767 patients in each group were initially enrolled. Finally, 747 were included in the control group (CG) and 738 in the interventional group (IG). Telephone contact was achieved in 613 (83%). Non-adherence for colonoscopy was lower in the IG: ITT [8.4%, OR 1.85 (95% CI 1.30 – 2.53), p = 0.0001], PP [4.4%, OR 1.85 (95% CI 2.35 – 5.61), p = 0.0001] compared with the CG [14.3%]. Rescheduling due to non-compliance protocols was higher in the CG [2.3%] compared to the IG: ITT [0.4%, p = 0.003], PP [0.3%, p = 0.003]. Compliance with the cleansing protocols was poor in the CG (correct diet 95.3%, split-dose 89.8%) in comparison with the IG: ITT [correct diet 97.9%, p = 0.01; split-dose 91.8%, p = 0.002], PP [correct diet 98.3%, p = 0.01; split-dose 92.6%, p = 0.002]. The information received was lower rated as excellent or very good in the CG [64.9%] [correct diet 85%, p = 0.0001], PP [84.9%, p = 0.0001].

Conclusions A patient standardized educational telephone intervention performed by an endoscopy nurse improves adherence, protocols compliance and patient satisfaction in outpatient colonoscopy.

OP364 DIAGNOSTIC YIELD OF UPPER ENDOSCOPY ACCORDING TO APPROPRIATENESS: A SYSTEMATIC REVIEW

Authors Hassan C1, Zullo A1
Institute 1 ONRM Hospital, Rome, Italy

Aims Despite some official guidelines are available, a substantial rate of inappropriateness for upper gastrointestinal (UGI) endoscopies has been reported. This study aimed to estimate the inappropriate rate of UGI in different countries, also including the diagnostic yield.

Methods A systematic review of studies on UGI endoscopy appropriateness was performed by adopting official guidelines as reference standard. Diagnostic yield of relevant endoscopic findings and cancers was compared between appropriate and inappropriate procedures. The Odd Ratio (OR) values and the Number-Needed-to-Scope (NNS) were calculated.

Results Data of 23 studies with a total of 53,392 patients were included. UGI indications were overall inappropriate in 21.7% (95% CI = 21.4 – 22.1) of the patients. The inappropriateness rate significantly (P<0.0001) decreased from...
35.1% in the earlier studies to 22.1%-23% in the more recent ones. A relevant finding was found in 43.3% of appropriate and in 35.1% of inappropriate endoscopies (P<0.0001; OR: 1.42, 95% CI = 1.36 – 1.49; NNS = 12). Prevalence of cancers was also higher in appropriate than in inappropriate UCIs (2.98% vs. 0.09%, P<0.0001; OR = 33.3; NNS = 48). The prevalence of detected cancers significantly (P<0.004) increased from 1.38% in the earlier studies to 2.11% in the more recent ones, whilst prevalence of other relevant findings remained similar.

**Conclusions** Rate of inappropriate UGI endoscopies is still high. Diagnostic yield of appropriate endoscopies is higher than that of inappropriate procedures, including upper GI cancers. Therefore, implementation of guidelines in clinical practice is urged.

**OP365 SAME SESSION BI-DIRECTIONAL ENDOSCOPY – TIME FOR A TAILORED APPROACH**

**Authors** Alfa-Wali M1, Khoo CK2, Varma A3, Saedon M3

**Institute** 1 St George’s Hospital, London, United Kingdom; 2 Grantham and District Hospital, Grantham, United Kingdom; 3 Nottingham University Hospital, Nottingham, United Kingdom

DOl 10.1055/s-0039-1681541

**Aims** In the United Kingdom (UK), patients with iron deficiency anaemia (IDA) are referred to secondary care for investigations. The British Society of Gastroenterology (BSG) recommends urgent upper gastrointestinal (UGI) and lower gastrointestinal (LGI) endoscopies for patients with IDA. This is the commonest indication for simultaneous bi-directional endoscopy. The aim of this study was to determine the utility of bi-directional endoscopy in patients with IDA.

**Methods** All patients who had simultaneous bidirectional endoscopies between July 2015 and December 2016 at a UK Trust were recruited into the study. Demographic and clinical data which included endoscopic findings and histology were analysed using SPSS.

**Results** 1650 patients (male n = 785, female n = 870, age 63 (16–95)) underwent both procedures simultaneously in the study period. 972 patients were anaemic (male = 538, female = 434), 798 had IDA (male = 402, female = 396). The majority of patients had normal findings on endoscopy (80% UGI, 77% of LGI). Neoplastic lesions were found in only 0.9% (n = 15) on UGI endoscopy but in 4% (n = 61) on LGI endoscopy. A further 0.3% (n = 5 UGI) and 14% (n = 230 LGI) had polyps with malignant potential. In all anaemic patients, overall malignancy detection rate was 3.5% (n = 58) (UGI n = 9 vs. LGI n = 49, P < 0.05). Specifically, in patients with IDA, an overall malignancy detection rate was 3.5% (n = 58) (UGI n = 9 vs. LGI n = 49, P < 0.05). In all anaemic patients, overall malignancy detection rate was 3.5% (n = 58) (UGI n = 9 vs. LGI n = 49, P < 0.05).

**Conclusions** This study suggests that urgent UGI endoscopies may be unnecessarily performed in patients with anaemia. The national use of faecal immunochemical testing may reduce the number of colonoscopies and allow for more strategic use of LGI endoscopies in the investigations of anaemia. It seems prudent that the recommendation for urgent endoscopic investigation for anaemia be revisited.

**OP366V E-PATIENT COUNSELING TRIAL (E-PACO): COMPUTER BASED PATIENT EDUCATION IS NON-INFERIOR TO NURSE COUNSELING PRIOR TO COLONOSCOPY, A MULTICENTER RANDOMIZED CONTROLLED TRIAL**

**Authors** Veldhuijzen GC1, Klemt-Kropp M2, Terhaar sive Droste JS3, van Balkom B4, van Esch AAJ5, Drenth JPH5

**Institute** 1 Radboudumc, Gastroenterology and Hepatology, Nijmegen, Netherlands; 2 Northwest Clinics, Gastroenterology and Hepatology, Alkmaar, Netherlands; 3 Jeroen Bosch Hospital, Gastroenterology and Hepatology, Den Bosch, Netherlands; 4 Bernhoven Hospital, Gastroenterology and Hepatology, Uden, Netherlands; 5 Gastroenterology and Hepatology, Radboudumc, Nijmegen, Netherlands

DOI 10.1055/s-0039-1681542

**Aim** Optimal patient education prior to colonoscopy improves adherence to instructions for bowel preparation and leads to cleaner colons. We developed a computer based education (CBE) supported by video and 3D animations. We hypothesized that CBE may replace current nurse counselling (NC) in most cases, without losing quality of bowel cleanliness during colonoscopy.

**Methods** A prospective, multicenter, endoscopist blinded, non-inferiority randomized controlled trial was conducted. The primary outcome was the rate of successful bowel cleansing, evaluated using the Boston Bowel Preparation Scale (BBPS). Secondary outcome measures were sickness absence, anxiety, satisfaction and information re-call scores. Data was gathered through questionnaires and endoscopy reports. Four endoscopy units participated, with different levels (rural, urban, tertiary). Inclusion criteria were adult age and referral for complete colonoscopy.

**Results** Out of 1035 eligible patients, we randomized 845 patients. After evaluation, 497 patients were included in our per-protocol analyses, 217 in the NC group and 280 in the CBE group. Baseline characteristics were similarly distributed amongst groups. Response rates of patient questionnaires were 100%, 55.6% and 47.3%. Endoscopists scored BBPS in 95% of the cases.

Successful bowel cleansing was achieved in 93.2% of the CBE group, which was non-inferior to the NC group (94%); a difference of -0.8% [95% confidence interval -5.1 – 3.5]. BBPS scores were 7.8 (SD 1.62) and 8.0 (SD 1.69), respectively. Sickness absence was significantly more frequent in the NC group (28.0% vs. 4.8%). In the CBE group, only 21.8% of patients needed additional information, resulting in 4.8% extra outpatient visits. Other secondary outcomes showed no significant difference in both groups.

**Conclusion** As modality for patient education, CBE is non-inferior to NC in terms of bowel cleanliness during colonoscopy, with lower patient sickness leave. CBE therefore is practical and efficient for patient education prior to colonoscopy and is recommended for daily practice.
endoscopy unit in BGH indicating a strong culture and safety attitude present within the unit. A qualitative analysis of why errors occurred drew up two main themes, namely process and human factors. Advantages of the new checklist were outlined under the themes of quality factors and process factors. The time constraints of the new process was the main cited disadvantage.

**Conclusions**  
Introduction of a double-verification safety checklist in BGH successfully reduced error in specimen labeling rates in endoscopy in the context of a strong safety culture within the unit. The study highlights the benefits of safety checklists in the endoscopy process as a means of improvement of patient safety.

**OP368 ACHIEVEMENT OF EUROPEAN SOCIETY OF GASTROINTESTINAL ENDOSCOPY (ESGE) PERFORMANCE MEASURES: OBSERVATIONS FROM THE EUROPEAN COLONOSCOPY QUALITY INVESTIGATION (ECQI) QUESTIONNAIRE**

**Authors**  
Spada C 1, Agrawal A 2, Amaro P 3, Brink L 4, Fischbach W 5, Hünger M 6, Jover R 7, Kinnunen U 8, Koulaouzidis A 9, Ono A 10, Patai Á 11, Petruzziello L 12,13, Pecere S 12,13, Toth E 14, Amlani B 15, Riemann JF 16, Jesper N 1, Aalling L 1, Nordblad Schmidt P 1, Bülow S 2, Fondazione Poliambulanza, Brescia, Italy; 2 Doncaster Royal Infirmary, Doncaster, United Kingdom; 3 Coimbra University Hospital, Coimbra, Portugal; 4 Herlev Hospital, Herlev, Denmark; 5 Gastroenterologie und Innere Medizin, Aschaffenburg, Germany; 6 Private Practice for Internal Medicine, Würzburg, Germany; 7 Hospital General Universitario de Alicante, Alicante, Spain; 8 Tampere University Hospital, Tampere, Finland; 9 The Royal Infirmary of Edinburgh, Edinburgh, United Kingdom; 10 Hospital Clínico Universitario Virgen de la Arrixaca, Murcia, Spain; 11 Markusvölszky University Teaching Hospital, Szombathely, Hungary; 12 Fondazione Policlinico Universitario A. Gemelli IRCCS, Digestive Endoscopy Unit, Rome, Italy; 13 Universität Cattolica del Sacro Cuore, Centre for Endoscopic Research Therapeutics and Training – CERTT, Rome, Italy; 14 Skåne University Hospital, Lund University, Malmö, Sweden; 15 Norgine, Harefield, United Kingdom; 16 Director em. Klinikum Ludwigshafen, Chairman, LebensBlicke Foundation for the Prevention of Colorectal Cancer, Ludwigshafen, Germany

**DOI**  
10.1055/s-0039-1681544

**Aims**  
To investigate the quality of colonoscopy in current clinical practice, through the use of online questionnaires, compared with recently published European Society of Gastrointestinal Endoscopy (ESGE) key performance measures.

**Methods**  
The development of the procedure questionnaire, by the European Colonoscopy Quality Investigation (ECQI) Group, has been previously described in posters presented at UEGW, 2015 and 2016. Data collection is ongoing. We analysed data collected between 2/6/16 and 30/4/18.

**Results**  
6445 colonoscopies were documented by 84 practitioners across 12 European countries.

**Adequate bowel preparation** was defined as Boston Bowel Preparation Scale score ≥ 6 (ESGE minimum standard ≥ 90%). From our data (data unavailable for 209, 3.2%), 84.2% (n = 5427) of procedures had adequate bowel cleansing.

**Caecal intubation rate** (ESGE minimum standard of ≥ 90% of all diagnostic and screening colonoscopies visualise the whole caecum, where indication exists). The caecum was the intended endpoint in 69.4% of procedures (ileum 28.1%, anastomosis 1.3%, data unavailable 1.2%). For those colonoscopies where the caecum was the intended endpoint (n = 4473), 94.7% reported reaching the caecum but only 77.5% (3281/4234) of those stated endpoint photo-documentation.

**Polyp detection rate (PDR)** (ESGE minimum standard ≥ 40% of screening and diagnostic colonoscopies performed in those aged 50 years or older). At least one polyp was detected in 40.7% (1357/3335) of qualifying procedures.

**Withdrawal time** from caecum to anal canal and inspection of the entire bowel mucosa at negative (no biopsy or therapy) screening or diagnostic colonoscopy (ESGE minimum standard mean 6 minutes). Of the 1150 qualifying procedures providing data, the overall mean (± SD) withdrawal time was 7.8 ± 3.1 minutes, the median withdrawal time was 7 minutes.

**Conclusions**  
Our findings indicate that while minimum standards for PDR and withdrawal time are being met, they are not achieved for adequate bowel clearance, or photo-documentation of caecal intubation.

**Saturday, April 6, 2019 14:30 – 16:00  
Club H**

**OP369 COLORECTAL CANCER IN FAMILIAL ADENOMATOUS POLYPOSIS: RESULTS FROM THE DANISH POLYPOSIS REGISTRY**

**Authors**  
Gásdal Karstensen L 1,2, Burisch J 1, Pommengaard HC 1,2, Hejøen H 1, Jespersen N 1, Aalling L 1, Nordblad Schmidt P 1, Bülow S 2, Institute 1 Gastrounit, Danish Polypsis Registry, Copenhagen University Hospital Hvidovre, Hvidovre, Denmark; 2 Department of Gastrointestinal Surgery, Copenhagen University Hospital, Rigshospitalet, Copenhagen, Denmark

**DOI**  
10.1055/s-0039-1681545

**Aims**  
Familial adenomatous polyposis (FAP) is an autosomal dominant disorder that predisposes to colorectal cancer (CRC). The Danish Polypsis Registry is a nationwide, complete registry of FAP patients that coordinates a surveillance program consisting of 1) tracing and genotyping of 1st degree relatives and 2) annual or biannual colonoscopies until referral to colorectal or proctocolectomy. We aimed this study to assess efficacy of the surveillance program including the incidence, prevalence, and crude survival rates of CRC for Danish FAP patients.

**Methods**  
Data was collected from the Danish Polypsis Registry and the periods 1990 – 99 and 2000 – 17 were compared.

**Results**  
By the end of 2017, the registry comprised 226 families with 721 affected individuals. While the mean annual incidence rate of FAP was stable from 1990 – 99 (0.19/100,000/year) to 2000 – 17 (0.32/100,000/year) (p = 0.91), the point prevalence increased significantly from 4.86/100,000 in 1999 to 6.11/100,000 by the end of 2017 (p < 0.005). During the period 2000 – 17, FAP related CRC constituted 25/72,218 of all CRC cases (0.03%), which was a significant decrease from 1990 – 99 (26/30,005 cases, 0.09%) (p = 0.001). The risk of CRC was significantly higher for probands (n = 191, 61.6%) compared to call-up cases (n = 5, 1.9%) (p < 0.001). All CRCs in call-up patients were detected at the initial endoscopic evaluation. Thus, no cases were identified in the surveillance program. The life expectancy for probands differed significantly from call-up patients (69.9 years, 95% CI, 66.9 – 72.9 vs 56.1 years, 95% CI, 53.6 – 58.6, p < 0.001); hence, an appropriate tracing and preoperative endoscopic surveillance program prolong life expectancy with 13.4 years for first-degree family members.

**Conclusions**  
The Danish Polypsis Registry enables close monitoring of FAP affected individuals. While the mean annual incidence rate of FAP was stable from 1990 – 99 (0.19/100,000/year) to 2000 – 17 (0.32/100,000/year) (p = 0.91), the point prevalence increased significantly from 4.86/100,000 in 1999 to 6.11/100,000 by the end of 2017 (p < 0.005). During the period 2000 – 17, FAP related CRC constituted 25/72,218 of all CRC cases (0.03%), which was a significant decrease from 1990 – 99 (26/30,005 cases, 0.09%) (p = 0.001). The risk of CRC was significantly higher for probands (n = 191, 61.6%) compared to call-up cases (n = 5, 1.9%) (p < 0.001). All CRCs in call-up patients were detected at the initial endoscopic evaluation. Thus, no cases were identified in the surveillance program. The life expectancy for probands differed significantly from call-up patients (69.9 years, 95% CI, 66.9 – 72.9 vs 56.1 years, 95% CI, 53.6 – 58.6, p < 0.001); hence, an appropriate tracing and preoperative endoscopic surveillance program prolong life expectancy with 13.4 years for first-degree family members.

**OP370 ENDOSCOPIC MANAGEMENT OF DUODENAL AND JEJUNAL POLYPOSIS IN PATIENTS WITH FAMILIAL ADENOMATOUS POLYPOSIS USING DOUBLE BALLOON ENDOSCOPY**

**Authors**  
Sekiya M 1, Sakamoto H 1, Yano T 1, Miyahara S 1, Nagayama M 1, Tojo H 1, Kobayashi Y 1, Shinozaki S 1,2, Sunada K 1, Kawai Lefer A 3, Yamamoto H 1, Institute 1 Department of Medicine Division of Gastroenterology, Jichi Medical University, Shimotsuke, Japan; 2 Shinozaki Medical Clinic,
Results In our cohort there were six females and five males between the ages 37 to 69. AIN was confirmed in 8 patients, AIN III and AIN II equally in three patients and AIN I in the remaining two. In seven AIN patients IPCL irregularity was observed by NBI chromoendoscopy. Background color sign, in contrary to the diagnostics in the esophagus, was not a predictor of early neoplasia, AIN. In one patient a recurrence was found at 3 months after the primary treatment and removed by reEMR.

Conclusions IPCL irregularity observed by the NBI HD chromoendoscopy predicted a presence of AIN with 78% certainty and IPCL irregularity was present in 88% of AIN patients. The accuracy can be lower in the squamous epithelium altered by inflammation. The HD chromoendoscopy in high risk population followed by an endoscopic resection in local anesthesia offers a preventive measure to anal squamous carcinoma.

ePP2 NARROW-BAND IMAGING PREDICTS THE HISTOLOGY OF ANAL SQUAMOUS INTRAEPITHELIAL LESION AND SUPERFICIALLY INVASIVE SQUAMOUS CELL CARCINOMA WITH HIGH ACCURACY

Authors Gizi G1, Villani V1, Frazzoni L2, Tamanini G2, La Marca M2, Fuccio L2

Institute 1 MF Toniolo Hospital, Bologna, Italy; 2 Department of Medical and Surgical Sciences, University of Bologna, Bologna, Italy


Aims Anal cancer incidence is increasing. Squamous cell carcinoma is the most frequent histologic type and is preceded by precancerous lesions, i.e. squamous intraepithelial lesions (SILs), and by superficially invasive squamous cell carcinoma (SISCCA), a microinvasive disease with low metastatic risk. SIL and SISCCA are amenable to conservative or excisional treatment, however their endoscopic identification is challenging. We aimed at assessing narrow-band imaging (NBI) in predicting histology of SIL and SISCCA.

Methods Retrospective analysis of prospectively collected database. Patients with suspected SIL and SISCCA underwent a rectosigmoidoscopy with high-definition colonoscopes (HDTV Olympus 180 Exera) or dual-focus colonoscopes (HDTV Olympus 190 Exera) with NBI evaluation and histological assessment. Three NBI patterns were identified: i) pattern I, elongation of intrapapillary capillary loops; ii) pattern II, thickened and tortuous intrapapillary capillary loops; iii) pattern III, mosaic-like disposition of intrapapillary capillary loops.

Results SILs were classified according to the LAST classification in high-grade (HSL) and low-grade (LSL). Correlation between tumour grade and NBI was evaluated with Spearman’s rho coefficient. We calculated diagnostic accuracy of NBI in detecting the presence of HSL or SISCCA vs. LSL.

Results We documented 45 lesions in 42 patients (mean age 54.5 years; 24 females). In details, 33 (73.3%) lesions were LSL, 9 (20%) were HSL, and 3 (6.7%) were SISCCA. NBI pattern positively correlated to the tumour grade (Spearman’s rho = 0.952, p < 0.001). Furthermore, 33/33 (100%) LSILs had NBI pattern I, 8/9 (88.9%) HSILs had NBI pattern II, and 3/3 SISCCAs had NBI pattern III. Diagnostic accuracy of NBI pattern II or III in detecting HSIL or SISCCA vs. LSL was high (sensitivity = 91.7%, 95% CI 61.5–99.8%; specificity = 100%, 95% CI 89.4–100%).

Conclusions NBI evaluation of suspected SIL can differentiate low grade SIL from high grade SIL and SISCCA with high accuracy. The mosaic-like NBI pattern is strongly associated with SISCCA.

ePP3V ENDOSCOPIC BAND LIGATION FOR THE TREATMENT OF REFRAC TORY RADIATION PROCTITIS

Authors Maestro Prada I1, Quintanilla Lázaro EM1, García-Ramos García C1, Chaudarcas Castiñeira P1, Álvarez Sánchez M1, Castro Urda J1

Institute 1 Hospital Universitario Severo Ochoa, Leganés, Spain


Results In our cohort there were 11 females and 3 males between the ages 60 to 90. AIN was confirmed in 7 patients, AIN III and AIN II equally in three patients and AIN I in the remaining two. In seven AIN patients IPCL irregularity was observed by NBI chromoendoscopy. Background color sign, in contrary to the diagnostics in the esophagus, was not a predictor of early neoplasia, AIN. In one patient a recurrence was found at 3 months after the primary treatment and removed by reEMR.

Conclusions IPCL irregularity observed by the NBI HD chromoendoscopy predicted a presence of AIN with 78% certainty and IPCL irregularity was present in 88% of AIN patients. The accuracy can be lower in the squamous epithelium altered by inflammation. The HD chromoendoscopy in high risk population followed by an endoscopic resection in local anesthesia offers a preventive measure to anal squamous carcinoma.
Radiation proctitis is a known complication following radiation therapy for pelvic malignancy. The majority of cases are treated with conservative management, including endoscopic treatment.

We present a patient with a chronic radiation proctitis despite treatment with argon plasma coagulation.

**Case report** 67-year-old man with a history of prostate adenocarcinoma and chronic radiation proctitis. The patient was initially treated with several sessions of argon plasma coagulation in other hospital. He maintained rectal bleeding daily and secondary anemia requiring intravenous iron therapy.

In the colonoscopy we observed radiation proctitis over hemorrhoids in distal rectum (image 1). Due to the impossibility of a new fulguration it was decided to perform endoscopic band ligation (image 2) with no complications. Six weeks later, a control endoscopy was performed, identifying post-banding ulcers (image 3), so we postponed a new control for two months. In this colonoscopy we observed a scar tissue and petechial erythematous area on hemorrhoidal pedicle (image 4), performing a new endoscopic band ligation.

In the last endoscopy, six months after the first ligation, findings were post-banding scars and slight proctitis above two hemorrhoid pedicles, performing a new ligation (image 5). Clinically, after the first endoscopic band ligation, symptoms improved only for a week, with further deterioration due to rectal bleeding secondary to rectal ulcers.

After the second endoscopic band ligation, the patient refers clear improvement of symptoms with rectal bleeding episodes reduced to rare events and hemoglobin normalization.

**Discussion** Medical and endoscopic management of chronic radiation proctitis is complex, with no evidence of an efficient therapeutic option. In this case, endoscopic band ligation as an effective treatment of chronic radiation proctitis refractory to argon plasma coagulation. It is not clear the number of sessions required to control of symptoms, but it seems a possible alternative to thermal treatments.

**Results**

<table>
<thead>
<tr>
<th>Factor</th>
<th>Sig</th>
<th>OR (CI 95%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peritoneal carcinomatosis</td>
<td>0.025</td>
<td>0.309 (0.111 - 0.861)</td>
</tr>
<tr>
<td>Expert endoscopist</td>
<td>0.003</td>
<td>3.935 (1.602 - 9.668)</td>
</tr>
</tbody>
</table>

**Conclusions:**

- Sixty percent of the patients in the non-SEMS group had an episode of acute colonic obstruction that required the placement of urgent colonic SEMS.
- Migration and perforation were more frequent in the non-SEMS group.
- The small number of patients evaluated to date makes it necessary to extend the inclusion period in order to obtain more reliable conclusions.

**References**

DOI: 10.1055/s-0039-1681551

**Aims**

- To evaluate factors associated with the successful placement of colonic stents.
- Tab. 1 Multivariate analysis of factors associated with technical success in endoscopic stent placement.
Internal Medicine, Soonchunhyang University College of Medicine, Cheonan, Korea, Republic of


Aims Although self-expandable metal stent (SEMS) is very useful for relieving malignant colorectal obstruction, it may cause bowel perforation and result in impaired oncological outcomes. However, data comparing the outcomes of patients with or without perforation are limited. We aimed to compare overall survival and recurrence rates depending on SEMS-related bowel perforation.

Methods This multicenter study included obstructive colorectal cancer patients treated with SEMS as a bridge to surgery. The data were retrospectively collected and the patients were matched at a ratio of 1:5 according to age, sex, tumor location, pathologic stage, and curative resection. The oncological outcomes according to perforation were evaluated using the Kaplan-Meier method.

Results From January 2009 to February 2018, 258 patients underwent SEMS as a bridge to surgery. Of these patients, 18 (7.0%) had SEMS-related perforations (the perforation group). Overt and silent perforations were identified in 16 and 2, respectively. The rate of more than 14 cm of SEMS length was higher in the perforation group compared to the entire patient group without perforation (16.7% vs. 2.5%, p = 0.019 by Fisher’s exact test). In comparison with 90 matched controls (the non-perforation group), the 5-year overall survival rate was lower in the perforation group (54.3% vs. 77.2%, p = 0.078). The 5-year recurrence rate was significantly higher in the perforation group compared to the non-perforation group (50.1% vs. 23.6%; p = 0.003).

Conclusions Insertion of longer SEMS increases the risk of perforation. SEMS-related perforation is associated with increased recurrence rate.

ePP11 RESULTS OF A COLORECTAL SCREENING PROGRAMME BELOW THE FIT THRESHOLD OF 100 NG/ML (20UG/G)

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Aims The CRC screening programmes based on the immunological FOB/T/FIT (faecal occult blood test) among asymptomatic subjects between 50–69 years old have proved its efficacy in the reduction of CRC incidence and mortality. The threshold to consider a FIT positive in the Spanish CRC screening programme and therefore be invited to undergo colonoscopy is 100 ng/ml. Considering that values above 50 ng/ml are considered positive out of the screening programme, there is a percentage of asymptomatic subjects with values between 50–99 ng/ml that could have undetected lesions.

Aim TO ANALYSE THE ENDOSCOPIC FINDINGS IN PATIENTS WITH FIT RESULTS BETWEEN 50 – 99 NG/ML.

Tab. 1 Comparative of endoscopic findings FIT50 – 99 vs. FIT=100

<table>
<thead>
<tr>
<th>Screening group (FIT&gt;100)</th>
<th>FIT 50 – 99</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adenomas: Total/Male/Female</td>
<td>879 (69.2%)/322 (61.2%)</td>
<td>32 (45.7%)/17 (54.8%)/15 (38.5%); 0.00; 0.13; 0.05</td>
</tr>
<tr>
<td>High risk adenomas: Total/Male/Female</td>
<td>608 (47.9%)/182 (34.6%); 14 (20.5%)/10 (32.3%)/4 (10.3%); 0.00; 0.05; 0.01</td>
<td></td>
</tr>
<tr>
<td>CRC: Total/Male/Female</td>
<td>105 (8.3%)/71 (10.3%)/34 (10.3%); 2 (2.9%)/1 (3.3%); 0.074; 0.212</td>
<td></td>
</tr>
<tr>
<td>Age (years)</td>
<td>65.27</td>
<td>65.47</td>
</tr>
</tbody>
</table>

Methods We analysed retrospectively FIT results (OC-SENSOR, Biogen) received in the laboratory of León’s Hospital in the first round of CRC screening between 2014 – 2016. We selected those patients with FIT results between 50 – 99 that had undergone colonoscopy by their doctor’s indication as screening. As a control group, we used subjects that underwent colonoscopy as part of the CRC screening programme (FIT ≥ 100).

Results A total of 989 subjects between 60–69 years old presented FIT results ranging from 50 to 99 ng/ml. 70% of them underwent colonoscopy. We detected adenomas in 32 (45.7%), high risk adenomas in 14 (20%) and CRC in 2 (2.9%). In the indexed table, we present the results comparing with the control group.

Conclusions The FIT threshold established for the populational CRC screening in Spain is efficient, but it can increase the false negative (FN) situations. It is necessary to evaluate these results with larger series to find the risk factors associated to FN as well as allow us to propose evidence-based changes to the threshold or modifications to the screening interval.
ePP8 HOW STRONG IS THE EVIDENCE SUPPORTING HIGH DEFINITION COLONOSCOPY SUPERIORITY IN INCREASING EXAMINATION OUTCOMES? A META-ANALYSIS OF RANDOMIZED CONTROLLED STUDIES

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DOI 10.1055/j-0039-1681556

Aims Previous meta-analysis showed marginal difference between high definition (HD-C) and standard definition (SD-C) colonoscopy in terms of colonic adenomas detection. Due to non-randomized design of the majority of studies included in this meta-analysis, we aimed to elucidate the effect of HD-C on adenoma detection by meta-analyzing results of randomized controlled trials (RCTs) only.

Methods A literature search was performed for RCTs evaluating HD-C versus SD-C in terms of ADR, mean number of adenomas per colonoscopy (MAC), advanced ADR (AADR) and right colon adenoma detection rate (RCADR). The effect size on study outcomes was calculated using the appropriate effect model and is presented as Risk Ratio [RR (95% CI)] or Mean Difference [MD (95% CI)].

Results Five RCTs involving 3507 patients (HD-C 1741; SD-C 1766) were included. One study included screening examinations, one evaluated subjects with positive FOBT – personal or familial history of colorectal cancer and three studies evaluated colonoscopies with mixed indications (screening, surveillance and symptomatic). ADR was reported in all 5 studies. Compared to SD-C, HD-C significantly increased ADR [RR (95% CI)=1.15 (1.06 – 1.25); I²=0%] and MAC as reported in 4 studies with 3087 examinations [MD (95% CI)=0.09 (0.04 – 0.14); I²=0%]. On the contrary, this benefit was not achieved in terms of ADR since meta-analysis of data from 3 studies (2261 examinations) detected no difference between HD-C and SD-C [RR (95% CI)=1.08 (0.84 – 1.40); I²=0%] and in terms of RCADR [data from 2 studies with 1641 examinations; RR (95% CI)=1.38 (0.86 – 2.22); I²=84.7%].

Conclusions Meta-analysis of RCTs data provides moderate level of evidence that high definition colonoscopy is superior to the standard definition, regarding adenoma detection.

ePP9 MUCOSAL FLATTENING ASSISTED COLONOSCOPY (FAC) FOR IMPROVING ADENOMA DETECTION RATE: A SYSTEMATIC REVIEW WITH PAIRWISE AND NETWORK META-ANALYSIS

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DOI 10.1055/j-0039-1681557

Aims Improving ADR is currently the central focus of quality improvement in colonoscopy. Fold flattening devices could ameliorate the ADR. Aims of study; to compare efficacy of mucosal flattening assisted colonoscopy vs. standard colonoscopy in improving adenoma detection rate.

Methods Full text Randomized Clinical Trials (RCT) included in the analysis. Pairwise and then network meta-analysis performed; relative ranking was evaluated by surface under the cumulative ranking curves (SUCRA).

Results 13 articles included; total of 8243 patients. Endocuff (EC), EndoRing (ER), G- Eye and Standard Colonoscopy (SC) were compared. Pairwise meta-analysis: SC vs. EC, improved ADR with an OR of 1.36 (c.l.95% 1.12 to 1.60) p = 0.001; A significant Heterogeneity was present: sub grouping studies in three level of ADR in the SC, the OR between the two treatment arms were significantly different. When in SC the ADR> 40% no difference was present: OR = 1.07 (c.l.95% 0.85 to 1.34) p =.184; when ADR> 25% OR = 1.85 (c.l.95% 1.35 to 2.53) p = 0.000; when ADR was > 5% and < 25, OR = 1.43 (c.l.95% 1.13 to1.77) p = 0.014. SC vs. ER no difference was observed between the two procedures OR = 1.063 (c.l. 95% 0.875 to 1.291) p = 0.540. SC vs. G-Eye - OR = 0.63 (c.l.95% 0.48 to 0.83) p <0.001. Network meta analysis ER vs EC indirect comparison provided a trend favoring EC: ADR Log OR = -0.33 (c.l. 95% -0.72 to 0.4) p <0.04. G Eye device reach the higher (SUCRA) percentage of effectiveness: SUCRA Estimated Probabilities = 90.5 and the probability best = 78.1%; EC SUCRA = 67.8 and probability best 17.4%.

Conclusions Endocuff devices improve ADR when the ADR in SC is <= 40%. G Eye reach the higher probability to be best device for improving ADR.
**ePP13V**  EUS TISSUE DIAGNOSIS OF A MALIGNANT SOLID PSEUDOPAPILLARY TUMOR OF THE PANCREAS IN A YOUNG MALE RARE PRESENTATION OF A RARE PANCREATIC TUMOR - CASE REPORT -

**Authors** Gonzalez Haba Ruiz M1, Agudo Castillo B1, Pons Renedo F1, Tejerina Gonzalez E2, Calleja Panero JL1

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**DOI** 10.1055/s-0039-1681558

**Introduction** Solid pseudopapillary tumors (SPT) of the pancreas are rare neoplasms of uncertain origin that account for 0.2 to 2.7% of all pancreatic tumors. SPT’s have an unclear malignant potential and can mimic aggressive tumors. Preoperative EUS sampling can establish the diagnosis of these atypical tumors with an overall favorable prognosis.

We report the case of a 50 year-old man consulting for lower back pain who was found on CT scan to have a large pancreatic tail mass. Serum markers were negative and no distant metastases were present.

**Procedure and Results** EUS confirmed the presence of a 42 mm hypoechogenic, heterogeneous, solid lesion with cystic components and calcifications. There was contact with the splenic vein without flow interruption. Fine needle aspiration was performed. Cytologically, minimally cohesive, uniform and monotonous cells were present, lining delicate capillary-sized blood vessels, with a pseudopapillary architecture.

Immunohistochemical study was positive for vimentin, CD56, receptor of progesterone, and focal synaptophysin.

Distal pancreatectomy with splenectomy was subsequently performed with a pathologic staging pT2 pN0 (0/6)(AJCC 2017). No adjuvant therapy was administered as decided on multidisciplinary board.

**Conclusion** SPTs are exocrine neoplasms that mainly affects young women, rarely men. Symptoms are vague. Cross sectional imaging typically shows a well-encapsulated lesion with solid and cystic components and varying degrees of central necrosis; but none are specific.

EUS plays an important role in diagnosis and staging, providing the possibility of cytologic – histologic evaluation. Immunohistochemical pattern is critical in diagnosing these tumors for differentiating them from other pancreatic tumors with a radical different prognosis.

First line treatment is complete surgical resection given its malignant potential. Larger tumors (diameter > 5 cm), lymphovascular invasion, lymph node metastasis, synchronous metastasis and positive margin may indicate future risk of metastasis.

**Methods** Prospective study of patients with cholelithiasis and clinical symptoms associated with abnormal liver function tests or suspicion of biliary obstruction due to stones detected by imaging modalities were categorized and divided into an intermediate- and high likelihood groups according to the clinical predictors defined by the ASGE guidelines and referred for linear EUS.

**Results** Total of 95 patients (70 females, 25 males; mean age of 60.9 ± 19.1 and 61.3 ± 17.8 years, respectively) were assessed. CBD stones were detected by EUS overall in 53 (55%) patients: 41% (20/49) in the intermediate likelihood and 72% (33/46) in the high likelihood group of patients, respectively. The size and the number of detected CBD stones in all patients were confirmed by the following endoscopic retrograde cholangio-pancreatography (ERCP). No significant difference was observed between the two likelihood groups concerning the detection of CBD stones. Two-month follow up of patients with no CBD stones detected on EUS revealed clinical findings in 4% (2/42) suspicious for biliary obstruction; 1 ERCP had to be performed in the follow-up period. The specificity and sensitivity of EUS was 100% and 95%, the positive predictive value and negative predictive value was 100% and 93%, respectively. No correlation was found between the stones detected by ERCP and the analyzed liver function tests.

**Conclusions** EUS is highly sensitive and accurate diagnostic tool for the detection and evaluation of CBD stones also in patients with previous normal imaging findings.

**ePP15**  DILATION OF THE COMMON BILE DUCT OF UNDETERMINATE CAUSE – THE ROLE OF ENDOSCOPIC ULTRASONOGRAPHY

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**DOI** 10.1055/s-0039-1681560

**Aims** Dilation of the common bile duct (CBD) of undetermined cause is commonly observed in clinical practice and may have multiple etiologies. The aim of this study was to identify positive endoscopic ultrasonography (EUS) predictors and to assess agreement with magnetic resonance cholangiopancreatography (MRCP).

**Methods** Retrospective study including patients who underwent EUS for dilation of CBD detected on ultrasound (VBP>= 7 mm) or computed tomography (VBP>= 10 mm) with no identified cause between 2010 – 2017.

**Results** We included 56 patients – mean age of 70 years, 70% female, 29% cholecystectomized. The EUS was positive in 30% of the patients – 6 patients had choledocholithiasis, 3 ampuloma, 2 choledochal cyst, 2 benign CBD stenosis, 1 cyst of the head of the pancreas, 1 choledochocarcinoma, 1 chronic pancreatitis and 1 CBD compression due to adenomegaly.

Factors positively related with findings in EUS were an increased gamma glutamyl transferase (331 U/L vs. 104 U/L, p = 0.039), alkaline phosphatase (226 U/L vs. 114 U/L, p = 0.041), total bilirubin (TB) (6.5 g/dL vs. 1.2 g/dL, p = 0.035) and the presence of signs/symptoms (p = 0.042).

MRCP was concordant with EUS findings in 76% of the cases (n = 46; MRCP did not identify 3 cases of lithiasis, 2 ampulomas and 1 CBD compression due to adenomegaly and EUS did not identify 3 cases of benign stenosis CBD, 1 choledocholithiasis and 1 cyst of the bile duct). Seven patients repeated EUS and the findings were concordant with first in 86% of cases (1 case of undetermined ampuloma in the first EUS).

**Conclusions** EUS identified a cause for CBD dilatation in 30% of cases, with increased cholestanol enzymes, increased TB and presence of signs and symptoms being predictors of a positive test. Agreement with MRCP was 76%.
ePP16 ACUTE UPPER GASTROINTESTINAL BLEEDING: ADHERENT CLOTS, ADHERENCE TO GUIDELINES

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Aims Acute upper gastrointestinal haemorrhage secondary to peptic ulcer disease carries a significant mortality risk. The management of peptic ulcers with adherent clots (Forrest IIB) remains uncertain. ESGE recommends consideration of endoscopic clot removal. We aim to describe the demographics and outcomes of patients with adherent clots at a district general hospital.

Methods Data for patients admitted to Mid-Essex Hospital Trust (MEHT) and diagnosed with a peptic ulcer over the last 3 years was obtained from the coding department using ICD-10 codes (K25.0, K25.2, K26.0, K26.2, K27.0 and K27.2). 89 patients that had undergone inpatient endoscopy were identified.

Results 89 patients; female 28 (31.5%), mean age 72.9 (23–96). 17 (19.1%) patients were taking antiocoagulants/antiplatelet agents (warfarin, 4 DOACs, 5 clopidogrel/ ticagrelor). Mean length of stay 12.7 days. 6 (6.7%) patients had rebleeds, 2 (2.2%) patients underwent surgery and 6 (6.7%) patients died. 29 (32.6%) patients had adherent clots found at endoscopy. Of 29 patients with adherent clots; 3 (10.3%) had documented endoscopic removal; 14 (48.3%) had documented removal and 12 (41.4%) had no documentation of adherent clot management. 13 of the 14 adherent clots (93%) that were not removed were located in D1. 8 (27.6%) patients with an adherent clot only received monotherapy.

Tab. 1 Adherent Clot versus No Adherent Clot – Demographics and ulcer outcomes

<table>
<thead>
<tr>
<th>Indication (Haematemesis &amp; Melena), n (%)</th>
<th>Adherent Clot (n = 29)</th>
<th>No Adherent Clot (n = 60)</th>
<th>*p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size (cm), mean (range)</td>
<td>1.5 (0.5–5)</td>
<td>1.1 (0.5–3)</td>
<td>0.009</td>
</tr>
<tr>
<td>Transfused, n (%)</td>
<td>26 (89.7)</td>
<td>42 (70.0)</td>
<td>0.04</td>
</tr>
</tbody>
</table>

Conclusions Patients with adherent clots presented with more severe symptoms, had larger ulcers and required more transfusions. Only 10% of adherent clots had documentation of endoscopic removal and almost half of adherent clots were not removed. Clearer documentation is required for future practice. Ambiguous guidelines could be contributing to variability in practice and suboptimal management.

ePP17 UPPER GASTROINTESTINAL BLEEDING (UGIB)-TRANSFUSION POLICIES AND TIMING OF ENDOSCOPY. ARE GUIDELINE RECOMMENDATIONS INCORPORATED IN 'REAL WORLD' CLINICAL PRACTICE? A NORTHERN GREECE, SINGLE-CENTRE, 1 YEAR EXPERIENCE

Authors Stournaras E1, Protopapas A1, Neokosmidis G1, Stogiannou D1, Panagiotou G1, Gerothanassi N1, Triantafyllou E1, Pimenidou N1, Protopapas A1
Institute 1 Medical School, Aristotle University of Thessaloniki, AHEPA Hospital, Thessaloniki, Greece

Aims Aim of the study is to assess whether guidelines are incorporated in our clinical practice and to recommend performance improvement strategies.

Methods All patients requiring urgent endoscopy for UGIB in 2015 were included. Data were collected from patient medical records, department's endoscopy report software and blood bank archive.

Results 106 endoscopies were performed on 96 patients (27F/69 M), median age 73.8 and 66.5 years respectively. Etiology was mostly nonvariceal (84 NVUGIB vs. 12 VH). 54/96 patients (56.25%) were transfused with mean Hb = 7.55g/dl (4.5–9.9g/dl). 42/54 patients (78%) received transfusion as recommended (in 28/54 target hemoglobin 7–9g/dl and in 12/54 Hb 9–11 g/dl), with 12 patients (22%) transfused outside recommendations. Mean time to endoscopy was 27 h (14.6 h for VH, 28.6 h for NVUGIB). When excluding endoscopy referrals during weekends, mean time decreases to 17.8 h (18.45 h for NVUGIB, 10.7 h for VH). In the NVUGIB subgroup requiring endoscopy within 12 h, 15/22 (68.1%) underwent timely endoscopy. Interfering weekend (2), untimely referrals from other departments (2) or undefined reasons (3) caused delay of remaining cases. In NVUGIB patients requiring endoscopy <24h, prompt intervention was achieved in 42/64 (65.6%), with interfering weekend identified as delay factor in 16 hemorrhages (mean time 72.2 h). Mortality, however, was not affected by breaching recommended time to endoscopy. Hospital mortality was 5.2% patients that died underwent endoscopy within 10 hours and death was related to older age, severe hemorrhage and comorbidities.

Conclusions 78% of UGIB patients were transfused according to guidelines. 2/3 of endoscopies where performed within recommended time. 74% of NVUGIB patients underwent endoscopy within 24 h-interfering weekend/bank holiday was the main reason to delay endoscopy. We therefore recommend a 24/7 endoscopy service, as delayed endoscopy is associated with increased mortality, prolonged hospital stay and increased transfusion requirements. Regular training of medical staff involved in transfusion in UGIB is advised, to minimise unnecessary and potentially harmful transfusions.

ePP19 EFFECT OF FELLOW INVOLVEMENT ON COLONOSCOPY OUTCOMES: A SYSTEMATIC REVIEW AND META-ANALYSIS

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DOI 10.1055/s-0039-1681563

Aims The effect of fellow involvement on colonoscopy outcomes is controversial. Thus, we evaluated this effect on adenoma detection rate (ADR) and on other colonoscopy quality indicators.

Methods MEDLINE and Cochrane central register of controlled trials were searched up to September 2018 for studies evaluating fellow-involved colonoscopies vs. attending physicians-only examinations in terms of colonoscopy outcomes. Primary outcome was ADR, while advanced ADR (AADR), mean number of adenomas per colonoscopy (MAC), cecum intubation rate (CIR) and adverse events rate comprised the secondary outcomes. The effect size on study outcomes was calculated using random-effects model and it is presented as Odds Ratio (OR) or Mean Difference (MD) with 95% confidence interval (CI).

Results Nineteen observational studies involving 34059 patients (fellow-involved 16875, attending physician-only 17184) were included. Compared to the attending physician-only group, fellow involvement marginally increased ADR [OR (95% CI) = 1.12 (1.00–1.26); I² = 76%]. Attending physicians with low-to-moderate ADR (<35%) benefited most from fellow’s participation [OR (95% CI): 1.26 (1.13–1.40) vs. 1.12 (1.00–1.26); p = 0.03 when ADR<35% and OR (95% CI): 1.29 (1.13–1.46) vs. 0.95 (0.78–1.16);
Unlike ADR and AADR, SPDR is not influenced by BP. A different approach to reexaminations depending on the initial findings is not warranted.

**ePP21 RECORDING OF EUROPEAN SOCIETY OF GASTROINTESTINAL ENDOSCOPY (ESGE) PERFORMANCE MEASURES: OBSERVATIONS FROM THE EUROPEAN COLONOSCOPY QUALITY INVESTIGATION (ECQI) QUESTIONNAIRE**

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**DOI** 10.1055/s-0039-1681565

**Aims**
1. To determine the influence of BP quality on the detection of serrated polyps (SPDR);
2. To describe the proportion of serrated lesions detected in second examinations performed after a poor-prepared initial screening colonoscopy.

**Methods** Prospective study in which all individuals referred for a screening colonoscopy after a positive FOBT between April 2017 and October 2018 were included. Only complete colonoscopies were considered. Six endoscopists and 3 pathologists participated. The Boston BP scale was used (0–5 = inadequate; 6–7 adequate; 8–9 good). The main outcome was SPDR. Secondary outcomes were ADR, advanced adenoma detection rates (AADR) and proximal SPDR.

**Results** In 718 of 750 patients (95.7%) cecum was intubated (women 334 (46.5%); mean (SD) age: 61.6 (5.8)). A total of 2118 lesions were detected [1368 (64.6%) adenomas and 107 (5.0%) SP]. Overall SPDR was 10.3% (IC 95%: 9.4–11.3). Moreover, SPDR was higher for those with BP<35.

**Conclusions** Fellow involvement during colonoscopy is associated with more adenomas detected per procedure and higher ADR compared to the attending physician-only group, especially for those with BP<35.
Endoscopy 2019; 51:S1–S273

Friday, April 5, 2019 10:30 – 11:00
Small bowel ePoster Podium 8

ePP22 NEAR-FOCUS NBI CLASSIFICATION OF VILLOUS ATROPHY IN SUSPECTED COELIAC DISEASE: INTERNATIONAL DEVELOPMENT AND VALIDATION

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Aims To develop a reliable and validated endoscopic classification of villous atrophy in suspected coeliac disease using near focus Narrow Band Imaging (NF-NBI).

Methods Patients with symptoms/investigations warranting duodenal biopsy were prospectively recruited between September 2017 to August 2018. Six paired NF-white light (NF-WLE) and NF-NBI images with biopsy (2 from the first part of the duodenum,4 from the second) were obtained from each patient. Histopathology grading used Marsh-Oberhuber classification (M-O). Images were reviewed for quality and biopsy orientation. Separate images were used for development of the classification, training and validation steps. A modified Delphi process was performed on images and video recordings by 3 endoscopists to define NF-NBI characteristics (included if kappa>0.6). 10 blinded endoscopists (3 expert, 7 non-expert) underwent a short training module on the proposed NBI classification and evaluated paired (NF-WLE/NF-NBI) images.

Results 100 consecutive patients were recruited and n = 97 completed the study (66F, 51.2±17.3 yrs). TTG positive n = 17/88, M-O VA (3a/3b/3c): n = 22. After image quality and biopsy orientation review; 573 paired images remained (M-O 0/1/2: n = 470/VA n = 103). 510 paired images developed classification with modified Delphi; Villous shape, vascular discrimination, crypt phenotype. 10 endoscopists evaluated 50 paired images each (500 paired total observations made for validation). Sensitivity, specificity, NPV and accuracy of NF-NBI for the diagnosis of VA (Subtotal/total atrophy) using this classification:97.9 (95.2 – 99.3); 86.2 (81.4 – 90.1); 97.8 (95.0 – 99.1); 91.8 (89.04 – 94.05) respectively. Mean of difference in confidence using NF-NBI vs. WLE was 0.61 (0.51 – 0.71), p < 0.0001: The classification was further validated in histopathologically proven duodeni (n = 15) images with no features of VA using the proposed classification.

Conclusions A novel NF-NBI classification for VA was developed to reliably diagnose VA in suspected CD amongst both expert/non-expert endoscopists using readily available equipment and required only short training supporting translation to wider practice.

ePP23 MODERN ENTEROSCOPY IN THE DIAGNOSIS OF ISOLATED LESIONS OF THE SMALL INTESTINE IN CROHN’S DISEASE

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Aims Capsule endoscopy is the best way to assess all over the gut and to detect mucosal inflammatory changes better than any other imaging modality. The aim of the study is to estimate the importance of video capsule endoscopy (VCE) in visual diagnosis of isolated small bowel Crohn’s disease (CD).

Methods From II.2007 until V.2018 we’ve performed 689 VCE in 668 pts. (m-325, f-343, mean age 41.2 ± 16.7 years, range 17 – 86). The indication for the small bowel (SB) examination in 189 (28.3%) pts. was suspected IBD. The main clinical symptom in most (87.3%) 165/189 of pts. was pain, including 100 (60.6%) pts. in combination with diarrhea. Capsule endoscopy was performed using small bowel (Olympus and Given Imaging) and colon (CC2) capsules, followed by balloon-assisted enteroscopy in 86 (45.5%) cases.

Results Endoscopic signs of enteritis were estimated in 98 (51.9%) patients, including 48 (49.0%) with typical endoscopic criteria of CD. The main findings were aphthous erosions and ulcers. Isolated small bowel involvement was registered in 17/48 (35.4%) patients. According to clinical, VCE and morphological results the diagnosis of CD was confirmed in 41/48 pts.; however Langhans giant cells were detected just in 9/41 (22.0%) cases, incl. post-surgical specimens. In other 45/86 cases histology showed chronic enteritis in 10 (22.2%) pts., erosive enteritis in 17 (37.8%) pts., ulcerative enteritis in 2 (4.4%), eosinophilic enteritis in 6 (13.3%), exudative enteropathy in 4 (8.9%) pts., celiac disease in 4 (8.9%) pts., radiation enteritis in 2 (4.4%). There were 4 cases of capsule retention: Crohn’s strictures (3) and stenotic post traumatic ulcerative enteritis (1), resolved endoscopically.

Conclusions VCE gives essential information for diagnosis of Crohn’s disease in patients with unclear diagnosis, allowing to identify isolated small bowel Crohn’s lesions in 35.4% of pts., thus radically change management of these patients.

ePP24 ARE WE DOING UNNECESSARY DUODENAL BIOPSIES FOR COELIAC DISEASE IN PATIENTS REFERRED WITH IRON DEFICIENCY ANAEMIA (IDA)?

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Aims According to British Society of Gastroenterologists (BSG) guidance, all patients referred with iron deficiency anaemia (IDA) should first be screened for Coeliac Disease (CD) with serology, Tissue Transglutaminase (TTG). If Coeliac serology is negative, duodenal biopsies do not need to be collected at gastroscopy unless there are specific clinical features to suggest CD. The aim of this study was to evaluate the investigation of Coeliac Disease amongst patients referred with IDA to the Two Week Wait suspected Gastrointestinal (GI) cancer pathway.

Methods All patients referred through suspected Gastrointestinal cancer pathway between January 2017 and October 2017 were identified from the Cancer Referral Database. Clinic letters for all the referrals were reviewed to identify patients referred with IDA and included in the study. A database was established in Microsoft Excel recording patient demographics, symptoms, Full blood count, Ferritin, Serum TTG, endoscopic procedures including biopsies and radiological investigations.

Results Out of a total of 1769 referrals, 274 were for IDA and included in the study. Median age was 75 (range: 35 – 94) and male: female ratio was 119:155. Upper GI endoscopy was done in 232 patients (n = 232) as part of their investigation. A total of 137 (59%) patients had duodenal biopsy of which only 44 (19%) had CD related symptoms. This resulted in potentially 93 (40%) unnecessary duodenal biopsies. Serum TTG done only in 50 patients (21.5%) and were all negative. 182 patients (79.7%) did not have serum TTG checked. 67 patients (29%) had no investigations for coeliac disease at all. Coeliac disease was diagnosed in 5 patients based on duodenal biopsy.

Conclusions A significant number of patients had unnecessary duodenal biopsies. Performing serum TTG for all patients referred with IDA can decrease the need for duodenal biopsy thus reduce overall cost and increase the efficacy of detecting CD.
ePP25 TOLERANCE AND EFFICACY OF A NOVEL LOW-VOLUME PEG + ASCORBATE (NER1006) PREPARATION IN THE ELDERLY: A REAL-LIFE SINGLE CENTER STUDY

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Aims A low-volume preparation with Polyethylene Glycol (PEG) and Ascorbate (PEG-Asc) – NER1006 was recently launched, however, its efficacy and tolerance in the elderly population remain unclear. We evaluated efficacy, tolerance, and acceptability of the NER1006 (1L) preparation, in comparison to the standard PEG-Asc 2L preparation, in elderly patients.

Methods Single center, investigator-blinded study, directed for patients aged ≥65, choosing between the new preparation (group A – NER1006) or the standard preparation of the endoscopy center (group B – 15 mg bisacodyl + 2L PEG-Asc), both split-dosis. Primary outcomes: patient-reported tolerance (adverse events – AE) efficacy (overall successful bowel cleansing, high quality cleansing in the right colon), measured by Harefield Cleansing Scale (HCS) and Boston Bowel Preparation Scale (BBPS). Secondary-end points: polyph detection rate (PDR) for overall and right colon (site colonoscopy assessment), adenoma detection rate (ADR), comparison of the new preparation with previous experiences (Group A); willingness to repeat the preparation that was used.

Results 149 patients enrolled (group A; 94, aged 65–94; group B; 55, aged 65–86). With the exception of a higher occurrence of nausea/disgust for group A (28.7% vs. 12.7%; p = 0.02), AEs did not differ. No group differences in overall successful cleansing, but high quality cleansing was achieved for the group A in overall colon (BBPS = 9–17.2% vs. 54.5% p < 0.005; HCS = A + 74.5% vs. 38.2% p < 0.005) and in the right colon (HCS score 3/4 = 80.9% vs. 47.3% p < 0.005). For secondary end-points: no differences in PDR or ADR and willingness to repeat the preparation were found; 75.6% of the Group A preferred this preparation regarding previous experiences.

Conclusions In elderly individuals, in a real-life scenario, the novel 1L PEG-Asc preparation with a split-dosis regimen has comparable tolerance, and superior colon cleansing versus 2L PEG-Asc, and is preferred by patients that had previous examinations.

ePP26 EFFECTS OF THE RESPECT OF EDUCATIONAL PATIENT MESSAGES BEFORE COLONOSCOPY ON BOWEL PREPARATION

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Aims Adequate bowel preparation is essential for a successful endoscopy for screening as well as surveillance. Despite patients’ educational oral or written messages, inadequate bowel preparation remains high.

Methods This is a prospective study in the endoscopy center of the gastrointestinal department from January 2018 to June 2018. A thorough questionnaire was taken by all the patients who had a colonoscopy during the period of the study. The bowel preparation quality was evaluated by the Boston bowel preparation scale (BBPS) score and the rate of adequacy (BBPS ≥ 6).

Results 120 patients were included. 70% were female. All patients received standard instructions regarding the bowel preparation. Low fiber diet was prescribed for all the patients, and a written educative paper was delivered in the first consult. The bowel preparation was the polyethylene glycol (4 liters). Before proceeding to the endoscopy, all patients were interrogated. 63.3% respected the low fiber diet during the week before the colonoscopy. During the procedure, only 43.3% had an adequate bowel preparation (BBPS ≥ 6). Statistical analysis showed that respect of the low fiber diet during the week before the colonoscopy is significantly correlated to an adequate bowel preparation (p < 0.005).

Conclusions Insisting on respecting the low fiber diet during the week before the colonoscopy is primordial to have a good bowel preparation and a then better detection of colic lesions.

ePP27 ORAL SULFATE SOLUTION IN OBESE PATIENTS AS PREPARATION FOR COLONOSCOPY: A PROSPECTIVE, MULTICENTER, NONINFERIORITY TRIAL

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Aims Obesity might be related to inadequate bowel preparation with conventional lavage solution. A new formulation of oral sulfate solution (OSS, Suclear) showed effective bowel preparation compared with a standard 4L polyethylene glycol regimen in general population. However, there is no study on bowel preparation with OSS in obese patients. We investigated whether OSS is effective in obese patients as bowel preparation for colonoscopy.

Methods We compared the efficacy of OSS in obese patients with those in non-obese patients as bowel preparation for colonoscopy. This was a prospective, multicenter, single-blind, noninferiority study of adult outpatients undergoing routine elective colonoscopy. Body mass index (BMI) was categorized as obese (BMI 25 or more 25 kg/m²) or non-obese (less than 25 kg/m²). Both obese and non-obese patients respectively received OSS given in equally divided doses the evening before and the morning of colonoscopy. Adequate bowel preparation was defined as the Boston bowel preparation scale score ≥ 6. The noninferiority margin for the difference in adequate bowel preparation rate was defined as -15%.

Results Colonoscopic examinations were performed in 96 obese and 98 non-obese patients. Adequate bowel preparation rate was 88.5% in obese patients and 94.9% in non-obese patients. With an absolute difference -6.4%, 95% CI - 0.142 to 0.015, bowel preparation in obese patients was noninferior to that in non-obese patients.

Conclusions Bowel preparation with OSS for colonoscopy in obese patients is noninferior compared to that in non-obese patients.
Endoscopy 2019; S1: S1-S273

ePP28 ENDOSCOPIC TREATMENT OF RECTAL NEOENDOCRINE TUMORS IN A 12 YEAR RETROSPECTIVE SINGLE CENTER STUDY

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Aims Our aim was to analyse the clinical, endoscopic and pathological characteristics of rectal neuroendocrine tumors and check whether the neuroendocrine origin of lesions was suspected during endoscopy and subsequently these lesions were removed with appropriate method.

Methods Retrospective analysis of patients hospitalized in our department (2006 – 2018) was done to look for rectal NENs. Clinical data were analysed. Further patients fate was checked by analysing their follow-up imaging results and by an information obtained from patient in a phone call.

Results 27 patients (equal sexual distribution) with rectal NENs were diagnosed (3 patients who underwent surgery were excluded). The patients mean age was 51 (range 33 – 64). Most of the patients were asymptomatic (67%).

Endoscopically there were three main lesion appearances; “typical” (15 patients) smooth seating polyps with yellowish reflexion, atypical seating small flat polyps (6 patients) or lesions with central depression (3 patients). Only 9 out of 24 of the lesions were suspected of neuroendocrine origin and removed with ESD/EMR (R0 resection in all), the rest 15/24 were removed with biopsy forceps or snare polypectomy (R0 not obtained). Mean size of lesions was 6.5 mm (range 3 – 10 mm) and majority of lesions were G1 lesions (21 patients), with only three G2 lesions. The follow-up (median 68 months) was longer in the group treated with polypectomy than ESD/EMR (75 months vs. 51,5 months). Most of the patients are disease free apart from one patient who after seven years after snare polypectomy of G1 tumor, developed local recurrence and distal metastases (the patient was referred to our department for follow-up rectal EUS).

Conclusions Rectal neuroendocrine tumors, mostly, are small lesions with low potential of malignancy, however, with the risk of metastatic spread. In majority of cases the origin of the lesions is not suspected during colonoscopy and subsequently these lesions are removed with not appropriate method. More impact must be put on education of endoscopists in this field.

ePP29 SAFETY AND FEASIBILITY OF ENDOSCOPIC FULL-THICKNESS RESECTION IN COLORECTUM USING OVER THE SCOPE CLIP. A MULTICENTER SPANISH EXPERIENCE 2015 – 2018

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Aims To study the safety and feasibility of the endoscopic full-thickness resection (EFR) in colorectal lesions using an over-the-scope-clip.

Methods The clinical, endoscopic and histological data were collected prospectively in all cases of EFR performed in 10 centers of Spain using the FTRD kit (Ovesco Endoscopy, Tübingen, Germany) during the period from June 2015 to July 2018.

Results 71 EFR were scheduled. In 3 patients EFR was not possible due to impossibility to pass the sigmoid with the kit.

In the other 68 patients the technical success was 85.2% with en-bloc resection in 83.8%.

The mean age of the patients was 67 years (range 40 – 86), being men 64.79%.

Indications were: non-lifting sign recurrent lesions (46.47%), non-lifting sign untreated lesions (23.94%), incomplete resection of non-lifting sign lesions (11.26%), appendicular lesions (2.8%) suspected T1 lesion (7%), EFR of suspicious scar (4.2%), subepithelial lesions (4.2%).

The mean diameter of the resected specimen was 21.53 mm (95% CI 19.87 – 23.2).

Final histology: LGD adenoma (40%), HGD adenoma (23%), intramusosal adenocarcinoma (4.47%), SSP (5.87%), T1sm1 (2.9%), advanced adenocarcinoma nsm2 (13%), scar tissue (6%) and others (2.8%).

In one case the OTSC was not deployed, with intraprocedural perforation. There were 2 cases of delayed perforation and 1 case of delayed bleeding.

10 patients underwent surgery: 3 perforation, 1 intraapendicular lesion, and 6 for advanced adenocarcinoma.

During the follow-up, 3 recurrences/residual tissues were detected, which were treated endoscopically.

Conclusions EFR using a modified OTSC (FTRD system) for selected cases (such as failure of other endoscopic treatments in lesions < 55 mm) is a safe and feasible technique.

Evaluation of the insertion with a long cap (e.g. “proOE” cap) and traction of the lesion prior to EFR is highly recommended. Special care must be taken to avoid performing the resection if the OTSC is not deployed.

ePP30 ENDOSCOPIC FULL-THICKNESS RESECTION OF THE COLORECTAL LESIONS – A CZECH MULTICENTER EXPERIENCE

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Aims The purpose of the analysis was to evaluate feasibility, efficacy and safety of endoscopic full-thickness resection (FTR) of the colorectal lesions performed in the Czech Republic.
Methods We prospectively evaluated patients treated with FTR in seven tertiary endoscopy centers in the Czech Republic performing FTR.

Results A total of 63 patients (mean age 68.3 ± 12.1 years, 79% males) have been treated since June 2016. Indication for FTR was local residual neoplasia in 32 (51%), non-lifting neoplasia in 19 (30%), periappendicular neoplasia in 8 (13%), subepithelial tumor in 2 (3%) and transmural rectal biopsy in 2 patients (3%). FTR was technically feasible in 89% (56/63). There were 5 cases of snare dysfunction and it was not possible to pull a lesion into the cap in 2 cases. Full-thickness resection was histologically confirmed in 79% (50/63). R0 resection was achieved in 85% (52/61) including resections with standard snare following FTR snare dysfunction. Resections were considered curative in 79% (48/61), 6 cases of cancer with deep submucosal invasion were referred for surgery. In curatively treated patients, there were 9 cases of sm1 cancer, 3 cases of intramucosal cancer, 20 cases of high-grade dysplasia adenoma, 10 cases of low-grade dysplasia adenoma, 5 cases of completely resected scar and 1 case of granular tissue. Complications occurred in 13% (8/63). There were 2 cases of delayed perforation treated surgically, 2 cases of acute appendicitis responding to conservative treatment and 4 cases of delayed bleeding.

Conclusions In our series of 63 patients treated by FTR in the Czech Republic, we demonstrate high technical feasibility in 89%, R0 resection rate in 85% and curative resection rate in 79% of cases. Complications occurred in 13% of patients, including two cases of delayed perforation requiring surgical therapy.

ePP31 PUBLIC ATTITUDES TO COLONOSCOPY: THE PURPOSE OF COLONOSCOPY

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Aims European public beliefs and attitudes to colonoscopy are poorly understood. A survey was conducted to better understand the issue.

Methods An online survey was conducted in five large European countries (UK, Germany, France, Spain, and Italy), among members of the general public who had not had a colonoscopy. One of 10 questions asked: Which of the following do you think colonoscopy is used for?

A) Diagnosing diseases of the bowel; B) Screening for bowel cancer; C) Monitoring of people with bowel cancer; D) Preventing bowel cancer; E) Removal of unusual growth in the bowel; F) Abdominal surgery; G) Radiology; H) None of the above.

Friday, April 5, 2019 13:00 – 13:30
CRC screening 1 ePoster Podium 3

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Efficacy and safety pancreatitis in pediatric population: long-term endoscopic treatment of chronic pancreatitis

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Aims Chronic pancreatitis (CP) in children is an increasingly recognised disease. Purpose of study was to analyse safety and long-term efficacy of endoscopic treatment in children with CP.

Methods Records of 38 patients <18 years, referred to Digestive Endoscopy Unit at Catholic University, Policlinico "A. Gemelli" between 1991 and 2017, were reviewed. Abdominal pain, analgesia and number of episodes of acute pancreatitis in pre- and post-ERCP period were evaluated. Need for surgery was assessed. Therapeutic intervention data and complications were interrogated.

Results 158 ERCPs were performed. Median post-ERCP follow-up was 7 years. Majority of patients had CP type IV (47%) and type Ib (37%) (Cremer's classification). Major papilla pancreatic sphincterotomy was performed in 47%, major and minor in 24% and minor in 29%. Stones/plugs were removed in at least one of ERCPs in 66% individuals. Eleven out of 38 patients had stenosis of pancreatic duct; these were dilated and stented in 5/11 and stented in 6/11. Five complications were recorded (3%). Severity and frequency of abdominal pain improved significantly; p<0.001. Use of analgesia and number of episodes of AP decreased significantly; p<0.001. One child required subsequent surgery.

Conclusions Endoscopic management of symptomatic CP in children is safe and effective.

Pancreatic duct stones in symptomatic, treatment refractory chronic pancreatitis – 12 months follow up on clinical, technical success and quality of life

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Aims Pancreatic duct (PD) stones are a common complication in chronic calcifying pancreatitis (CCP) and can contribute to pain onset and exacerbation. Digital-single-operator-pancreatocscopy (d-SOP) guided lithotripsy was shown to be a promising option of therapy regarding technical success (95% ductal clearance) and clinical success after 3–6 months follow-up, achieved in 95% of patients. There is only little evidence of mid-and long-term clinical success or impact on quality of life.

Methods Multicenter, retrospective analysis of all d-SOP (SpyGlass DS) guided lithotripteses (n=23) of PD stones performed between 2015 and 2017 in CCP patients. Clinical success (defined as pain reduction >50% in numerical rating scale) was determined by a systematic questionnaire regarding pain intensity and incidence as well as quality of life based on SF-12 after 3, 6 and 12 months in an ongoing follow up.

Results After 12 months 2 of 20 patients were referred for partial pancreatectomy, one was lost to follow-up. Of the 17 remaining clinical success was persistent in 11 (55%). Regarding quality of life twelve patients described major improvements in symptoms and disability in daily life. There was no need of further interventional therapy except subsequent stenting in case of persistent PD stenoses.

Conclusions D-SOP guided lithotripsy is safe and effective regarding technical success and clinical outcome. Beneficial effects on symptom control and quality of life seem to last in the majority of CCP patients after a 12 months follow-up and are comparable to published ESWL results. Technical success was persistent even after 12 months.


refractory symptomatic pancreatic strictures. Outcomes were technical success, stricture, and pain resolution, recurrence of symptoms, adverse events and need for surgery. We reported proportions (expressed as a percentage), with their 95% CI, found in the individual studies included in the meta-analysis, given both for the Fixed effects model and the Random effects model. Pooled analysis was performed using a proportion with Medcalc statistical software.

**Results** 9 studies were identified, for a total of 139 patients. FC-SEMS had a pooled rate (PR) of 98.5% for technical success, 85.3% (95% CI 69.3–96.1) for stricture resolution and 68.6% (95% CI 47.3–87.8) for complete pain resolution. Other outcomes were as follows: stricture recurrence (PR 15.4% 95% CI 6.1–27.9), need for re-stenting (PR 26.8% 95% CI 9.5–48.9), adverse event (PR 12.1% 95% CI 7.4–18.5), stent migration (PR 17.2% 95% CI 3.74–37.8), PEP (PR 12.7% 95% CI 5.7–23.3) severe pain (PR 18.7% 95% CI 6.0–39.2), de novo stricture (PR 18.6% 95% CI 7.7–34.8), need for surgery (PR 10% 95% CI 1.8–28.3).

**Conclusions** FC-SEMSs are effective in the treatment of refractory strictures with a pooled rate of 85% for stricture resolution and 68% for pain resolution. However, FC-SEMSs carry a high rate of adverse events and stricture recurrence, with a pooled rate of 85% for stricture resolution and 68% for pain resolution. Further studies are needed to define the role of FC-SEMSs in refractory MPD strictures.

**ePP37** IMPACT OF EUS-FNB FROM PERITONEAL LESIONS FOR AVOIDING DIAGNOSTIC LAPAROSCOPY: A PROSPECTIVE COHORT STUDY (THE IMPALA STUDY)

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**DOI** 10.1055/s-0039-1681582

**Aims** To prospectively study impact and amount of tissue for immunohistochemical staining (IHCs) of EUS-FNB from peritoneal lesions.

**Methods** From March 2017 to June 2018, a total of 36 EUS-FNB passes were prospectively performed in 15 patients with peritoneal lesions (7 males, 8 females; mean age 60.9 ± 11.3 years) at the King Chulalongkorn Memorial Hospital, Bangkok, Thailand.

**Results** Ascites was detected by CT and EUS in 87.7% (13/15) and 93.3% (14/15) of patients, respectively. Percutaneous abdominal paracentesis was feasible in 80% (12/15) of patients. Ascites cytology was positive for malignancy in only 6.7% (n = 1) of patients. Median number of passages of EUS-FNB was 3 (2–3 times) per case. Needle types were 20G needle. No procedure related adverse events. Amount of tissue was graded as grade A (sufficient core tissue for diagnosis and IHCs), B (a diagnosis based on cell morphology), and C (not enough tissue for diagnosis) in 72.2% (26/36), 11.1% (4/36), and 16.7% (n=6/36) of 36 passes, respectively. Blood contamination was <25%, 25–50% and >50% in 88.9% (32/36), 5.6% (2/36), and 5.6% (2/36), respectively. Of 13 patients with amount of tissue was graded as A, 9 from 13 showed positive results for malignancy. Diagnoses by IHCs were confirmed by subsequent surgery in 33.3% (3/9) of patients. Benign diagnosis was finally made with long term follow up in 1 from 15 patients. Malignancy was correctly diagnosed by core tissue biopsy from EUS-FNB in 9 from 14 patients (64.3%). For another 5 patients with malignancy, diagnoses were finally made by tissue (n = 3) and follow up (n = 2).

**Conclusions** EUS-FNB from peritoneal lesions provided adequate tissue for IHS in majority of patients and diagnostic laparoscopy is not required in positive cases.

**ePP38** HIGH PERFORMANCE OF A NEW FRANSEEN NEEDLE FOR ENDOSCOPIC ULTRASOUND-GUIDED FINE-NEEDLE BIOPSY IN SOLID LESIONS: A RETROSPECTIVE MULTICENTER STUDY

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**DOI** 10.1055/s-0039-1681582

**Aims** Endoscopic ultrasound-guided fine needle aspiration (FNA) is the standard choice to sample gastrointestinal/pancreatic lesions. EUS-FNA is accurate when rapid on-site evaluation (ROSE) is performed, but ROSE is not always available. EUS-guided fine needle biopsy (EUS-FNB) can give a better chance to reach a diagnosis providing more tissue. It is not simple to use 19-gauge needles especially in transduodenal settings for risk of complications. A new needle for EUS-FNB, the AcquireTM needle is available from 2016. Data for pancreatic and non pancreatic solid lesions are available but these are based only on small sample size studies. The aim of our study is to perform a retrospective evaluation of all sampling procedures performed using the 22/25 gauge AcquireTM needle in patients with solid lesions.

**Methods** We performed a retrospective analysis of prospective, multicentric databases in five Italian Endoscopic centres, including all consecutive patients with solid lesions who underwent EUS with tissue sampling 22/25-gauge Acquire needles between June 2016 and October 2018. All lesions localized at pancreas, nodes, biliary, kidney/liver masses, periduodenal/perigastric abdominal masses were enrolled in the study. Features of masses at EUS evaluations and technical details of FNB were recorded.

**Results** 370 patients (60.2% males, mean age 64.3) were enrolled. EUS-FNB was performed using the 22 and 25 gauge AcquireTM needle. The biopsies were done transgastrically in 160 (43%) cases and transduodenally in 210 (57%) ones. A mean of 2.2 ± 0.32 passes per lesion site were performed, without any complication. A tissue core biopsy sample for histological evaluation was obtained in 362 (97%) cases. In all the cases, the specimens were useful for cytological analysis. Acquire sensitivity, specificity and diagnostic accuracy were 98.8%, 100% and 98.7% respectively.

**Conclusions** EUS-FNB using the 22 and the 25-gauge AcquireTM needle has a very high accuracy and is useful to achieve histological sample in almost all the patients.

**ePP39** CONSCIOUS SEDATION FOR ENDOSCOPIC ULTRASONOGRAPHY WITH FINE NEEDLE ASPIRATION IS EFFECTIVE AND WELL-TOLERATED

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**DOI** 10.1055/s-0039-1681583

**Aims** Endoscopic ultrasonography (EUS) is an important procedure for the diagnosis of pancreatic disorders allowing fine-needle aspiration (FNA). We aimed to investigate the efficacy and tolerance of the procedure in patients who received only conscious sedation.

**Methods** Patients who underwent EUS for diagnostic evaluation and tissue acquisition for pancreatic disorders were prospectively evaluated for the efficacy and tolerance of sedation. Sedation used included combination of midazolam and fentanyl to achieve relaxation or mild sleep, but keeping patient
responsive to orders and able to open his eyes when instructed to do so. Oxygen saturation, blood pressure and pulse rate was constantly monitored during procedure and until complete recovery of patients.

**Results** In total 80 subsequent patients who underwent evaluation of a pancreatic solid or cystic lesion were studied (45 males, median age 72, range 42 – 88 years). The patients received midazolam at a median dose of 3.2 mg (range 1 – 8 mg) and fentanyl at a median dose of 50 mcg (range 25 – 150 mcg). Procedure was tolerated rather well in all patients and was abandoned after a less than expected number of needle passes in only four patients. When interviewed, 52 patients found procedure comfortable, 14 patients well-tolerable, 14 patients uncomfortable. Pancreatic evaluation achieved in all patients and tissue acquisition achieved in 74. In the remaining patients procedure had to be repeated (in 4) or surgical biopsy was preferred (in 2). The median duration of the procedure was 32 minutes (range 18 – 72 minutes). However, physicians performing procedure found that deep sedation would be preferable for at least half of the patients.

**Conclusions** EUS-FNA can safely be performed with conscious sedation in the majority of patients, if there is no availability of deep sedation. This may not be the case in patients who cannot be easily sedated if of patient has to undergo more complex procedure.

Friday, April 5, 2019
**GI bleeding 2**
**ePoster Podium 6**

ePP40 THE EVOLUTION OF OESOPHAGEAL VARICES IN NON CIRRHOTIC PORTAL HYPERTENSION CAUSED BY PORTAL VEIN THROMBOSIS

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**Aims** The aim of our study is to specify the evolution of oesogastric varices and thus haemorrhagic recurrence risk in patients with portal hypertension (PHT) by portal vein thrombosis (PVT).

**Methods** This is a retrospective study from January 1991 to February 2017, including 163 patients followed for PHT due to PVT without liver disease. PVT was diagnosed by abdominal doppler ultrasonography in all patients.

**Results** The mean age was 34.4 ± 14 years. The sex ratio M/F was 0.49. In all patients, upper GI endoscopy was performed. Hypertensive gastropathy was found in 30.7% (n = 50), Grade I oesophageal varices (OV) in 6% (n = 10), grade II in 30.7% (n = 50), grade III in 47.2% (n = 77) and gastric varices were noted in 14.7% (n = 24). These varices were the site of red signs in 19%. All patients had abdominal doppler ultrasonography showing a PVT in 54.6% (n = 89), this was partial in 31.9% (n = 52), complete in 11.6% (n = 19) and extended to the splenic venous in 11.1% (n = 18). Portal cavernoma was found in 45.4% (n = 74). All patients performed an etiologic assessment of thrombosis, myeloproliferative syndrome was found in 7.3% (n = 12), deficiency in coagulation inhibitor in 31.3% (n = 51), celiac disease in 4.9% (n = 8), neoplasia in 3.7% (n = 6), abdominal surgery in 9.2% (n = 15), pregnancy in 1.2% (n = 2) and no etiology was found in 42% (n = 69). Endoscopic variceal Ligation (EVL) was performed in 65.6% (n = 107), the mean number of ligation sessions was 3 and eradication of varices was noted in 99% (n = 106). All patients received anticoagulant therapy except those having portal cavernoma with no obvious cause. During following up, no bleeding recurrence was noted in 84% (n = 137) and 6% (n = 10) of deaths were reported.

**Conclusions** The evolution of oesophageal varices in portal hypertension due to PVT unrelated to cirrhosis seems to be better than in cirhctic portal hypertension.

ePP441 ACUTE GASTROINTESTINAL BLEEDING IN THIRD WORLD COUNTRIES WITH FEW RESOURCES: A STUDY OF 1347 PATIENTS IN SPECIALIZED CENTRE

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**DOI** 10.1055/s-0039-1681585

**Aims** Acute gastrointestinal blood loss presents a management challenge and a crucial threat to the patients. The bleeding lesion cannot be easily controlled by endoscopy for unexperienced hand, but it is necessary for definitive diagnosis and management. The aim of this study is to reflect the causes, and management of acute gastrointestinal bleeding in Sudanese patients.

**Methods** It is cross sectional hospital based study, it included 1347 patients who presented to Mohamed saleh idris-bleeding centre, Ibn sina specialized hospital, Khartoum, Sudan, a specialized centre that receives 1900 – 2200 active gastrointestinal bleeding patients per year as an emergency, all patients were admitted, resuscitated and decision of endoscopy was made for all, data collected and analysed by SSPS.

**Results** Nearly 95% of patients had upper gastrointestinal bleeding, it is common in male and the mean age was 45 years. Oesophageal varices due to bilarial portal hypertension was diagnosed in more than 90%, most of them had active bleeding. Sclerotherapy was used in the majority of them to stop bleeding, band ligation in 10.1%, both sclerotherapy and band ligation in only 1.8%. Sengestaken tube was used in 9.4%, approximately 9% had fundal varix and only 6% had both oesophageal and fundal varix, and few patients had ectopic duodenal varix, all of them were injected with N-butyl-2-cyanoacrylate (Histoacyr), while only 5.6% of the patients had ulcer and few patients had gastric malignancy. The most common cause of lower gastrointestinal bleeding was upper gastrointestinal bleeding followed by diverticular disease in 39.6%, colonic tumours 12.34%, inflammatory bowel disease 10.4%, angiodysplasia 4.5%, and the remaining were ischemic colitis, rectal varix and small bowel origin.

**Conclusions** Oesophageal varices and diverticular disease being the commonest causes of acute gastrointestinal bleeding. Sclerotherapy is cheap and beneficial in cessation of active oesophageal variceal bleeding, and N-butyl-2-cyanoacrylate is effective in gastric and duodenal varix.

ePP442V THE USE OF OVER-THE-SCOPE CLIP IN THE MANAGEMENT OF ACUTE ESOPHAGEAL VARICEAL BLEEDING

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**Aim** Esophageal bleeding control associated to portal hypertension (PHT) might be difficult using endoscopy band ligation (EBL) due to either collapse of the bleeding varix or scarring the mucosa due to fibrosis secondary to prior banding. The over-the-scope clip (OTSCs; Ovesco, Tübingen, Germany) has been reported to control non-variceal bleeding, but there is scarce data about the use related to variceal bleeding (VB). So our aim is to describe our experience in terms of efficacy and safety with this novel method.

**Methods** We report a case series study of consecutive adult patients with active VB treated with OTSC after EBL failure between October2017 to September2018 at a two tertiary care centers in our region. Efficacy of bleeding control is the absence of bleeding immediately after using OTSC until 7-days after; safety is the absence of complications associated with OTSC placement during 30-day follow-up period.

**Results** Total 5 patients are included (3men/2women), and the mean age is 57 years (50 – 64 years). 4 patients have PHT due to liver cirrhosis and one has...
nodular regenerative hyperplasia because of Osler-Weber-Rendu disease. 80% have clinically significant PHT (HVPG mean 15 mm Hg, 13 – 16 mm Hg) and 100% of patients had prior EBL (1 – 3 sessions). In 4 cases EBL was not possible due to collapse of the varix and the other was due to scarring the mucosa. We use OTSC type “t” (pointed teeth) 12 mm using a diagnostic videogastroscopy (GF-H290; Olympus Medical Systems, Tokyo, Japan) in all cases. Adequate bleeding control was achieved in 100% of patients, and no re-bleeding occurred. There were no complications during 30-day follow-up and only one patient developed dysphagia after 4 months of placement.

Conclusion When there is an esophageal variceal bleeding refractory to EBL, the use of OTSC can be an endoscopic effective and safety alternative in the pursuit of bleeding control.

Aims

To determine the satisfaction level and to know the main quality problems that patient perceives after a endoscopy in gastrointestinal endoscopy unit, through a satisfaction test.

Methods

A cross-sectional descriptive study was performed at endoscopy unit between May-July 2018. After the recovery, patients were offered anonymously and voluntarily to answer a questionnaire, an adaptation of mCHAA-9; validated and easy to apply.

Results

754 surveys were carried out, 489 in the morning and 542 colonoscopies. Half patients were males. The 88% said they read the informed consent. Almost all the procedures were under sedation: 66% was sedated with propofol (P), 57% of patients did not feel any discomfort; patients sedated with P have significantly less discomfort than those with F/D (p < 0.05). Waiting time to the appointment was too much for 24%, the delay at the same day of endoscopy was acceptable to 91% of participants. To the patients of the afternoon shift, normal priority, the time of delay seemed significantly greater (p < 0.05); the wait on the same day of the test was higher in the morning shift (p < 0.05). The courtesy of staff and respect for privacy were scored as very good or excellent by 85 and 72%, without differences between groups.

The overall score was excellent and very good in 80% of the cases; There were differences between shifts, with the total score being significantly better in the afternoon (p < 0.05), and also in men compared to women. The information received about test and preparation was adequate (27 – 39%) in more than half of patients. Finally most of patients would repeat the test in our hospital with same staff.

Conclusions Sedation with propofol significantly decreases discomfort, its use should be considered. Courtesy and respect for privacy are important to maintain patient confidence. Endoscopy waiting list and information given to patients are areas to improve.

ePP44 COMFORT: IN THE EYE OF THE BEHOLDER?

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Aims Patient comfort score is a recognised key performance indicator in the delivery of colonoscopy. Limited data exists regarding the degree of agreement between endoscopy staff and patients regarding comfort level during colonoscopy.

Methods Endoscopist and nurse recorded comfort scores were prospectively recorded for each colonoscopy from the endoscopy documentation, and a patient comfort score was completed by the patient in the recovery area using the standard Gloucester comfort scoring system. Results were compared among groups using Pearson’s correlation coefficient and a chi square test with a p ≤ 0.05 considered significant.

Results

To date, 104 patients have been included, 61% female (n = 63), and the majority of patients were > 50 yrs (mean 59 yrs, range 23 – 89 yrs, n = 75). 86% (n = 89) were diagnostic procedures and 80% (n = 83) of the procedures were performed by gastroenterologists. The median sedation used was 3 mg of midazolam (0 – 5 mg) and 50mcg of fentanyl (0 – 100mcg). We identified discordance between reported comfort levels between patients, nurses and doctors. Correlation was greatest when comparing nurses and doctors (r = 0.85). Agreement between patients and doctors was moderate at best (r = 0.51), with moderate levels of agreement also noted between patients and nurses (r = 0.55). 38% (n = 40) of patients reported higher levels of discomfort (comfort score ≥ 3), compared with 25% (n = 26) of doctors (p = 0.05) and 30% of nurses (n = 31) (p = 0.1). Significantly higher doses of sedatives (≥ 3 mg midazolam) were recorded in these patients with the greatest level of discomfort compared with patients with Gloucester score 1 – 2 (63% [n = 25/40] vs. 40% [n = 26/64], p = 0.03). Comparison of comfort scores according to procedure duration, age, or gender did not reveal significant differences. However, younger patients (n = 29), 31% (n = 9) self-reported higher levels of discomfort, all of whom were female (p = 0.002).

Conclusions These results suggest that the perception of procedure related discomfort varies between these three groups, including endoscopists and nurses. This study also highlights the challenge of accurate patient comfort score reporting as a quality performance indicator during colonoscopy.

ePP45 HOW LONG TIME SHOULD AN ESOPHAGOGASTRODUODENOSCOPY BE DONE?

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Aims Esophagogastroduodenoscopy (EGD) is commonly used to detect upper gastrointestinal (GI) neoplasms. However, it is not clear how the time of EGD affects the detection of cancer or premalignant lesions that increase the risk for GI cancer. We investigate whether differences in endoscopy exam time of cancer affect cancer detection rates.

Methods We performed a retrospective analysis of data from 24,604 subjects who underwent EGD as part of a comprehensive health-screening program from January 2016 to December 2016 in Korea. Endoscopy findings were extracted from reports prepared by 9 board-certified endoscopists. Endoscopists were classified as fast, moderate or slow based on their mean examination time for a normal EGD without biopsy during their first year of the study. All endoscopists used the same endoscopy unit.

Results Mean examination time of EGD without biopsy was 3.9 min (range, 2 – 14 min). When cut-off times of 3 and 7 min were used, three endoscopists were classified into the fast (mean duration, 2.6 ± 1.0 min), 4 into the moderate (3.8 ± 1.4 min), and two into the slow (7.2 ± 1.3 min) groups. Neoplastic lesion detection rates in the fast, moderate, and slow groups were 0.95%, 0.96%, and 0.95%, respectively. There was no statistical difference in the detection rate. The rate of complications such as Mallory-Weiss tear was higher in slow group.

Conclusions Examination time is important in endoscopy. However, a simple increase in the examination time did not increase the detection rate of precancerous lesions. It is important to more detail observation about the suspicious lesion during the examination and to learn the blind spot test. Further research is needed in the future.
**ePP46 PROGNOSIS OF GASTRIC DYSPLASIA AFTER COMPLETE RESECTION WITH ENDOSCOPIC PROCEDURES CONSIDERING MUCIN PHENOTYPE**

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**DOI** 10.1055/s-0039-1681590

**Aims** Gastric adenomas are considered premalignant, and some can be interpreted as cancer according to different pathologic guidelines. The dysplastic lesions share histologic characteristics including mucin phenotype that are related prognosis. The prognosis of the lesions has been studied but tends to be researched separately. Moreover, the proposed prognostic factors are mostly derived from the study of surgical specimens, and most of them did not consider the anatomical changes after surgery. Previously researched prognostic factors of gastric dysplasia were evaluated on the recurrence after complete resection with endoscopic procedure.

**Methods** From 2005 to 2016, 1678 gastric dysplasia were endoscopically removed in Soonchunhyang university hospital, Seoul. They were followed up with endoscopy under a standardized protocol. For the 716 lesions were histologically evaluated including mucin phenotype with immunohistochemical stain of MUC5AC, MUC6, MUC2, and CD10. Recurrence of dysplastic lesions were analyzed for the 688 lesions with at least 1 year follow-up.

**Results** Five-hundred and forty-three malignant lesions including in situ lesions were completely resected with endoscopic procedures. Endoscopic submucosal dissection was performed on 603 lesions and other lesions were removed with endoscopic mucosal resection. Submucosal invasion was on 83 lesions of carcinoma. The mucin phenotype of lesions was immunohistochemically evaluated. During median 40 months of follow-up, there was 89 cases of recurrence (12.9 %). Kaplan-Meier analysis of the recurrence-free survival were estimated and the elderly over 65 years of age showed statistical significance (p = 0.039).

**Conclusions** Completely resected early stage of gastric dysplasia showed relatively low recurrence rate. Previously proposed histologic features did not affect prognosis. However, the age of patient showed statistical significance on recurrence-free survival. Regular surveillance on elderly patients is important to improve the clinical outcome of gastric dysplasia.

**ePP47 THE PREVALENCE OF GASTRIC NEOPLASIA IS ENHANCED IN PATIENTS WITH CHRONIC LIVER DISEASE COMPARED TO A HEALTHY SCREENING POPULATION**

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**Aims** The standard paradigm of screening varies in patients with cirrhosis has for the greater part involved esophagogastroduodenoscopy (EGD). More recently, however, the Baveno VI criteria were proposed to identify patients who could safely avoid screening EGD. Epidemiological studies have suggested that patients with cirrhosis have an increased risk for gastric cancer. We aimed to evaluate the prevalence of gastric neoplasia in cirrhotic patients who underwent screening EGD in a country with intermediate gastric cancer risk.

**Methods** This retrospective case-control study enrolled all asymptomatic cirrhotic patients who underwent EGD for varices screening from January 2008 to June 2018. Cases were matched with asymptomatic healthy individuals who underwent EGD for gastric cancer screening at the same time as colonoscopy performed for colorectal cancer screening.

**Results** We included 1974 subjects (610 patients, 1364 controls). Besides a male predominance in cases, no other demographic characteristic differed between groups. The leading aetiology of cirrhosis was alcoholic liver disease (53.3%) and chronic hepatitis C (16.2%). Of the 610 patients with cirrhosis, 13 (2.1%) had gastric neoplasia [gastric cancer, n = 10; high-grade dysplasia, n = 2; low-grade dysplasia, n = 1]. Most of the lesions (61.5%) were located in the gastric body, with a median size of 18 mm (15 – 24). Eight patients underwent surgical resection, 3 endoscopic resection (n = 2 ESD, n = 1 EMR) and 2 were referred for palliative care due to decompensated liver disease. Compared to controls, cirrhotic patients had a higher prevalence of gastric neoplasia [2.1% vs. 1%, p = 0.044; gastric cancer 1.6% vs. 0.8%, p = 0.08]. The prevalence of Helicobacter pylori infection was lower in patients compared to controls (36.2% vs. 47.2%, p = 0.004).

**Conclusions** The prevalence of gastric neoplasia is significantly increased in patients with cirrhosis compared to healthy screening population. Despite growing evidence supporting the role of non-invasive methods to rule out varices, EGD should still be considered in cirrhotics, at least in those from countries with intermediate gastric cancer risk.

**ePP48 GASTRIC ADENOCARCINOMA UNDER THE AGE OF 60: A MULTICENTRIC STUDY FROM SOUTHERN EUROPE**

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**Aims** In Europe, gastric adenocarcinoma (GC) is commonly regarded as a disease of the elderly. This study aims to assess the proportion, characteristics, and survival of patients diagnosed with GC under the age of 60.

**Methods** This is a retrospective, multicentric, and analytical study conducted at four tertiary hospitals. All patients diagnosed with GC between 2008 – 2015 were included. Demographic, clinical, endoscopic, histologic, and survival data were retrieved. A multivariate analysis was performed to compare GC in young (age ≤ 60 years) and elderly patients.

**Results** A total of 1,374 GC were included. The mean age was 74 years (SD:11.1) and 62.2 % were males. One hundred seventy-seven patients were under the age of 60 (12.9%, 95% CI = 11.2 – 14.8%). GC was frequently encountered as a metastatic disease in both young and elderly patients (Stage IV: 45.7 % and 41 %, respectively). In the multivariate analysis, alcohol abuse, ASA functional status I-II, diffuse subtype, neoadjuvant, and palliative therapy were independently associated (p < 0.05) with GC≤60 years. No differences were found in 2-year survival (GC≤60: 39% vs. 35%, p = 0.45). Curative- intent surgery, TNM stage I-II, body mass index <30 kg/m2, and better functional status at diagnosis were independent predictors of survival in GC under the age of 60.

**Conclusions** One out of eight cases of GC were diagnosed below 60 years. Overall survival was poor regardless of age. Factors associated with localized disease correlated with improved survival in younger patients, altogether underlining the urgent need for early diagnosis strategies in Western countries.
ePP49 A COMPARISON STUDY OF 2L PEG-ASCORBIC ACID VERSUS 1L PEG-ASCORBIC ACID WITH BISACODYL VERSUS SODIUM PICSULFATE/MAGNESIUM CITRATE WITH BISACODYL AS BOWEL PREPARATION

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Aims: Bowel preparation is the most important colonoscopy quality indicator because it affects both the cecal intubation and adenoma detection rates. Ingestion of a large volume of PEG, as well as its unpleasant taste, results in low compliance rates and unsatisfactory cleansing quality. To reduce drug dose and increase patient satisfaction, we would like to compare the efficacy and patient satisfaction of the following three methods: 2 Liters of PEG-ascorbic acid regimen versus 1 Liters of PEG-ascorbic acid plus bisacodyl versus Sodium pico-sulphate with magnesium citrate (SPMC) plus bisacodyl.

Methods: This study was a single center, randomized, prospective, observer-blinded study. The study was performed from April 2018 to July 2018 and we enrolled 300 patients and randomly classified them into three groups of 100 patients each. To evaluate bowel cleansing, we used the Boston bowel preparation scale (BBPS). The degree of discomfort and satisfaction of the patients in the bowel preparation process was investigated through questionnaire.

Results: Baseline characteristics of the three groups were similar. There was no significant difference in the bowel preparation quality using BBPS in three groups. Abdomen fullness was statistically significantly lower in SPMC and bisacodyl group. Also patients satisfaction compare with previous preparation was significantly higher in the SPMC and bisacodyl group.

Conclusions: In this study, the combination of SPMC and bisacodyl group is similar for the improvement of the bowel preparation than the other PEG groups. However, the SPMC and bisacodyl group patients feel more comfortable than other groups. Therefore, in order to satisfy both good intestinal cleansing and patient compliance, we conclude that bowel preparation with SPMC and bisacodyl might be the better method than others.

ePP50 LAB AUTOMATIC EVALUATION OF COLON CLEANSING

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Aims: For objective estimation of colon cleansing, we propose a LAB color selection procedure to automatically detect and compute the Bowel Preparation Coefficient (BPC) on more scales, on the informative frames of a video colonoscopy.

Methods: The advantage of LAB color space is that one of the three numerical values used to express color, is the lightness (L*). The other two axes green-red (a*) and blue-yellow (b*), components, are more approached to the human perception than other color spaces.

To retain only the relevant video colonoscopy frames and to decrease the complexity, we detect the edges on each frame, we test the entropy levels on sub-frames and we discard the non-informative images. On a semi-supervised detection we identify the color cube and color squares corresponding to residual material presence on bowels, slightly varying for each patient. Areas for valid frames are computed and summed, obtaining the overall final estimation.

Results: Tests have been made on tens of thousands of frames. We may obtain up to 50,000 frames from a 20 minutes video colonoscopy. We used 17 videos of slightly different lengths. Blurred frames, highly lighted, light reflections were automatically discarded. On the remaining frames we identified fecal residues and computed a "b*" color features. For speed, we take into consideration only the two color variables during the final total color evaluation on the valid frames of a video.

Conclusions: Previous attempts have been made using RGB color space, characterized by computing burden. Our method offers an algorithm easy to compute, results being obtained faster. This procedure can be applied to the video recordings, saving time and facilitating the computer-assisted analysis of the cleansing aspects, relevant for diagnosis in colonoscopy.

ePP51 SPLIT-DOSE LACTULOSE WITH ADJUNCTIVE ORAL BISACODYL AND ORAL SODIUM PHOSPHATE: A PILOT STUDY OF A NOVEL BOWEL PREPARATION

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Aims: Various colono-scopic bowel preparations are in use clinically. Split-dose preparations are generally recommended for morning colonoscopies. We herein present a novel form of bowel preparation with split-dose lactulose as the backbone with oral bisacodyl and sodium phosphate, in a pilot study assessing its safety and efficacy.

Methods: Patients were instructed to adhere to clear fluids from 2000hrs the evening before. The bowel preparation utilised oral lactulose 30 mLs and bisacodyl 5 mg at 2200hrs the evening before, followed by oral lactulose 100 mLs and oral aqueous sodium phosphate 20 mLs four hours prior to the scheduled colonoscopy. All colonoscopies were carried out during the morning session. Patients’ demographics, past medical and surgical history, indication for colonoscopy, tolerability, presence of side effects, colonoscopy findings, and bowel preparation cleanliness were recorded.

Results: This pilot study consisted of 82 patients with 41 females (50%), with a median age of 57 years (range 22 to 78). The most common indication for colonoscopy was abdominal pain (43 patients, 52.4%). 78 patients (95.1%) completed their bowel preparation, with only two patients (2.4%) suffering from side effects (vomiting). Median time to reaching the cecum was five minutes (median 3–25), and withdrawal time was 14 minutes (median 10–39). 55 patients (67.1%) and six patients (7.3%) had polyps and a malignancy detected respectively. 0 patients (0%), five patients (6.1%), 45 patients (54.9%), 32 patients (39.0%) had inadequate, poor, good, and excellent bowel preparation as per the Boston Bowel Preparation Scale.

Conclusions: This novel split-dose bowel preparation is safe, well-tolerated, and efficacious in selected patients. It should be assessed against other established preparations in future studies.
**ePP52 COLD SNARE PIECEMEAL ENDOscopic MICROSAL RESECTiON (CSP-EMR) OF LARGE SESSELL COLONIC POLYPS ≥ 20 MM IS FEASIBLE, SAFE AND EFFECTIVE**

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**Aims** EMR is the standard therapy for resection of large (≥20 mm) non-malignant sessile colonic polyps. Serious adverse events are mostly due to electrocautery. This could be avoided by cold-snare-EMR. We hypothesized that aggressive wide field cold snare piecemeal EMR (CSP-EMR) could be as effective as conventional EMR, but with fewer adverse events. The study evaluated safety and efficacy of CSP-EMR for ≥ 20 mm sessile colonic polyps.

**Methods** All CSP-EMR cases performed by a single endoscopist (A.M.) at two academic hospitals for sessile polyps ≥ 20 mm, from Jan 2016-Dec 2017, were identified retrospectively. During this period, all lesions that were not suspicious for submucosal invasion, and were not very large Paris 0-Is lesions where cold snare resection would be technically very difficult, were performed by CSP-EMR. Efficacy was defined as the absence of residual or recurrent polypl during the first surveillance colonoscopy, which was assessed by rigorous endoscopic scar examination and biopsies for histology. Clinically significant intra-procedural or delayed adverse events, histological outcomes and surveillance colonoscopy findings were assessed by reviewing medical records.

**Results:**

<table>
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<th>Tab. 1 Results</th>
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<tr>
<td><strong>Patients demographics:</strong></td>
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<td><strong>Polyp details:</strong></td>
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<td><strong>Histology:</strong></td>
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<td><strong>Surveillance:</strong></td>
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<td><strong>Adverse events:</strong></td>
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**Conclusions** CSP-EMR of sessile colonic polyps ≥ 20 mm is feasible and was at least as effective as conventional EMR, but with improved safety profile. We hypothesized that the enhanced safety of cold snaring allowed for an aggressive wide field resection that reduced recurrence rates. A randomised controlled trial or large prospective observational studies are required to more rigorously demonstrate non-inferiority and improved safety profile of CSP-EMR compared to conventional EMR, and to further determine which polyp morphologies are best suited to CSP-EMR.

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**ePP53 POLYPECTOMY IN SCREENING COLONOSCOPY – ARE WE FOLLOWING THE PUBLICATION OR THE GUIDELINES?**

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**Aims** The European Society of Gastrointestinal Endoscopy (ESGE) guidelines for colorectal polypectomy recommends cold snare polypectomy for all diminutive (≤ 5 mm) and small polyps between 6 – 10 mm. In a publication from Britto-Arias the forceps resection rates (FRR) for polyps ≥ 5 mm were 22.75% in hospitals and 52.58% in private practices. The aim of this study was to compare if the publication of own results or publication of the guidelines has more impact on the reduction of FRRs of polyps ≥ 5 mm.

**Methods** 107.124 colonoscopies performed by 279 endoscopists between 08/2015 and 10/2018 were assessed within the Austrian quality assurance program for screening colonoscopies. For the demonstration of the endoscopists adherence to the European polypectomy guidelines, the resection technique, based on the polyp size before (08/2015 – 03/2017) and after (04/2017 – 10/2018) the publication of the guidelines was assessed and compared. Further we investigated if there was a decrease of the FRR after our prior study by Britto-Arias et al. (08/2015). Therefore, endoscopists were subclassified according to their facility (hospital, private practice).

**Results** A total of 90,279 screening colonoscopies performed by 266 endoscopists were included in this study. The polyp detection and resection rate were 38.58% (n = 34,826) and 91.74% (n = 31,948), respectively. Overall, 28.00% (n = 5,251) of polyps ≥ 5 mm were resected using forceps, which does not correspond to the ESGE-Guidelines. For polyps ≥ 5 mm the FRR decreased in private practices after both publications (RR0:0.689 vs 0.83; p < 0.001). In contrast, in hospitals a significant decrease of the FRR was observed after the study but not after the guideline’s publication (RR0:0.91 vs 1.19; p < 0.001). At least, for polyps ≥ 5 mm endoscopists had a mean adequate polypectomy technique rate of 68.31% (C95%: 64.21 – 72.41).

**Conclusions** Regarding to the polypectomy technique, we have investigated that the study publication leads to an increase of the adherence for polyps ≥ 5 mm in both, hospitals and private practices.

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**ePP54 CAN SERT SCORE PREDICT HISTOLOGICAL RECURRENCE IN PIECEMEAL ENDOscopic MICROSAL RESECTION? – A COMPARATIVE STUDY WITH SMSA SCORE**

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**DOI** 10.1055/s-0039-1681598

**Aims** Piecemeal endoscopic mucosal resection (pEMR) allows the resection of larger non-invasive colorectal lesions. Prediction of histological recurrence (HR), as determined in the first surveillance colonoscopy, is still a limitation. The recently described SERT score (Sydney EMR-recurrence test) can predict endoscopic recurrence (ER), however it was not evaluated as a predictor of HR. The present study aimed to validate the SERT score as a predictor of ER and HR as to compare it with the SMSA score (size, morphology, site, access) already validated as a predictor.

**Methods** The SERT and SMSA scores were calculated for all lesions submitted to pEMR between 2012 – 2018. In the first surveillance colonoscopy, performed at 3 – 6 months, ER and HR were evaluated. In the absence of ER, biopsy of the scar was performed in most cases. In patients with ER, removal of the residual lesion was attempted.

**Results** 188 pEMR were considered. 61.7% were males and the mean age was 66.1 ± 9.8. Most lesions were located at the right colon (n = 47, 59.0%). Mean size was 31.0 ± 13.8 mm. ER was suspected in 27.1% (n = 51), and in 72.5% of these cases (n = 37) HR was confirmed. There was a moderate positive correlation between the SERT and SMSA scores (r = 0.57). There was a significant association between SMSA score and ER (p < 0.001) as well as HR (p < 0.001). SERT score was also significantly associated with ER (p = 0.005) and HR (p = 0.015). The SERT score showed a...
Conclusions The SERT score correlates with the SMSA score and both can be used to predict RE and HR in lesions removed by ePMR. The SERT score showed a similar discriminative power for endoscopic and histologic recurrence. The SERT score is less complex and allows predicting not only endoscopic recurrence but histologic recurrence as well.

Conclusions High-risk lesions are a stronger predictor for the occurrence of interval cancer than low adenoma detection rate. In contrast to previous studies there was no association with female sex.

ePP55 TRENDS OF COLORECTAL CANCER INCIDENCE RATES IN 40–49 YEAR OLD SUBJECTS: FIGURES FROM THE NORTH-EAST ITALIAN CANCER REGISTRIES

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Aims The American Cancer Society recently lowered the age for starting colorectal cancer (CRC) screening from 50 to 45 years. The clinical rationale behind such a strategy lies in epidemiological evidence from the USA of a rising incidence of CRC before the age of 50.

In 2003, the European Council set the age to start CRC screening at 50 years, and all European screening programs (with Austria the only exception) still follow this recommendation.

In order to make available epidemiological data on the CRC risk among young Europeans, we analysed the trends of CRC incidence rates in 40–49 year olds of North-Eastern Italian Regions.

Methods We analysed the CRC incidence rates of the Cancer Registries of the North-Eastern Italian Regions (Bolzano, Friuli Venezia Giulia, Trento and Veneto; covered population = 7,200,000 subjects), from 2003 to 2014, separately for 40–44 and 45–49 year olds. We computed the Annual Percent Chance (APC), with 95% Confidence Intervals (95% CI).

Results No significant modifications have been registered in the malignant colorectal lesions incidence rates (years 2003 to 2014) among subjects younger than 50 years, the APC being 0.18 for 40–44 year olds (95% CI from -2.76 to 3.21) and APC -0.15 for 45–49 year olds (95% CI from -1.70 to 1.42).

Conclusions Our results should mean that we can rule out any need to change the CRC secondary prevention strategy with confidence. Making epidemiological data available on the temporal trends on the CRC risk among young European adults is an incoming priority.

ePP55 POST-COLONOSCOPY COMPLICATIONS WITHIN THE COLORECTAL CANCER SCREENING PROGRAMS OF THE VENETO REGION (ITALY)

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Aims To define the complication rate and the 30-days mortality rate after colonoscopy within the colorectal cancer screening programs of the Veneto Region (North East of Italy) and to identify the variables associated with complications.

Methods We considered the subjects who underwent a colonoscopy after a positive fecal immunochemical test (FIT+) from 2002 to 2014. Complications and deaths occurring within 30 days after colonoscopy were identified using the regional Hospital Discharge Records dataset. Complications were classified as follows: perforation (suspected/confirmed), hemorrhage, post-polypectomy syndrome, not otherwise specified complicated polypectomy, cardiovascular, other.

We computed complication and mortality rates and evaluated the variables associated with complications through multivariate analysis.

Results We included in the study 117,881 subjects, who underwent a colonoscopy within the regional screening program. Overall, 497 complications were recorded (complication rate 0.42%), which included 281 hemorrhages (57%), 65 perforations (13%), 27 post-polypectomy syndromes (5.4%), 59 complicated polypectomy NOS (12%) and 49 cardiovascular complications (9.9%). Seventeen subjects died within 30 days after colonoscopy, possibly due to causes related to the exam (mortality rate 1.44 × 10,000).

The risk of complications was significantly higher in case of completion colonoscopies (Odds Ratio vs. first post-FIT+ colonoscopy 1.64; p = 0.026), age (OR per 5-year increase 1.12; p = 0.005), incomplete colonoscopy (OR 2.44; p < 0.001), operative procedure (OR 1.74; p = 0.001), diagnosis of carcinoma (OR vs. negative 9.73; p < 0.001), high risk adenoma (OR 7.60; p < 0.001) and low risk adenoma (OR 3.23; p = 0.001).

Conclusions The complication and mortality rate of screening programs of the Veneto Region are comparable with the data from the literature. Hospital Discharge Records are a useful source of data for identifying post-colonoscopy complications.
**ePP58 PANCREAS DIVISUM AND RECURRENT PANCREATITIS: LONG-TERM RESULTS OF MINOR PAPILLA SPHINCTEROTOMY**

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**Methods** We conducted a retrospective study of prospectively collected data of consecutive patients treated by minor papilla endoscopic sphincterotomy (MiES) at a tertiary referral center. Clinical data, including gender, age, smoking and drinking habits, number of episodes of acute pancreatitis (AP) as well as technical data pertaining to the endoscopic therapy were reviewed. Patients available for follow-up were contacted to assess the long-term impact of the endoscopic intervention using the Patient’s Global Impression of Change (PGIC) questionnaire.

**Results** A total of 138 patients with PD including 77 patients with ARP, were treated endoscopically by MiES: 48 patients were available for long-term follow-up using the PGIC score, with a mean follow-up period of 9.7 years. Procedure-related complications developed in 10 cases (12.9%): 5 post-MiES delayed bleeding and 5 cases of mild pancreatitis. MiES was clinically successful in 35 patients (72.9%) who did not experience any more episodes of AP after the initial endoscopic treatment. Significant or very significant improvement was possible in 67% of cases. If not, a successful new drilling was achieved in 92% of cases (n = 164), mostly 7Fr. During the following ERCP, a stent exchange was possible in 67% of cases. If not, a successful new drilling was performed in most cases (83%). The complication rate was 4.5%, essentially benign pancreatitis (n = 6) and bacteremia without sepsis (n = 2).

**Conclusions** MiES resulted a safe and efficient treatment for ARP in patients with PD, with clinical benefit even at long-term follow-up.

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**ePP59 ERCP WITH DRILLING USING SOHENDRA EXTRACTOR FOR STENTING NARROW AND IMPASSABLE MAIN DUCT STRICTURES IN CHRONIC CALCIFYING PANCREATITIS: A LARGE RETROSPECTIVE STUDY**

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**Methods** This is a retrospective study conducted between 2005 and 2017 in a tertiary center. All patients having undergone a drilling of MPD with Sohendra extractor strictures between 2004 and 2018 were included. Demographical, clinical and endoscopic characteristics were recorded.

**Results** 101 patients (mean age 53.3 ± 12.8 years old, sex-ratio 2M/1F) mostly with alcoholic CP, having undergone 180 MPD drilling were included. The site of the stricture was cephalic, isthmic, corporeal-caudal or diffuses in 50%, 22%, 17% and 11% of cases, respectively. Fifty-nine patients had one single drilling (58%), other patients had 2 (21%), 3 (11%) or >4 (10%) drillings during separate ERCPs. I was performed during the first ERCP in 32% of cases. The technical success was 93% (167/180). The Sohendra extractor diameter was 7Fr in 43% and 10Fr in 57% of cases. Then, a plastic stent was placed in 97% of cases (n = 164), mostly 7Fr. During the following ERCP, a stent exchange was possible in 67% of cases. If not, a successful new drilling was performed in most cases (83%). The complication rate was 4.5%, essentially benign pancreatitis (n = 6) and bacteremia without sepsis (n = 2).

**Conclusions** MPD drilling using Sohendra extractor is a simple, inexpensive, safe and effective approach for treating difficult strictures in CP.

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**ePP60 SINGLE-OPERATOR PANCREATOSCOPY (SOP) WITH SPYGLASS SYSTEM IN PATIENTS WITH CHRONIC PANCREATITIS**

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**Methods** Interventional procedures for pain treatment in chronic pancreatitis include extracorporeal shock wave lithotripsy, endoscopic stone extraction and bridging of pancreatic strictures. Standard treatment is effective in 90% of cases. Direct pancreatoscopy using smaller-caliber endoscopic equipments have been developed to explore and treat in biliary and pancreatic duct with promising results.

To assess the usefulness, efficacy and safety of single-operator-pancreatoscopy (SOP) with the SpyGlass system in symptomatic patients with chronic calcifying pancreatitis.

**Results** We performed 20 procedures in 11 patients. From 2008 to 2015, we use legacy SpyGlass and then we use SpyGlass DS. Seven patients (63%) were male with a median age of 56 years (± 11.3). Mean time procedure in ERCP was 92 minutes (± 38.6) with 23 minutes (± 13.2) of SOP with SpyGlass. Median time of follow up was 6 months (range 1 – 55). Technical success was achieved in 18/20 (90%) procedures and clinical success in 10/11 (90%) of patients. To achieve clinical success, 5 patients needed 1 procedure, 4 patients needed 2 procedures, 1 patient needed 3 procedures and 1 patient need 4 procedures. Mean number of pancreatic stones was 2 (range 1 to +5) with mean size of 7.5 mm (± 4.85). SpyGlass with intraductal laser lithotripsy was used in 3 procedures and electrohydraulic lithotripsy in 8 procedures. This clinical series has no mortality and 1 patient needed surgery. We report 2 minor technical complications resolved in the same procedure.

**Conclusions** SOP is a useful and safe technique for treating pancreatic lithiasis with low rate of adverse effects. However, this procedure must to be performed by expert endoscopists.
SOLITARY NEEDLE TRACT SEEDING METASTASES FOLLOWING PANCREATIC CANCER RESECTIONS WITH PREVIOUS EUS-FNA

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Aims Pancreatic cancer (PDAC) seeding metastases following EUS-FNA is not frequent. However, the accurate frequency of this dissemination of PDAC is not known. A progression of the disease recurrence leading to death during the first two years following radical surgery is faster than the growth of metastases into its detectable size. In a case, that an isolated seeding metastasis develops, it becomes a serious complication involving patient’s prognosis. Reports regarding this kind of dissemination have been increasing during last few years. We present two cases of seeding metastases. One has been following left pancreatectomy. Second is an unique case of metastasis following pylorus preserving hemipancreatoduodenectomy, as there is not previously published such a case.

Methods Retrospective analysis of PDAC patients operated on with curative intent between 2010–2015 revealed two patients with previous EUS-FNA and subsequent recurrence in the stomach. Detailed histopathological analysis and comparison of primarily resected tumors and secondary resected metastases were performed.

Results Case 1: 75-yrs woman, PDAC located in head of the pancreas. CT, EUS-FNA, radical surgery were performed. Solitary lesion in pylorus of 20 mm was diagnosed by PET/CT scan 15 months following radical surgery. Pyloric resection and histopathological analysis proved identical tumor. Overall survival was 29 months.

Case 2: 71-yrs woman, PDAC located in tail of the pancreas. CT, EUS-FNA, radical surgery were performed. Solitary lesion in gastric posterior wall of 18 mm was diagnosed by PET/CT scan 23 months following radical surgery. Gastric resection and histopathological analysis proved histologically identical tumor. Actual survival is 53 months without recurrence.

Conclusions The indication of EUS-FNA should be prudent. If pre-operatively is required, the puncture channel should be removed during surgery. When tumor is located in the body or tail of pancreas, channel should be marked. If it is not possible, than should be carefully followed up its location and resected, when recurrence/seeding occurs.

EUS-FNA FOR DUODENAL HYPOECHOIC SOLId SUBEPITHELIAL LESION DIAGNOSED BY EUS

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Aims The frequency of histological types and the usefulness of EUS-FNA for duodenal subepithelial lesions (DSEL) whose EUS image shows a hypoechoic solid mass are still unknown. The aim of this study is to clarify them.

Methods From October 2004 to April 2018, 16 consecutive patients who underwent EUS-FNAs for DSEL whose EUS image showed a hypoechoic solid mass were evaluated prospectively. The reference standards for the final diagnosis were surgery (n = 12), or clinical follow-up (n = 4). We used 22G or 25G FNA needles and performed rapid on-site cytopathological examination and immunohistochemical analysis in all lesions.

Results There were 8 FNA specimens from the duodenal bulb and 8 from the descending portions. The final histopathological diagnoses (Surgery or EUS-FNA) included 9 cases of GIST (56%), 2 cases of leiomyoma (13%), and 1 case each of carcinoid (hereinafter 6% each), malignant lymphoma, cancer, leiomyosarcoma, and gauzeoma. The frequency of malignant tumors in DSEL whose EUS image showed a hypoechoic solid mass, was 81% (13/16). Puncture was not performed because of intervening vessels in one case. The diagnostic rate was 80% (12/15). In 9 surgically resected cases (excluding 3 unsuccessful EUS-FNA cases), the diagnostic accuracy of EUS-FNA was 89% (8/9). There were no complications.

Conclusions DSEL whose EUS image showing a hypoechoic solid mass is highly likely to be malignant tumor containing GIST. EUS-FNA for DSEL whose EUS image showing a hypoechoic solid mass is a safe and accurate method. It should be taken into consideration in decision making, especially in early diagnosis and early treatment for this condition.

A RARE PANCREATIC NEOPLASM WITH GIANT SCHWANNOMA: A CASE REPORT

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In 2014 a 44 years-old lady underwent transabdominal US for mild crampy abdominal pain and loose stools (eventually attributed to IBS). A 1.5 cm lesion in the uncinate process of the pancreas was detected (confirmed by CT). Then she was referred for EUS-FNA. A 13 × 11 mm hypoechoic mass was detected. FNA was performed with a 25G needle (4 passes). Cytology revealed sheets and bundles of spindle cells and immunohistochemistry led to the diagnosis of pancreatic schwannoma (negative staining for desmin, actin, DOG1 and CD117 and positive for S100) with a low proliferation index (ki67 <1%).

Schwannomas are rare mesenchymal tumors, their origin from the pancreas is exceedingly rare (only 70 cases in literature). Their diagnosis before surgery is difficult, only 17 patients underwent EUS-FNA and the diagnosis could be reached in only 9 cases. To our knowledge, follow-up has been performed to only 1 patient but the lesion grew up after a 11-month follow-up. After collegial consultation follow-up was proposed to our patient, relying to abdominal US. Four years have passed: the lesion is unchanged and the patient is asymptomatic. We think that a wait-and-see strategy may be proposed for pancreatic schwannomas, provided they are small, stable in size, with a low proliferation index, well-defined margins and without the need for excessive radiation exposure.

ENDOSCOPIC HISTOACRYL INJECTION IS SAFE AND EFFECTIVE MODALITY FOR HEMOSTASIS OF BOTH ACUTE VARICEAL AND NON-VARICEAL BLEEDING

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**Aims**

Histoacryl is one of the materials that can be used as a sclerosing agent and is known to be effective in endoscopic hemostasis of acute gastric variceal bleeding. In addition, it can be applied to hemostasis of ulcer bleeding with relatively simple manipulation and is also effective. We reviewed patients who had undergone treatment endoscopically with Histoacryl and assessed the effectiveness and side effects according to each disease.

**Methods**

We retrospectively reviewed 100 cases treated endoscopically with Histoacryl in Seoul Paik Hospital from January 2004 to October 2018. All cases were categorized by each disease. For the cases of bleeding, initial hemostasis rate and rebleeding rate within 7 days were evaluated. We reviewed the procedure records and post-procedure medical records to confirm the adverse effects.

**Results**

Among 100 cases treated with Histoacryl, 92 cases were upper GI bleedings, 8 cases were fistula. Among upper GI bleeding cases, 79 were variceal bleedings, 12 were ulcer bleedings, and 1 was post-ESD bleedings. Gastric varical bleeding accounted for the majority of variceal bleeding in 72 of 79 cases (91.1%). Among the ulcer bleeding, there were 9 cases of gastric ulcer and 3 cases of duodenal ulcer. Initial hemostasis was obtained from all bleeding cases. The delayed bleeding rate within 7 days was 9.9% of all bleeding cases, 10.0% of varical hemorrhage cases, and 9.1% of ulcer bleeding cases. No significant complication was observed, but 3 patients were expired within six months for reasons unrelated to this procedure.

**Conclusions**

According to our data, Histoacryl treatment is relatively safe and has a high success rate of hemostasis not only for variceal bleeding but also for ulcer bleeding. Therefore, it is considered to be a useful method for upper GI bleeding which is difficult to hemostasis.

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**ePP66**

**ECTOPIC VARICEAL BLEEDING TREATED WITH HEMOSPRAY AS SALVAGE THERAPY: 2 CASE STUDIES**

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**DOI**

10.1055/s-0039-1681609

**Aims**

Ectopic varices are portosystemic shunts out of the common gastro-oesophageal varices alongside the gastrointestinal tract, and although rare the rate of bleeding is 4 fold higher comparing to common varices. Likewise, treatment strategies have shown poorer outcomes than gastro-oesophageal. No cases have been reported in literature of the use of haemospray in ectopic varices.

**Methods**

We present two cases of use of hemospray as a salvage therapy and their outcomes.

**Results**

Case 1: 56 Year old female Alcoholic liver disease Child-Pugh C presented with a 4 day history of melena hypoalbumemic shock. Gastroscopy showed fresh blood in duodenum. Deeper D3 intubation showed a duodenal varix with a fibrin plug, treated with 10 ml of thrombin injection, still oozing so haemospray applied with good result. The patient rebled in less than 48 hours. TIPS was performed, with cessation of bleeding.

Case 2: 56 year old female with exact same background was admitted with increased jaundice. While admitted she had several episodes of rectal bleeding plus 4 point hemoglobin drop secondary to large rectal varices. Endoscopic thrombin injection x 5 seemed to stop the bleeding, 24 hours later another frank rectal haemorrhage observed. In new sigmoidoscopy, a persistent fibrin plug started bleeding. 19 ml thrombin applied but still minimal oozing which effectively stopped after hemospray.

Patient hb improved to baseline, however continued to drink and had further episode of bleeding in 3 months, resolved after TIPS insertion.

**Conclusions**

In the 2 cases described, the salvage use of haemospray as a combined method was effective to provide immediate hemostasis but did not contribute to achieve a definitive treatment as the underlying cause was still untreated.

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**Friday, April 5, 2019**

**Quality 3**

**13:30 – 14:00**

**ePoster Podium 7**

**ePP67**

**REVISITING REPORTING OF PERFORMANCE MEASURES FOR LOWER GASTROINTESTINAL ENDOSCOPY FROM A TERTIARY REFERRAL CENTER FROM ROMANIA: STILL A LONG WAY TO GO...**

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10.1055/s-0039-1681610

**Aims**

Standardized reporting and quality benchmarking for colonoscopy are essential marks of a high-quality Endoscopic unit. We previously reported suboptimal key performance measures in colonoscopy practices in a single tertiary referral center. This is a reassessment of the key performance measures 6 months after announcing the results of the former audit to the colonoscopists in the unit.

**Methods**

This is a single-center retrospective analysis of colonoscopy performance in a tertiary-referral center. All colonoscopy reports from a 3-month period were analyzed for this study, in identical fashion to the previous audit. Standard ESGE guideline recommendations for performance measures in lower GI endoscopy were used for the following key measures: indication (≥85%), quality of bowel preparation (≥90%), caecal intubation rate (≥90%), adenoma (≥25%) and polyp detection rate (≥40%).

**Results**

During a 3-month period (1.03 – 31.05.2018) 278 colonoscopies were performed in our unit. Since the previous audit there was a noticeable improvement in the reported indication for colonoscopy which was adequate in 91.2% compared to 78.7% of cases in the initial audit. However, there was no improvement in the rate of adequate bowel preparation (63.8% vs. 64.5%) or caecal intubation rate (71.3% vs. 74.7%). The adenoma detection rate and the polyp detection rate for the service remained consistent and were 27% (vs 27.3%) and 49% (vs 51.7%).

**Conclusions**

Some suboptimal key performance measures persisted after reporting the results of the previous audit. Further retraining and proper reporting of outcomes are mandatory for improvement of key performance measures and achieving recommended quality standards in lower GI endoscopy.

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**ePP68**

**ANALYSIS OF THE QUALITY OF COLONOSCOPY REPORTS OVER A YEAR AS PART OF THE COLORECTAL CANCER SCREENING PROGRAM IN THE FRENCH DEPARTMENT OF FINISTERE**

**Authors**

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**DOI**

10.1055/s-0039-1681611

**Aims**

To carry out a qualitative analysis of the colonoscopy reports (CR) established in individuals examined for a positive FIT in Finistere during year 2016. This study was based on the ESGE quality indicators for colonoscopy.

**Methods**

All CR sent to the structure in charge of the screening program have been reviewed. Fifteen indicators were analyzed.

**Results**

1401 reports were analysed: 1135 colonoscopies were performed in private practice and 266 in public hospitals. The indication for colonoscopy was mentioned in 99.6% of CR; 14.6% of CR did not contain data related to sedation or anesthesia. Data relative to the bowel preparation were present in 90.6% of CR; the Boston classification was used in 35.0% of cases. The most
proximal colonic segment reached was mentioned in 99.0% of cases; 95.0% of colonoscopies were complete. 947 CR described at least one colonic lesion. The number and location of lesions was mentioned in 98.9% and 95.3% of cases. The estimated size of the lesions was present in 84.3% of CR. A macroscopic description of the lesions was provided in 76.4% of CR; the Paris and Kudo classifications were used in only 7.4% and 1.2% of cases respectively. The modalities of polyp removal were described in 84.8% of cases. No report mentioned complications during colonoscopy. Recommendations for further colonoscopic surveillance were mentioned in 36.4% of CR. 64.2% of the CR met at least 4 of the 5 major quality indicators to be included in the report (Adenoma detection rate and patient’s experience were noted in assessed in individual CR).

**Conclusions** One third of the CR performed as part of a colorectal screening campaign do not meet the required quality criteria and can be improved. The implementation of a standardized report software would improve quality and allow quality indicators extraction.

### ePP69 COMPARISONS OF COLONOSCOPY QUALITY INDICATORS FOR THE PREDICTION OF ADENOMA MISS RATE

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**DOI** 10.1055/s-0039-1681612

**Aims** Adenoma detection rate (ADR) is most widely used as an indicator of quality for colonoscopy. However, high ADR alone do not guarantee the complete removal of adenomas due to limitation of definition of ADR. Therefore, other optimal indicator is needed to better reflect the quality of colonoscopist. In our study, we analyzed the association of several quality indicators such as the total adenomas per colonoscopy (APC), adenoma per positive participants (APP) and ADR-plus with adenoma missed rate (AMR).

**Methods** Patients who underwent more than two total colonoscopy for screening, surveillance within 3 years in Korea University Ansan Hospital between January 2011 and February 2016 were included. AMR and AMR more than 5 mm miss rate (AMR> 5 mm) were calculated from 9 endoscopists who performed total colonoscopy more than 50 times as a first colonoscopist. ADR, APP and ADR plus were calculated from patients with age over 40 years.

**Results** A total of 716 patients aged ≥40 years were analyzed retrospectively. Mean age was 58.9 years and male was 450 (62.8%). And mean time interval between colonoscopy exams was 21.6 months. There were no significant differences in age, sex, bowel preparation quality and mean time interval between colonoscopic exams among nine endoscopists. AMR was 0.36, 0.38, 0.45, 0.28, 0.43, 0.35, 0.28, 0.24 and 0.37. AMR> 5 mm was 0.35, 0.23, 0.24, 0.22, 0.29, 0.35, 0.18, 0.20 and 0.35, respectively. AMR was not significantly correlated with all quality indicators. Whereas APC had a significant inverse correlation with AMR> 5 mm (r = -0.729, p = 0.026), the other indicators were not significantly correlated with AMR> 5 mm (r for ADR = -0.221, p = 0.567; r for ADR plus = -0.661, p = 0.053, r for APP = -0.638, p = 0.064).

**Conclusions** APC had the significant negative association with AMR> 5 mm. APC might be a better quality indicator for meticulous colonoscopist.
narrow band imaging (HR-NBI) after the use of white light (WL). Biopsies were taken where the endoscopists recognized intestinal metaplasia (targeted biopsies) or using Sydney System if intestinal metaplasia was not recognized.

**Results** Overall, 101 patients were included (62% F; 55 (19–80) years). Chronic atrophic gastritis was present in 42% of patients. Endofaster showed an accuracy for atrophic gastritis of 87.2% and a sensitivity, specificity, PPV and NPV of 77.8%, 96.4%, 94.6% and 84.4%, respectively, for the diagnosis of hypochloridria. NBI had an accuracy of 90.7% for the diagnosis of intestinal metaplasia. Endofaster allowed to correctly diagnose atrophic gastritis in 3.0% of patients negative to NBI (atrophic gastritis without intestinal metaplasia). Endofaster seemed a promising tool to correctly diagnose chronic atrophic gastritis. The high PPV suggests performing biopsies only in patients with a real need of doing biopsies. Endoscopy centers where the use of NBI is not available or where NBI does not evidentiate intestinal metaplasia, the use of Endofaster should be considered.

**ePP72 RELIABILITY AND ACCURACY OF BLUE LIGHT IMAGING FOR STAGING OF INTESTINAL METAPLASIA IN STOMACH (BLIMPS)**

**Authors** Castro R1, Libânio D1, Santos C2,3, Afonso LP4, Pimentel-Nunes p1,2, Dinis-Ribeiro M1,2,3

**Institute** 1 Gastroenterology, Portuguese Institute of Oncology, Porto, Portugal; 2 MEDICIDS, Faculty of Medicine, University of Porto, Porto, Portugal; 3 CINTESIS, Faculty of Medicine, University of Porto, Porto, Portugal; 4 Pathology, Portuguese Institute of Oncology, Porto, Portugal; 5 Department of Surgery and Physiology, Faculty of Medicine, University of Porto, Porto, Portugal

**Aims** A grading endoscopic system using high-resolution scopes with NBI has been shown to accurately identify patients with extensive GIM (EGGIM) that need surveillance. However, no description is available with alternative systems such as the new system of Fujifilm, BLI. We aim to determine the reliability and accuracy of BLI regarding the diagnosis and staging of GIM.

**Methods** A consecutive series of patients (n = 29), previously assessed by NBI, with a full spectrum of gastric changes (OLGIM 0-IV) were submitted to gastroscopies using FujifilmEG-7602HD/ELUXEO-VP7000 and endoscopists (blinded to the stage histologic status) were asked to determine EGGIM score on real-time using BLI-bright mode (e.g., 0–2 for the lesser curvature of antrum and corpus, greater curvature of antrum and corpus and incisura, total 0–10). Reliability with BLI using the previous classification by Pimentel-Nunes P et al. among 3 observers was determined with WLE, LCI and BLI (n = 32 per site images). Secondly, accuracy was determined by comparing with previously EGGIM cut-off IV with NBI and current OLGIM status.

**Results** The overall interobserver reliability for histologic presumption based on endoscopic images with BLI (wk 0.80[95% CI:0.64–0.93]) and LCI (wk 0.76[95% CI:0.53–0.90]) was substantially better than WLE (wk 0.43[95% CI:0.20–0.66]). The proportion of certainty varied between 50 to 62% for WLE, 59 to 81% for LCI, 78 to 91% for BLI. Accuracy is reported in table 1.

**Tab. 1 Accuracy (n = 29)**

<table>
<thead>
<tr>
<th>EGGIM using BLI Bright</th>
<th>EGGIM using NBI</th>
<th>OLGIM (n = 27)</th>
</tr>
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<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0–4</td>
<td>12 (82%)</td>
<td>16 (84%)</td>
</tr>
<tr>
<td>5–10</td>
<td>1</td>
<td>12 (75%)</td>
</tr>
<tr>
<td>&gt;90% agreement</td>
<td>AUC 0.92 (CI 0.82–1.00)</td>
<td></td>
</tr>
</tbody>
</table>

**Conclusions** BLI is reliable in determining the presence of GIM. BLI-bright seems to agree significantly with NBI evaluation (90% agreement) and preliminary data suggests very high sensitivity for identifying those at risk (OLGIM III/IV). External multicentre assessment is required for further validation.

**ePP73 HIGH-QUALITY COLON CLEANSING IMPROVES SEGMENTAL POLYP AND ADENOMA DETECTION RATES: POST HOC ANALYSIS OF RANDOMISED CLINICAL TRIALS USING THE BOSTON BOWEL PREPARATION SCALE**

**Authors** Hassan C1, Halonen J2, Manning J2

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**Aims** Successful colon cleansing is defined as a segmental score of 2 or higher on the Boston Bowel Preparation Scale (BBPS). The additional clinical value of high-quality cleansing (BBPS 3) is subject for debate. This post hoc analysis of three randomised phase 3 clinical trials assessed the segmental lesion detection rates in the right colon at variable BBPS scores.

**Methods** Three similarly designed phase 3 trials assessed the efficacy and safety of 1L NER1006 versus standard bowel preparations. Polyps and adenomas were detected by site endoscopists as per local practice while cleansing assessment was standardised with treatment-blinded central readers using the validated BBPS. This pooled analysis assessed the right colon polyp (PDR) and adenoma (ADR) detection rates versus attained right colon cleansing quality, 1-sided t-tests assuming unequal variance compared the relative lesion detection rates versus the high-quality score BBPS 3.

**Results** A total of 1749 patients were included: BBPS 3 (n = 284), BBPS 2 (n = 1192), BBPS 1 (n = 210) and BBPS 0 (n = 63). BBPS 3 in the right colon was associated with a significantly higher PDR than BBPS 2 (23.6% vs. 17.2%; P = 0.010), BBPS 1 (23.6% vs. 15.2%; P = 0.009) and BBPS 0 (23.6% vs. 4.8%; P = 0.001). BBPS 3 in the right colon was also associated with a significantly higher ADR than BBPS 2 (14.8% vs. 10.9%; P = 0.004) and BBPS 0 (14.8% vs. 4.8%; P = 0.002). BBPS 1 had a numerically smaller ADR than BBPS 3 and BBPS 2.

**Conclusions** With a strictly assessed cleansing quality using the BBPS, higher PDR and ADR were obtained with high-quality versus adequate only right colon cleansing. As expected, high-quality right colon cleansing also enabled significantly greater PDR and ADR than failed cleansing. These findings encourage endoscopists to prioritise cleansing efficacy when selecting bowel preparations for their patients.

**ePP74 THE INDEX EVALUATING INDIVIDUALS’ INDEPENDENCY IN ACTIVITIES OF DAILY LIVING DOES NOT SATISFACORILY PREDICT INADEQUATE BOWEL PREPARATION IN INPATIENTS UNDERGOING COLONOSCOPY**

**Authors** Triantafyllou K1, Gkolfinakis P2, Skammelos A2, Diamantopoulou G3, Dagas A6, Tsatsilos C1, Thomopoulos K8, Potamianos S3, Christodoulou D2

**Institute** 1 Hepatogastroenterology Unit, Second Department of Internal Medicine – Propaedeutic, Research Institute and Diabetes Center, Medical School, National and Kapodistrian University of Athens, “Attikon” University General Hospital, Athens, Greece; 2 Division of Gastroenterology, University Hospital & Faculty of Medicine, School of Health Sciences, University of Ioannina, Ioannina, Greece; 3 Division of Gastroenterology, Department of Internal Medicine, University Hospital of Patras, Patras, Greece; 4 Department of Gastroenterology, Faculty of Medicine, School of Health Sciences, University of Thessaly, Larissa, Greece

**Aims** Katz index* assesses independency of a person in performing activities of daily living (bathing, dressing, toileting, transferring, continence, feeding).
We evaluated the use of Katz index for the prediction of inadequate bowel preparation among inpatients undergoing colonoscopy.

Methods Post-hoc analysis of the data from a cohort inpatients undergoing colonoscopy in 4 tertiary Greek centers. To calculate Katz index each of the aforementioned domains scores 1 point if perform the respective activity independantly (range 0 – 6; higher value indicates higher independancy level). We used the Area Under the Curve (AUROC) to determine Katz index discriminative ability to predict inadequate bowel prep.

Results Out of 261 patients (100 bedridden, 140 men, 70.7 ± 15.4 years old) 89 (34.1%) had inadequate bowel preparation (BBPS< 6). Katz index was higher among ambulatory compared to bedridden patients (p <0.0001), but it did not differ between individuals with adequate and inadequate bowel preparation (p = 0.08). Katz index showed a low discriminative ability to predict in-patients with inadequate bowel preparation not only in the entire cohort [AUROC (95% CI)= 0.44 (0.36 – 0.52), p = 0.11 but also in the groups of am- bulatory and bedridden patients [AUROC (95% CI)= 0.50 (0.39 – 0.60), p = 0.9 and 0.55 (0.43 – 0.67), p = 0.4 respectively].

Conclusions Katz index failed to predict satisfactorily inpatients (either ambulatory or bedridden) with inadequate bowel preparation before colonoscopy.


**ePP75**

**HIGH-QUALITY COLON CLEANSING IMPROVES REAL-WORLD IDENTIFICATION OF HIGH-RISK PATIENTS: POST HOC ANALYSIS OF RANDOMISED CLINICAL TRIALS USING TWO VALIDATED CLEANSING SCALES**

Authors Manning J1, Amlani B2, Hassan C3, Ponchon T4

Institute 1 Borders General Hospital, Berwickshire, United Kingdom; 2 Medical Affairs, Norgine, Harefield, United Kingdom; 3 Gastroenterology and Endoscopic Unit, Ospedale Nuovo Regina Margherita, Rome, Italy; 4 Gastroenterology and Endoscopy, Edouard Herriot Hospital, Lyon, France


Aims Clinical guidelines classify colonoscopy patients with three or more detected adenomas as being at high risk for advanced neoplasia. These patients have a recommended follow-up after 3 years. Our post hoc analysis of three phase 3 randomised clinical trials assessed whether increased colon cleansing quality could improve the real-world identification of high-risk patients.

Methods Three similarly designed phase 3 trials assessed the efficacy and safety of 1L NER1006 (PLENVU) versus standard bowel preparations. Polyps were detected by site endoscopists as per local practice. Cleansing quality was assessed by treatment-blinded central readers using the validated Harefield Cleansing Scale (HCS) and Boston Bowel Preparation Scale (BBPS). This pooled analysis assessed the identification of high-risk patients with three or more adenomas versus attained colon cleansing quality.

Results At total of 1749 patients were included (Table). Three or more adenomas/patient were observed more frequently when the overall cleansing quality increased from failure to high-quality (HCS grade A vs. C: 8.7% vs. 3.9%; P = 0.022, and BBPS overall score 7 – 9 vs. 0 – 5: 8.6% vs. 4.6%; P = 0.013). When the cleansing quality improved from adequate to high, a numerical trend towards increased detection was observed with both scales, and statistical significance was established with BBPS 7 – 9 vs. 6 at 8.6% vs. 5.6%; P<0.001.

Conclusions With high-versus adequate only colon cleansing quality, more patients were identified as being at high-risk for advanced neoplasia. This trend was numerically consistent across both HCS and BBPS, but reached statistical significance only with the more balanced samples size in the BBPS analysis.

**Tab. 1 Overall colon cleansing quality versus detection of high-risk patients with three or more adenomas per patient**

<table>
<thead>
<tr>
<th>Overall colon cleansing quality</th>
<th>High-quality</th>
<th>Adequate/SUCCESSFUL</th>
<th>Failure</th>
</tr>
</thead>
<tbody>
<tr>
<td>BBPS overall score</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High-risk patients, n/N (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BBPS overall score</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P-value vs. High-quality</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HCS Grade</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A (N = 242)</td>
<td>21/242 (8.7)</td>
<td>8/203 (3.9)</td>
<td>D (N = 75)</td>
</tr>
<tr>
<td>B (N = 1229)</td>
<td>75/1229 (6.0)</td>
<td>6/75 (8.0)</td>
<td></td>
</tr>
<tr>
<td>C (N = 203)</td>
<td>0.062</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P = 0.022</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P = 0.427</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Conclusion**

With high-versus adequate only colon cleansing quality, more patients were identified as being at high-risk for advanced neoplasia. This trend was numerically consistent across both HCS and BBPS, but reached statistical significance only with the more balanced samples size in the BBPS analysis.

**ePP76**

**DEVELOPMENT OF A MODIFIED SMSA SCORING SYSTEM WITH IMPROVED ACCURACY IN THE PREDICTION OF COMPLICATIONS OF ENDOCOPIC MUCOSAL RESECTION IN THE COLON**

Authors Silva JC1, Rodrigues J1, Pinho R2, Sousa M1, Gomes AC1, Silva AP1, Carvalho J1

Institute 1 Gastroenterology, Centro Hospitalar de Vila Nova de Gaia e Espinho, Vila Nova de Gaia, Portugal


Aims The SMSA (size, morphology, site, access) scoring system allows stratification of the complexity of endoscopic mucosal resections (EMR). However, the influence of other lesion characteristics in EMR outcomes is widely recognized.

The aim of this study was to develop a modified SMSA scoring system with complementary lesion characteristics and determine its accuracy in the prediction of complications of EMR.

Methods Consecutive colorectal, non-pedunculated lesions, ≥20 mm, referred to EMR between 2015 – 2016 were included. Lesions with previous resection attempts were excluded. The relation between SMSA and total complication rate (intra-procedure and post-EMR bleeding, intestinal perforation and post-polypectomy syndrome) was evaluated. Additional predictive characteristics of complications were determined and their incorporation into the SMSA evaluated.

Results 225 lesions were selected, mean size 29.5 ± 13.0 mm, most of type 0-llla (37.3%) or 0-llb (28.0%) Paris Classification, with granular surface (72.9%). Technical success of EMR was 94.2% (n = 212), with piecemeal (68.9%) or enbloc (31.1%) resection, and was related to the SMSA (p <0.001). Total complication rate was 22.6%; intra-procedure bleeding = 15.1%; post-EMR bleeding = 6.1%; intestinal perforation = 0.9%; post-polypectomy syndrome = 0.9%.

The area under the ROC curve of the SMSA for prediction of complications (EMR) was 0.70 (95% CI 0.61 – 0.79, p < 0.001). On multivariate analysis, lesion component 0-IIb/0-IIc (OR = 2.4, 95% CI 1.1 – 6.5, p = 0.041) and non-granular/mixed surface type (OR = 2.6, 95% CI 1.2 – 5.9, p = 0.020) were associated with complications independently of the SMSA. The incorporation of the two characteristics into the SMSA (component 0-IIb/0-IIc = 2 points, non-granular/mixed surface = 3 points) had a significantly increased association with the total complication rate (area under the ROC curve = 0.79), by a difference of 0.087; p = 0.032 (DeLong et al. method).
ePP77  LONG-TERM OUTCOMES OF PATIENTS WITH INDETERMINATE OR POSITIVE LATERAL MARGIN AFTER ENDOSCOPIC RESECTION AND RELATED FACTORS WITH RECURRENCE IN LARGE, SESSILE OR FLAT COLORECTAL POLYPS

Authors  Kim HW1, Park SB1, Kang DH2, Choi CW2, Cho SJ1, Nam HS1, Bonnington SN1, Sharp L1, Rutter MD1,2 Papastergiou V1, Fragkaki M2, Velegraki M2, Mpitouli A2, Vardas E2, Sies obtained from the margins/1 from the base) and the occurrence of presence of residual serrated neoplasia in post-polypectomy biopsies (4 biops
cranium, Thyroid, and Speech, Toronto, Canada; 2 University of Alberta, Edmonton, Canada; 3 Sunnybrook Health Sciences Centre, University of Toronto, Canada

Results  A total of 38 patients (63.2% females, mean 55.3 ± 9.9 years) with 40 pathologically confirmed SSFs were enrolled. The mean size was 13.7 ± 3.9 mm; 34 (80%) SSFs were ≥ 10 mm, 24 (60%) SSFs were ≥ 15 mm and 31 (77.5%) were proximal to the transverse colon. Cytological dysplasia was present in 6 (15%). A total of 22 (55%) lesions (mean size 10.8 ± 2.9) were resected en bloc. In lesions resected piecemeal, the median number of resected pieces per case was 2 (range: 2 – 3). Marginal biopsies were positive in 2 (5%) lesions; all base biopsies were negative. Intraprocedural bleeding (> 60 minutes) requiring haemostatic clip application occurred in 1 (2.5%) case. No delayed bleeding or perforation occurred within 2 weeks of follow-up.

Conclusions  e-EMR is effective and safe technique for the removal of SSFs sized 8 – 20 mm.

Friday, April 5, 2019  14:00 – 14:30

CRC screening 3  ePoster Podium 3

ePP79  POST-POLYPECTOMY SURVEILLANCE IN THE ENGLISH BOWEL CANCER SCREENING PROGRAMME: MULTIVARIATE LOGISTIC REGRESSION OF FACTORS INFLUENCING ADVANCED ADENOMA DETECTION AT FIRST SURVEILLANCE

Authors  Bonnington SN1, Sharp L1, Rutter MD1,2

Institute 1 Newcastle University, Newcastle upon Tyne, United Kingdom; 2 University Hospital of North Tees, Stockton on Tees, United Kingdom


Aims  The English Bowel Cancer Screening Programme (BCSP) offers individuals aged 60 to 74 years guaiac FOB testing, with an invitation for colonscopy if positive. Post-polypectomy surveillance is performed by quality-accredited colonoscopy within the BCSP for individuals within the screening age range.

Methods  Details were extracted from the BSCP database for 41519 individuals who attended surveillance (in the intermediate or high risk category) from the start of the BCSP in 2006 until January 2017. Data were analysed using Stata 14. Multivariate logistic regression was performed for the outcome of advanced adenoma (AA) at first surveillance, defined as size ≥ 10 mm, ≥ 25% villous architecture, or high-grade dysplasia (HGD). Considered in the analysis were person factors: gender, age, smoking status, alcohol intake, BMI, co-morbidity; and procedure factors: quality of examination, number of adenomas, size of largest adenoma, villous architecture, HGD, proximal location, piecemeal resection, and surveillance interval.

Results  The multivariate odds ratio (OR) for baseline factors found to have statistical significance are presented below.

Male gender; OR 1.13 (p=0.001.)
Suboptimal examination; OR 1.46 (p=0.000).

Total number of adenomas (multiplicity): 1 OR 1
2 OR 1.56 (p=0.000)
3 OR 1.58 (p=0.000)
4 OR 1.90 (p=0.000)
5 OR 2.24 (p=0.000)
6 – 9 OR 2.47 (p=0.000)
≥ 10 OR 3.03 (p=0.000)

Maximum villous architecture:
TA OR 1
TVA OR 1.37 (p=0.000)
VA OR 1.70 (p=0.000)
Non-pedunculated adenoma ≥ 10 mm; OR 1.38 (p=0.000)
Current smoker; OR 1.16 (p=0.001)
Alcohol intake ≥ 15 units/week; OR 1.09 (p=0.010)
ASA grade:<
1 OR 1

Endoscopy 2019; 51: S1–S273

S153
2 OR 1.09 (p0.019)
3 – 5 OR 1.33 (p0.000)
(*Suboptimal defined as either poor bowel prep and/or incomplete to caecum.
# American Society of Anaesthesiologists grade).

Conclusions The only factor with an OR > 2 was adenoma multiplicity at baseline. These findings will help inform future surveillance algorithms.

ePP80 A SYNTHETIC PREDICTOR OF THE IMPACT OF COLORECTAL CANCER SCREENING PROGRAMMES ON INCIDENCE RATES

Authors Hassan C1, Zorzi M2
Institute 1 ONRM Hospital, Rome, Italy; 2 Veneto Tumour Registry, Azienda Zero, Padua, Italy

Aims Diagnosis and the removal of pre-cancerous lesions within colorectal cancer (CRC) screening programmes based on the faecal immunochemical test (FIT) reduces CRC incidence rates.

The impact of a screening programme on CRC incidence depends on a large number of variables, including the actual extension of invitations, participation rate, positivity rate of the screening test, compliance with invitation to second level assessment, endoscopist accuracy.

We propose a synthetic indicator that accounts for all the variables influencing the impact of a screening programme on incidence rates.

Methods We developed the “rate of Advanced Adenoma on the Target Population” (AA-TAP) as the rate of patients who received a diagnosis of advanced adenoma within a screening programme divided by the programme target population.

We computed the AA-TAP for the CRC Italian screening programmes using the data of the Italian National Survey from 2009 to 2016, overall and by Region.

Results In 2016, the actual extension of CRC screening programmes in Italy (i.e. the proportion of subjects of the annual target population who were regularly invited) was 76%, and the participation rate was 41%. Positivity rate was 5.4% at first FIT and 4.5% at subsequent FITs; compliance rate with colonoscopy was 82%. The detection rate for advanced adenoma was 8.1% at first and 6.2% at subsequent round.

The AA-TAP at a national level was 105 × 100,000, while significant differences were observed between the Northern and Central Regions (respectively 141 and 150 × 100,000) and the South and Islands (29 × 100,000).

The AA-TAP at a national level was stable on values slightly higher than 100 × 100,000 from 2010 to 2016.

Conclusions The AA-TAP summarises into a single indicator the potential impact of a screening programme in reducing CRC incidence rates. It may be useful when comparing different programmes, particularly if they have different screening protocols.

ePP81 UP TO WHAT AGE PROPOSE MASS SCREENING FOR COLORECTAL CANCER BY FAECCAL OCCULT BLOOD TEST? ANALYSIS OF A COHORT IN A WELL-DEFINED POPULATION

Authors Tardieu E1,2, Manfredi S2,3, Cottet V4, Faivre J4
Institute 1 ADEMAS, Macon, France; 2 INSERM U1231, Université De Bourgogne Franche Comté, Dijon, France; 3 Gastroenterology and Oncology, University Hospital Dijon, Dijon, France; 4 INSERM U 1231, Université De Bourgogne Franche Comté, Dijon, France

Aims The question of continuing screening beyond 75 years is often asked. Our cohort is the only one concerned with a population screened after 75 years, allowing the determination of participation rate, the rate of positivity of the test and the effect of screening on CRC mortality and incidence.

Methods Our cohort, established in 1988 is composed of 4268 elderly people, aged 70 – 74 residing in a well-defined French area. A faecal occult blood test (Hémoccult) was proposed until 2002, and then a follow-up until 2009. In our population the invitation was continued to 82 – 86 years. The population studied is covered by the Burgundian register of Digestive cancers collecting data in the whole area population, screened and not screened.

The ratio of the number of observed deaths or incident cases and the number of expected deaths or incident cases determine the ratio of mortality (SMR) and incidence (SIR).

Results Participation rates remained higher than 40% during the 3 first campaigns and decreased less than 40% in the following 4. The participation rate decreases with the age, it remains above 40% up to 78 years and above 30% up to 80 years. The positivity rates of the test ranged from 1.7% to 3.0%. The incidence of cancers was in 1998 (during the screening campaign) of 2.3% for the screened population and 3.3% for the non-screened (P = 0.06); it was in 2009 (7 years after the last campaign of 3.3% and 4.8% respectively (P = 0.014). The stages of cancer were significantly less advanced in the screened population, than in the non-screened. This difference did not vary according to the number of participation per individual. SMR and SIR didn’t differ significantly between participants and non-participants.

Conclusions The CRC mass-screening efficiency indicators remain good over 75 years and supports the extension to 78 – 80 years for mass screening.

Friday, April 5, 2019 14:00 – 14:30
ERCP stenosis ePoster Podium 4

ePP82 ENDOSCOPIC RADIOFREQUENCY ABLATION FOR EXTRAHEPATIC MALIGNANT BILARY OBSTRUCTION: SAFETY AND EFFICACY OF A SINGLE CENTER EXPERIENCE

Authors de Nucci C1, Domenico Mandelli E1, Redaelli D1, Reati R1, Morganti D2, Manes G1
Institute 1 Gastroenterology and Endoscopy Unit, ASST Rhodense, Garbagnate Milanese-Milano, Italy

Aims Malignant biliary obstruction is often secondary to pancreatic cancer or cholangiocarcinoma. Most of patients present at advanced stage with a short life expectancy and no chance of curative therapy. patients with inavescence icterus, endoscopic drainage is performed with position of metal or plastic biliary stents. Radiofrequency ablation (RFA) have already been studied to improve stent patency and to treat liver lesions percutaneous via. The aim of our study is to assess efficacy and safety of RFA ablation in patients unfit for surgery with malignant biliary obstruction due to extrahepatic cholangiocarcinoma.

Methods We enrolled 6 pts (mean age 71 years, 5 male) from October 2014 to June 2016 affected with extrahepatic colangiocarcinoma with or without chemothermy and unfit for surgery. All the patients underwent biliary sphincterotomy and a colangiogramm to confirm stricture location, length and diameter. The Habib Endo HPB probe was advanced over a wire and the stricture was ablated using an ERBE generator. A fully covered/plastic stent was placed after each RFA session to prevent stenosis.

Results The mean treated stricture length was 22,5 mm with a mean number of procedures of 3. Technical success was achieved in 100% with preferably metal fully covered stent placement in each patients after the ablation. No early adverse event was recorded: one colecstisit after 30 days in one patient after the third ablation, managed with medical therapy. Moreover the overall survival curve was compared with the SEER database registry stratified by diagnosis and stage demonstrated a significantly improved survival in patients who have received RFA.

Conclusions Even if in a retrospective manner, with a small number of patients and in absence of a comparison population, our study suggests that RFA...
may offer a safe, effective alternative therapy to patients with malignant biliary extra hepatic obstruction possibly, unfit for surgery, conferring a survival benefit.

ePP83V  ENDOSCOPIC PALLIATION OF HILAR CHOLANGIOCARCINOMA – USEFULNESS OF SELECTIVE OCCLUSION OF ONE INTRAHEPATIC DUCT

Authors  Fernandes J¹,², Moreira M¹, Araújo T¹, Ribeiro H¹, Giestas S¹, Lucas F¹, Lúbánio D¹,², Ramada J¹, Martínez-Ares D¹, Certo M⁶, Canena J⁶,⁷, Lopes J¹,³,⁴,⁹

Institute  1 Gastroenterology, Hospital de Santa Luzia, Viana do Castelo, Portugal; 2 Gastroenterology, Centro Hospitalar Cova da Beira, Covilhã, Portugal; 3 Serviço de Medicina do Hospital de Cascais, Cascais, Portugal; 4 Gastroenterology, Instituto Português de Oncologia do Porto, Porto, Portugal; 5 Hospital de Braga, Braga, Portugal; 6 Gastroenterology, Hospital Amadora Sinta, Amadora, Portugal; 7 Gastroenterology, Nova Medical School/FCML da UNL, Lisbon, Portugal; 8 Life and Health Sciences Research Institute (ICVS), School of Medicine, University of Minho, Braga, Portugal; 9 ICVS/3B – PT Government Associate Laboratory, Braga/Guimarães, Portugal


Description  ERCP with stent placement for palliative biliary drainage is a common strategy used in the management of patients with unresectable hilar cholangiocarcinomas (HC). Selective placement of two guidewires, one in the right intrahepatic duct (RIHD) and the other in the left hepatic duct (LHD) is an essential pre-requisite for bilateral stenting. However, the insertion of the second guidewire to the contralateral intrahepatic duct can be extremely difficult in some patients, even after using multiple maneuvers, using different types of catheters and guidewires.

In this video, we demonstrate a technique to overcome the inability to direct the second guidewire to the contralateral intrahepatic duct. We describe an 85-year old man, with a type II HC, referred to our department for palliative bilateral stenting. After swiftly passing the first guidewire to the right lobe, we faced unexpected difficulties in directing the second guidewire to the dilated LHD. Several maneuvers were attempted, including the use of angled-tip and small caliber hydrophilic wires, but all resulted invariably in cannulation of the right system. In order to overcome this difficulty, we introduced a 15-mm retrieval balloon into the dilated RH D; the balloon was inflated immediately proximal to the hepatic bifurcation, blocking the access to the RIHD. Subsequently, a second guidewire was inserted alongside the balloon catheter, across the hilar stricture and easily deflected off the inflated balloon into the LHD. Two self-expandable metal stents were successfully deployed.

Motivation  To the best of our knowledge there are no multimedia reports on this technical tip to facilitate the passage of a second guidewire to the opposite intrahepatic duct, which was first reported by Husain et al. Use of this technical maneuver could be a very useful tool for increasing the success of bilateral stenting in patients with hilar cholangiocarcinoma.

ePP84  FEASIBILITY OF NEW BILIARY AND PANCREATIC BIODEGRADABLE STENT PLACEMENT: INTERIM ANALYSIS OF AN ONGOING SINGLE-CENTER, PROSPECTIVE, PILOT STUDY

Authors  Anderloni A¹, Fugazza A¹, Maroni L¹, Maselli R¹, Ormando V¹, D’Amico F¹, Carrara S¹, Mangiavillano B², Omodei PD¹, Pretoni P¹, Lamonaca L¹, Cappello A¹, Pellegatta G¹, Repici A¹

Institute  1 Humanitas Clinical and Research Center, Rozzano (MI), Italy; 2 Digestive Endoscopy Unit, Humanitas – Mater Domini Hospital, Castellanza, Varese, Italy


Aims  New biliary and pancreatic biodegradable stents (BS) have been developed for endoscopic use. Stents are provided in different sizes and polymeric mixtures allowing 3 expected rates of biodegradation: slow (11 weeks), medium (20 days) and fast (12 days). Aim of the study was to evaluate biodegradation time, safety, technical success of implantation of newly available BS.

Methods  Interim analysis of ongoing single-center, prospective, pilot study. Patients with indication to biliary or pancreatic plastic stent positioning during ERCP were prospectively enrolled. The primary outcome was the evaluation of biodegradation time, which was controlled by abdominal x-ray (2/4 weeks for fast BS; 3/6 weeks for medium BS; 3/6 months for slow BS). Secondary outcomes were adverse events (AEs) rate according to ASGE lexicon and evaluation of specific stent-related technical features which were arbitrary scored as compared to commonly used plastic stents.

Results  22 patients (5, 28% female; median age 71,7 years) were enrolled in study (32 BS). Stents were successfully placed in all patients. Stent loadability and pushability were considered good in all cases. Fluoroscopic visualization was good in 85% and medium in 15% of the patients. Evaluation of biodegradation time was available for all fast pancreatic BS and showed partial degradation after 2 weeks and complete degradation after 4 weeks in 4/5 patients, with early migration in one patient. In the remaining treated patients only 6 (2 with medium and 4 with slow BS) showed complete disappearance of the stent at the expected time. No AEs or additional treatments occurred during follow-up period. Only 1 post-ERCP pancreatitis (PEP) was observed in a patient subjected to pancreatic stent placement for PEP prevention after difficult biliary cannulation.

Conclusions  The results of the interim analysis suggest that BS were feasible, with good fluoroscopic visualization and a favorable profile of safety. Available data of evaluation of biodegradation time suggest that stents survival is in line with expected times.

Friday, April 5, 2019

EUS therapeutic bile  14:00 – 14:30

ePP85  PAPILLA CANNULATION USING HOME-MADE MONORAIL SPHINCTEROME AFTER EUS-GUIDED RENDEZVOUS TECHNIQUE

Authors  Bozyzychko M¹, Mangas-Sanjuan C¹, Company L¹, Ruiz FA¹, Martínez Sempere J¹, Casellas JA¹, Ramón Aparicio J¹

Institute  1 Unidad Endoscopica, Hospital General Universitario de Alicante, Alicante, Spain


Aims  When endoscopic retrograde cholangiopancreatography (ERCP) fails, EUS-guided rendezvous technique (EUS-RV) is an effective alternative. However, guidewire extraction through the duodenoscope is time-consuming and has some complications.

To assess the efficacy of papilla cannulation using a home-made monorail sphincterotome over a guidewire after EUS-RV.

Methods  We report a prospective cohort study of biliary-pancreatic EUS-RV conducted in a tertiary Spanish center from June 2017-September 2018. Two cohorts were compared: one with traditional papilla cannulation after EUS-RV and one with papilla cannulation using home-made monorail sphincterotome. Monorail sphincterotome was made using the same sphincterotome when ERCP failed, by using a scalpel to make a 2 – 3 mm slot in the convex part of the distal end of the sphincterotome.

Results  A total of 33 cases (21 men/12 women, mean age 75.4 years) were included: four cases of pancreatic EUS-RV and twenty-nine biliary EUS-RV. In regards to procedure indication: 10 patients with malignant stenosis, 13 with choledocholithiasis, 6 with benign biliary stenosis, 2 with pancreatic stenosis, 2 with intraductal lithiasis. NovaGold 0.018” guidewire was used in 19 cases while Visiglide 0.025” guidewire in 14 cases. Technical success to cannulate the papilla using monorail sphincterotome was 30/33 cases (91%). Median (P25–P75) duration of EUS-RV using monorail sphincterotome was significantly lower compared to traditional method: 32 (25 – 38) vs. 59 (51 – 66) min.
ePP86 NOT A SHOT IN THE DARK; THE IRISH EXPERIENCE OF EUS GUIDED GALLBLADDER DRAINAGE WITH THE HOT AXIOS STENT

Authors: Maheshwari P1, Moran C1, Farman M1, Kumar S1, Harewood G1, Sengupta S1, Cheriyan D1

Institute 1 Beaumont Hospital, Dublin, Ireland

DOI: 10.1055/s-0039-1681629

Aims: The management of gallbladder disease is particularly challenging in patients who are elderly or poor surgical candidates. Current standard of care for acute cholecystitis in this cohort involves antibiotics and possible percutaneous drainage via interventional radiology. External drains are uncomfortable, may dislodge, and can result in delayed hospital discharge or re-admission. We report the first 10 cases in Ireland of EUS guided placement of a lumen apposing metal stent between the gallbladder and stomach or duodenum using the hot AXIOS system.

Methods: Nine patients with acute or recurrent cholecystitis and 1 patient with malignant biliary obstruction causing cholecystitis were prospectively selected as appropriate candidates. Each patient was deemed unsuitable for surgical intervention given advanced age or co-morbidities. Under conscious sedation in the endoscopy unit, EUS guided gallbladder drainage (EUS-GBD) was performed. Elective, interval stent removal was not planned given patient frailty. Time to follow up or death was calculated from medical records and clinical efficacy was assessed on patient review.

Results: EUS-GBD was performed in 10 patients (mean age 79.5 years, range 65–95). Stent placement was successful in 100% of patients. 1 patient with advanced metastatic duodenal obstruction developed an aspiration pneumonia a few days post procedure and died. Another patient died of lung cancer 230 days post-procedure; otherwise all patients were alive and clinically improving at time study end. Mean time to follow up or death was 179 days (median 193 days).

Conclusions: EUS-GBD in carefully selected patients is feasible, safe and may reduce the morbidity and long term care issues associated with percutaneous drains.

ePP87 USE OF CT IMAGING TO PREDICT SUCCESS OF ENDOSCOPIC ULTRASOUND GUIDED GALLBLADDER DRAINAGE

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DOI: 10.1055/s-0039-1681630

Aims: Endoscopic ultrasound guided endoluminal gallbladder drainage is an evolving treatment for patients with gallbladder disease. The procedure is usually performed in patients medically unfit for surgery. Currently there are no predictive models to determine the likelihood of success of the procedure. Our study proposes a scoring system using CT imaging to determine eligibility for the procedure.

Methods: This is a retrospective examination of 150 sequential CT scans with contrast of the abdomen performed between January 2015 and March 2015. Images were assessed using non-diagnostic monitors with a web based PACS system browser (Sectra, Linköping, Sweden). The gallbladder was identified (when present) and its closest relationship to the stomach and duodenum was quantified using on-line measuring tools. A scoring system (CT assisted score - CTAS score) relating area to breadth was devised to create a numerical value inversely proportional to favorability, with a score of 1 being the most favorable.

Results: Of the 150 scans reviewed, 100 scans were included in the analysis. Sixty-three demonstrated preferential approximation of the gallbladder to the duodenum. Sole gastric approximation was observed in only two patients. The CTAS score ranged from 1 to 36, with 54 scans being 1, predicting success. The duodenal bulb was the most frequently approximated to the gallbladder wall compared to the second portion of the duodenum or gastric antrum.

Conclusions: The CT assisted score may be a valuable tool to predict candidacy for endoscopic ultrasound guided endoluminal gallbladder drainage. Accessing the gallbladder from the duodenal bulb is preferential.

Friday, April 5, 2019 14:00 – 14:30 ePoster Podium 6

ePP88 UTILITY OF DOUBLE BALLOON ENTEROSCOPY FOR THE EVALUATION OF OBSCURE GI BLEEDING IN PATIENTS WITH SURGICALLY ALTERED UPPER GI TRACT ANATOMY

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DOI: 10.1055/s-0039-1681631

Aims: To evaluate the diagnostic and therapeutic utility of double balloon enteroscopy for the diagnosis and treatment of obscure gastrointestinal bleeding in patients with surgically altered upper GI tract anatomy.

Methods: This is a single center, observational, open label case series of 18 patients with Roux-en-Y anatomy undergoing 22 DBE procedures for O GiB during a three-year period.

Results: Of the 18 patients (8 female, 10 male, mean age 57.8 years, range 36–72, mean ASA 3, range 2–4), 16 patients had active bleeding (i.e. overt O GiB, melena or hematochezia) at the time of DBE. In 12 cases the bleeding was occurring at the site of the anastomosis, whether that be hepaticojejunal or jejunojejunal (arterio-venous malformations at the anastomotic site n = 6, ulcers or erosions n = 4, Dieulafoy lesions n = 2). In two patients the bleeding source were peptic ulcers in the excluded stomach or duodenum. In four patients no bleeding lesion was found. Endoscopic therapy was applied in 14 patients (in 4 patients dual therapy was utilized) (injection n = 5, argon plasma coagulation n = 9, clipping n = 4).

Conclusions: DBE was a safe and feasible technique to evaluate the small intestine in the setting of O GiB in patients with surgically altered anatomy. The anastomotic site (hepaticojejunostomy of jejuno-jejunal) was the source of bleeding in most patients. However, peptic ulcer was also a source of bleeding in two patients with excluded stomach. DBE should be considered as a useful tool to provide diagnosis and treatment in patients with O GiB and surgically altered upper GI anatomy.
ePP89 OAKLAND SCORE IS NOT BETTER THAN HAEOMOGLOBIN FOR PREDICTING OUTCOMES IN LOWER GASTROINTESTINAL BLEEDING

Authors Lira A1, Machlab S1, García-Iglesias P2, Martínez-Bauer E3, Mármar C1, Callach M2, Hernández L1, Brunet E3, Melcarne L2, Da Costa J2, Llibre C2, Puj-Divi V3, Junquera F3, Campo R3, Calvet X2, Brullet E3

Institute 1 Gastroenterology and Endoscopy, Hospital Universitari Parc Taulí, Sabadell, Spain; 2 Gastroenterology, Hospital Universitari Parc Taulí, Sabadell, Spain; 3 Endoscopy, Hospital Universitari Parc Taulí, Sabadell, Spain

DOI 10.1055/s-0039-1681632

Aims The aim of this study was to compare the accuracy of Oakland score (OakS) with haemoglobin alone (Hb) for predicting outcomes after lower gastrointestinal bleeding (LGIB).

Methods Safe discharge was the main outcome predicted by OakS. It was defined as the absence of the following: a) rebleeding; b) red blood cell transfusion; c) therapeutic intervention; d) readmission with further LGIB within 28 days and e) in-hospital death.

A retrospective study was performed from January 2013 to December 2015 in a university tertiary care hospital. Patients with acute LGIB were identified using the International Classification of Diseases (9th Revision) and Clinical Modification codes for admission diagnosis. OakS was retrospectively calculated according to clinical reports data. Area under the curve (AUROC), were calculated for OakS and Hb value. AUROCs were compared with the DeLong method by using STATA 14.1 software (StataCorp.2015).

Results A total of 258 patients with acute LGIB were identified retrospectively. Median age was 76.4 years (range 31.7 – 96.5), 178 (69%) of patients were older than 70 years, 54.3% were men. 154 (57.7%) patients were safely discharged. Six patients (2.3%) died, 50 (19.4%) rebleed, 84 (32.6%) needed transfusion, 20 (7.8%) were readmitted, 28 (11.2%) needed endoscopic treatment and 3 (0.8%) transcatheter arterial embolization. No patient required surgery.

The comparison of the AUROC for OakS and Hb are shown in table 1.

<table>
<thead>
<tr>
<th></th>
<th>Oakland Score AUROC (95% IC)</th>
<th>Haemoglobin AUROC (95% IC)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safe discharge</td>
<td>0.80 (0.74 – 0.86)</td>
<td>0.82 (0.77 – 0.88)</td>
<td>0.1516</td>
</tr>
<tr>
<td>n=154; 59.7%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rebleeding, n=50; 19.4%</td>
<td>0.68 (0.68 – 0.83)</td>
<td>0.81 (0.75 – 0.87)</td>
<td>0.0409</td>
</tr>
<tr>
<td>Haemostatic Intervention, n=31; 12%</td>
<td>0.67 (0.55 – 0.77)</td>
<td>0.70 (0.61 – 0.80)</td>
<td>0.3852</td>
</tr>
</tbody>
</table>

Conclusions Hb seems non-inferior or even superior to OakS for predicting safe discharge, transfusion, rebleeding, haemostatic intervention or death. OakS was better only for predicting readmission, but the predictive value for this outcome was low for both Hb and OakS.

ePP90 CHARACTERISTICS OF ACUTE SEVERE LOWER GASTROINTESTINAL BLEEDING IN PATIENTS WITH CROHN’S DISEASE

Authors Jung BI1, Kim MC1, Kang MK1, Cho JH1, Kim SB1, Kim KH1, Kim KO1, Lee SH1, Kim TN1

Institute 1 Internal Medicine, Yeungnam University College of Medicine, Daegu, Korea, Republic of


Aims Acute severe lower gastrointestinal bleeding (LGIB) is a rare complication in Crohn’s disease, which is a therapeutic challenge due to variety of clinical manifestations and extents of disease. We aimed to compare the characteristics of the first bleeding and re-bleeding episodes in patients with Crohn’s disease.

Methods Between January 2012 and November 2015, 30 patients of severe LGIB of Crohn’s disease were retrospectively investigated. Acute LGIB was defined as acute massive rectal bleeding requiring 2 packs of blood transfusion within at least 24 hours or a sudden decrease in hemoglobin level below 9 g/dl.

Results Mean age at the time of bleeding was 38.4 ± 10.9 years. Mean duration from diagnosis of Crohn’s disease to the first bleeding episode was 66.9 ± 63.7 months. Mean serum levels of hemoglobin and C-reactive protein were 8.6 ± 1.8 g/dl and 7.1 ± 7.9 mg/dl, respectively. And 19 (63.3%) patients had moderate-to-severe Crohn’s disease. The bleeding focus was identified in 56.7% of patients, by colonoscopy (46.7%). The bleeding lesion was an ulcer in 81.3% of the cases, and left colon in 56.2%. The treatment of acute severe LGIB accounted for 50% of the medical treatments using systemic corticosteroids. The maintenance treatment were 16 (53.4%) using azathioprine and 4 (13.3%) using infliximab, respectively.

In moderate-to-severe Crohn’s disease, re-bleeding episodes occurred more frequently than first bleeding episode, but not statistically significant (p=0.082). However, utilization of the total parenteral nutrition was statistically significantly higher in the re-bleeding episode group than in the first bleeding group (45.0% vs. 90.0%, p=0.048).

Conclusions Acute severe LGIB in Crohn’s disease is usually considered to be a conservative treatment with systemic corticosteroids, azathioprine, and infliximab. However, operative treatment may be needed for poorly controlled bleeding and further studies including prevalence and re-bleeding risk factors are needed.

Friday, April 5, 2019 14:00 – 14:30
Quality 4 ePoster Podium 7

ePP91 CONVERSION COEFFICIENT FOR THE ESTIMATION OF THE ADENOMA DETECTION RATE FROM THE POLYP DETECTION RATE: VALIDATION IN A REAL COLONOSCOPY SCREENING PRACTICE SETTING IN GREECE

Authors Papastergiou V1, Mathou N1, Giannakopoulos A1, Evgenidi A1, Schoretsanitis E1, Lenas M1, Apsessou D1, Paraskeva K1

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Aims Adenoma detection rate (ADR) is a fundamental metric in colonoscopy quality; however, it is cumbersome to obtain as it requires the linkage of endoscopy and pathology reports. The adenoma-to-polyp-detection-rate-quotient (APDRQ) has been proposed as an easy multiplier for the estimation of the individual endoscopist’s ADR from polyp detection rate (PDR), although it lacks validation in different populations and practice settings. We aimed to validate the use of the APDRQ in a real colonoscopy practice setting in Greece.

Methods Consecutive screening colonoscopies of average-risk individuals conducted between January 2015 and June 2018 at the Endoscopy Unit of the Konstantopoulo General Hospital (Athens, Greece) were retrospectively evaluated. The actual ADR and PDR were calculated for each endoscopist and the weighted averaged ADR to PDR ratio for all the endoscopists was used to calculate APDRQ. The APDRQ was then used as a conversion multiplier to estimate each endoscopist’s ADR from his/her PDR [estimated ADR = actual PDR x APDRQ].

Results A total of 1505 individuals were analyzed. The average PDR for the whole endoscopist group was 31.4% (range: 13% to 38.1%), whereas the average actual ADR was 20.4% (range: 13%-28.1%). Based on the weighted averaged ADR to PDR ratio for all the endoscopists, the APDRQ was estimated to 0.65. The average estimated ADR was 21.9% (range: 12.7%-30.2%). There was a strong correlation between actual ADR and the estimated ADR (Pearson correlation = 0.95).

Conclusions In a real colonoscopy screening practice setting, the ADR of an average-risk individual can be reliably estimated from his/her PDR using an easily applied conversion coefficient.
ePP92 PUBLIC ATTITUDES TO COLONOSCOPY: EXPERIENCE OF COLONOSCOPY

Authors Amlani B1, Bhandari P2, Radaelli F3

Institute 1 Norgine, Medical Affairs, Harlefield, United Kingdom; 2 Portsmouth University Hospital, Department of Gastroenterology, Portsmouth, United Kingdom; 3 Ospedale Valduce, Unità Operativa Complessa di Gastroenterologia, Como, Italy


Aims European public beliefs and attitudes to colonoscopy are poorly understood. A survey was conducted to better understand the issue.

Methods An online survey was conducted in the UK, Germany, France, Spain, and Italy (EUS) among members of the general public who had not had a colonoscopy and also those who had undergone a colonoscopy. One of the ten questions to both groups asked: Please indicate how strongly you agree or disagree with the following statements? A) I would be nervous of having a colonoscopy; B) Having a colonoscopy is painful; and C) I would be worried about a colonoscopy being painful.

Results The survey targeted 500 people that had not had a colonoscopy and 100 people that had undergone a colonoscopy in the last five years in each country. The survey targeted people aged 18 to 70 and aimed to balance respondent groups for region, gender, age and occupation.

Conclusions People with experience of colonoscopy tend to be more positive than those that have not undergone a colonoscopy. The colonoscopy ‘experience’ is not as bad as anticipated.

ePP93 FELLOW INVOLVEMENT DURING COLONOSCOPY DOES NOT AFFECT EXAMINATION’S QUALITY INDICATORS IN A GREEK TERTIARY ENDOSCOPY FACILITY

Authors Gkolfakis P1, Tziatzios G1, Stamou A1, Karamaroudis S1, Grammatikos K1, Miltiadou K1, Gatos-Gatopoulos P1, Triantafyllou K1

Institute 1 Hepatogastroenterology Unit, Second Department of Internal Medicine – Propaedeutic, Research Institute and Diabetes Center, Medical School, National and Kapodistrian University of Athens, “Attikon” University General Hospital, Athens, Greece


Aims To evaluate the effect of fellow’s involvement during colonoscopy on examination’s quality indicators.

Methods Colonoscopies records of two consecutive years were retrospectively assessed. We included screening, surveillance and diagnostic examinations; IBD and incomplete (due to obstruction) examinations were excluded. Adenoma detection rate (ADR), mean adenoma per colonoscopy (MAC), cecum intubation rate (CIR) and adverse events (AEs) comprised the endpoints.

Results We reviewed 2241 records (50.8% female, age 62 ± 12.9 years), 685 (30.6%), 569 (25.4%) x1087 (44%) were screening, surveillance and diagnostic examinations, respectively. A fellow was involved in 1580 (70.5%) of them by performing part or the entire colonoscopy under attending endoscopist’s supervision (Group A); the rest were attending-only examinations (Group B). ADR did not differ between the two groups overall [27.8% vs. 26.1% (p = 0.43)] and per indication [27.6% vs. 23.9% (p = 0.29), 37.7% vs. 39.7% (p = 0.65) and 22.5% vs. 17.3% (p = 0.11)] for screening, surveillance and diagnostic examinations, respectively. Similarly, MAC did not differ between groups A and B overall [0.45 ± 0.93 vs. 0.44 ± 0.98 (p = 0.88)] and among the three indications (0.39 ± 0.79 vs. 0.38 ± 0.88; p = 0.87; 0.65 ± 1.1 vs. 0.73 ± 1.2; p = 0.44 and 0.38 ± 0.93 vs. 0.27 ± 0.84; p = 0.12). CIR and AEs did not differ significantly between group A and B [95.3% vs. 94.6% (p = 0.51) and 0.01% vs. 0% (p = 0.52)] respectively.

Conclusions In a Greek tertiary center authorized to train fellows, their involvement in colonoscopy does not affect examination’s quality indicators.

ePP94 PREDICTIVE FACTORS OF NON-CURATIVE ENDOSCOPIC SUBMUCOSAL DISSECTION FOR EARLY GASTRIC CANCER

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DOI 10.1055/s-0039-1681637

Aims Endoscopic submucosal dissection (ESD) has been accepted as the treatment of choice for early gastric cancer (EGC) without lymph node metastasis. However, additional surgical gastrectomy should be considered after non-curative endoscopic resection. We aimed to evaluate the predictive factors associated with non-curative endoscopic resection.

Methods Between November 2008 and June 2015, a retrospective study was conducted in a single, tertiary, referral hospital. A total of 296 EGC lesions resected by ESD were analyzed. Non-curative endoscopic resection was defined as the occurrence of lesions associated with piecemeal resection, positive resection margins, lymphovascular invasion, or lesions that did not meet the expanded indications for ESD.

Results The rate of non-curative endoscopic resection was 16.1%. The mean follow-up period was 35.3 ± 25.0 months. Associated predictive factors for non-curative endoscopic resection were female sex (OR, 2.470; p = 0.004), lesion size ≥ 20 mm (OR 3.714; p < 0.001), longer procedure time (OR 2.449; p = 0.002), ulceration (OR 3.538; p = 0.002), nodularity (OR 2.967; p < 0.001), depression (OR 1.806, p = 0.038), undifferentiated carcinoma (OR 2.825, p = 0.031) and lesion located in the mid or upper third of stomach (OR 7.135 and OR 4.155, p < 0.001, respectively). As the number of risk factors increased, the risk of non-curative ESD also increased.

Conclusions Prior to selection of ESD, the risks associated with non-curative ESD should be considered so that appropriate treatment modalities may be selected.

ePP95 CAN HELICOBACTER PYLORI ERRADICATION AFFECT OCCURRENCE OF METACHRONOUS GASTRIC TUMOR AFTER ENDOSCOPIC SUBMUCOSAL DISSECTION FOR EARLY GASTRIC TUMOR?

Authors Kim SH1

Institute 1 Gastroenterology of Internal Medicine, Eulji University/Eulji Hospital, Seoul, Korea, Republic of

DOI 10.1055/s-0039-1681638

Aims Metachronous gastric tumor (MGT) development has become a major problem after endoscopic resection. The relationship between helicobacter pylori eradication and MGT incidence rate has not been clarified. We evaluated the incidence, clinicopathologic features and the risk factors for MGT.
Methods From May 2008 to March 2013, we enrolled 260 patients (295 lesions) of gastric tumors which underwent ESD at EMC. Metachronous lesions were defined as secondary gastric neoplasms occurring at least 1 year after the initial ESD. We excluded 11 patients who have 22 synchronous lesions. Finally, a total of 249 patients (273 lesions) were enrolled this study. The 12 patients (31 lesions) were MGT and 237 patients (242 lesions) were single gastric tumor (SGT). We investigated the both patient factors and lesion factors. Lesion factors were tumor size, location, macroscopic finding and histological change.

Results The clinicopathologic features associated with MGT, including Helicobacter pylori infection (p = 0.40), histology (p = 0.47), tumor size (p = 0.28), depth (p = 0.4) and location (p = 0.99) were not significantly associated with MGT development. However, 70.45% of gastric tumors were occurred on the lower third, and 75% of MGT were developed on the same region (p > 0.99). 57.89% of MGT were developed on the same part of the stomach. Macroscopically elevated features (Ila) were associated with MGT development (p = 0.0014). Multivariate analysis exhibited no associations among the factors. The median period (SD) of the MGT development after ESD was 28.85 (14.3) months. And occurrence rate was 4.42% per year.

Conclusions There was no statistically significant correlation between MGT development and HP infection. grossly flat elevated feature, only was considered as high risk of MGT development. However, two thirds of the early gastric tumors were likely to occur on the lower third of the stomach, and only half of the MGTs tended to develop on the same part of the stomach.

Friday, April 5, 2019 14:00 – 14:30 Stomach ESD ePoster Podium 8

ePP96 EARLY GASTRIC CANCERS FREQUENTLY RECUR IN PATIENTS WITH LIVER CIRRHOSIS (LC) COMPARED WITH NON-LC PATIENTS

Authors Joo MK1, Yang CH2, Koh JS1, Lee BJ1, Park JJ1, Chun HJ1, Lee SWa Institute 1 Gastroenterology, Korea University Guro Hospital, Seoul, Korea, Republic of; 2 Internal Medicine, Dongguk University Gyeongju Hospital, Gyeongju, Korea, Republic of; 3 Gastroenterology, Korea University Anam Hospital, Seoul, Korea, Republic of; 4 Gastroenterology, Korea University Ansan Hospitals, Ansan, Korea, Republic of DOI 10.1055/s-0039-1681639

Aims Aims We investigated clinical efficacy, safety and long-term follow-up outcomes of early gastric cancer (EGC) treated by endoscopic resection in patients with liver cirrhosis (LC), by comparing with non-LC patients.

Methods From March 2007 to March 2016, EGC patients who had underlying LC and underwent endoscopic treatment at our institute were enrolled (LC-EGC group). Clinical and histopathologic short-term outcomes and long-term follow-up outcomes were compared with EGC patients without LC (non-LC-EGC group).

Results Seventeen EGC lesions in 14 patients LC were resected by endoscopic procedure for the treatment of EGC. Male were 85.7% (12/14), alcohol was the most common cause of LC (10/14, 71.4%), and 10 patients (71.4%) were corresponding to decompensated LC. When we compared LC-EGC group with non-LC-EGC group (665 EGC lesions in 640 patients), baseline characteristics (age, sex, comorbidities), characteristics of tumor (size, gross type, location), short-term outcomes (en bloc resection rate, complete resection rate, curative resection rate) and histopathology (differentiation, submucosal invasion, lymphovascular involvement) were not significantly different in both groups. However, recurrence of entire cancer (30.8% vs. 5.3%, p < 0.001), synchronous cancer (15.4% vs. 2.0%, p = 0.001) and metachronous cancer (15.4% vs. 3.3%, p = 0.019) were significantly higher in LC-EGC group than non-LC-EGC group.

Conclusions Endoscopic resection of EGC in LC patient is an effective and safe modality. However, physicians may pay attention to the recurrence of cancer during clinical follow-up.

Friday, April 5, 2019 16:30 – 17:00 Bariatric Endoscopy ePoster Podium 1

ePP97 ENDOSCOPIC SUBMUCOSAL LASER ABLATION FOR THE TREATMENT OF TYPE 2 DIABETES – PRELIMINARY FIRST IN HUMAN STUDY RESULTS

Authors Benes M1, Marcovitch I2, Mraz M3, Herschkovitz A2, Haluzik M3 Institute 1 Gastroenterology and Hepatology, IKEM, Prague, Czech Republic; 2 Clinical Department, Digma Medical Ltd., Petah Tikva, Israel; 3 Diabetology, IKEM, Prague, Czech Republic DOI 10.1055/s-0039-1681640

Aims Duodenal exclusion by surgery or an artificial liner has been found very effective in treating T2DM. Duodenal Glycemic Control (DGC) is an endoscopic procedure under direct vision which uses a disposable catheter (DiaGone) without an implant. DiaGone utilizes precisely controlled laser technology to target the duodenal submucosa in order to modulate the GI neurohormonal axis, hence improving glucose metabolism.

Following encouraging data from an insulin-resistant porcine animal-model study, the DiaGone catheter was tested in a first-in-human study for the evaluation of safety and performance. The DGC procedure was performed under direct vision by interventional gastroenterologists on Subjects with T2DM uncontrolled on oral medication (metformin).

Methods Six patients (All men; baseline HbA1c 9.0% & mean BMI 30.0 kg/m²) were treated with sub-optimal energy dosage and analyzed for tolerability and safety.

Results All procedures completed successfully. Median procedure time was 50 minutes. 1-month follow-up endoscopies were without any clinical findings in all patients; there were no reported adverse events related to the device or the procedure. None of the patients reported changes in GI symptoms or behavior.

Conclusions DGC is an easy to use endoscopic treatment of T2DM, demonstrating safe and highly tolerable results. Currently, DiaGone catheter and DGC procedure are being tested in T2DM patients using therapeutic dosage in an on-going study.

ePP98 EVALUATION OF FREQUENCY OF VOMITING AND THE NEED FOR HOSPITAL SUPPORT AFTER PLACEMENT OF THE INTRAGASTRIC BALLOON (IGB)

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Aims One of the most widely used treatment options in Brazil is the implantation of a silicone intragastric balloon (IGB). The most common side effects after implantation of an IGB are nausea, vomiting and dehydration. According to Scudero et al 71.1% of patients experienced nausea and 57.9% had vomiting. Regarded as one of the major causes of early withdrawal of the balloon, it is important to evaluate the
frequency intravenous hydration required to quell nausea and vomiting during the first days of use of the accessory.

**Methods** Retrospective study, with analysis of medical records of 340 obese and overweight patients treated with iIGBs between November 2014 and December 2016 in the bariatric endoscopy division of a private clinic in São Paulo.

The patients used omeprazole 40 mg once a day, as well as antiemetic drugs compulsorily for the first 5 days.

The data recorded were the number and frequency of vomiting and whether there was a need for intravenous hydration in the first three days after implantation of the iIGB.

**Results** The sample consisted of adults, 84.11% of whom were women, with a mean age of 34.19 ± 6.16 years, a mean BMI of 36.94 ± 5.67 Kg/m². 74.41% of our sample reported nausea and vomiting in the first three days after IGB placement. Among the patients who experienced vomiting, 67.58% presented a frequency of up to five times per day and 32.42% from five to ten times per day. Approximately 9.48% of the patients required intravenous hydration and there were no early IGB withdrawals.

**Conclusions** An endoscopic approach to obesity and excess weight with IGBs causes dehydration requiring intravenous hydration in 7.06% of all patients who had IGBs implanted.

**ePP99V** **EXPLANT OF INTRAGASTRIC BALLOON WITH SEVERE FUNGAL COLONIZATION: HOW DO I DO IT?**

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**Introduction** Placement of an intragastric balloon (IGB) by endoscopic route is an efficient, safe and minimal invasive procedure for the treatment of obesity. Fungal colonization of IGBs is a rare adverse event that can lead to serious complications during IGB removal. The technique described herein may facilitate extraction in these cases and reduce the risk of complications, as this is a safe option for balloon removal after intense fungal colonization.

**Case report** A 43-year-old female patient with a body mass index of 30.7 kg/m², without comorbidities, who was submitted to IGB placement to treat obesity. In the six months following the procedure, the patient was treated with proton pump inhibitors and she lost about 18 kg. Near the date scheduled to remove the IGB, the patient began with persistent fever and myalgia. The complete blood count showed leukopenia (2.0 × 10⁹/L) and thrombocytopenia (48 × 10⁹/L) and her serology (IgM) was positive for Dengue fever. Conservative treatment was instituted with rest and hydration and the patient had a good evolution. The removal of the IGB was postponed until normalization of the platelet count and resolution of the infection (seven months after the IGB placement). Upper endoscopy identified intense colonization of the balloon by fungus. The IGB was emptied according to the conventional technique using a balloon removal needle with the contents being aspirated completely. However, removal of the IGB using endoscopic tweezers was unsuccessful; it was impossible for the IGB to pass through the cardia as it was rigid with rough walls due to the fungal colonization and because of its friability. It was then decided to cut the balloon in the middle using bariatric scissors in order to reduce its thickness and facilitate its extraction. Finally, the endoscopic tweezers were again introduced and the IGB was successfully removed without further complications.
patients compared to non-DM patients (5.32+/−1.19 VS 4.38+/−1.34, p = 0.004) and to DM patients without insulin treatment (5.32+/−1.19 VS 4.23+/−1.59, p = 0.004).

Retinopathy or nephropathy alone did not significantly influence SBTT. Gastric transit time was similar between DM and non-DM cohorts (0.54+/−0.67 hours VS 0.6+/−0.82 hours, p = 0.55), with no influence for DM characteristics.

VCE completion was lower in patients with diabetic neuropathy compared to those without end-organ damage (87.5% VS 98%, p = 0.03). A trend for lower completion rate was noted in insulin treated patients and those with multiple end-organ damage.

Conclusions SBTT is significantly prolonged in DM patients with neuropathy or insulin treatment, leading to lower VCE completion rate in those patients. An a priori longer VCE recording time should be considered for patients with these conditions. For DM patients without end-organ damage or insulin treat-ment, transition times and VCE completion rates are similar to those without DM, and examination time adjustments are probably not needed.

ePP102 COLON CAPSULE ENDOSCOPY WITH OR WITHOUT BIOMARKERS AS A VIALBE ALTERNATIVE TO COLONOSCOPY IN UNSELECTED PATIENTS WITH LOWER GI SYMPTOMS: RESULTS OF A PILOT STUDY

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DoI 10.1055/s-0039-1681645

Aims Lower-gastrointestinal symptoms (LGS) are poor at predicting Clinically-Significant Disease (CSD) despite being the main way of prioritising referrals. This has lead to prolonged wait-times with majority having normal colon-copies. Alternative diagnostic pathways are needed; biomarkers and/or colon capsule endoscopy (CCE) may be helpful.

Aim To evaluate the use of stool biomarkers and CCE in diagnosing lower-GI disease compared to colonoscopy.

Methods A prospective comparative single-centre study. Following ethical approval, patients 18 – 80 years referred with LGS were recruited. Participants had FC, FIT, CCE and a standard colonoscopy. FIT > 10ug/g and FC > 50ug/g was considered positive. Colonoscopy was considered gold-standard. Diagnostic accuracy of biomarkers and CCE was determined and Pearson-coefficients calculated.

Results So far, 69 patients recruited; 8 excluded. Mean age 47 (20 – 79) years, 43% (n = 19) males. To date, 44/61 (72%) have undergone colonoscopy. Colonoscopy diagnostic yield 64% (n = 28); caecal intubation 95% (n = 41). Findings; diverticulosis 7 (16%), polyps 14 (30%), IBD 5 (11%), haemorrhoid 2 (5%). CSD 20% (9/44)-HRA 4 (9%), IBD 5 (11%).

40/44 (91%) FIT and 41/44 (93%) FC have been tested. 25% (n = 10) FIT and 41% (n = 13) FC were positive. Mean FIT = 14.2ug/g (range 0 – 149) and mean FC = 121.7ug/g (range < 19.5 – 168). FIT and FC has a weak correlation with colonoscopy (r = 0.1, -0.057 respectively). Combined FIT&FC positive (r = 0.08). Sensitivity, specificity, PPV and NPV; FIT 29%, 81%, 70%, 43%; FC 32%, 63%, 57%, 37%; combined 52%, 56%, 65%, 43%.

CCE excretion rate 82% (n = 36/44) and reached left colon in 100%. Diagnostic yield for CCE was 61% (n = 27). CCE had a strong correlation with colonoscopy (R = 0.8). Polye detection rate CCE, 39% (17/44) versus colonoscopy 32% (14/ 44),100% (9/9) CSD on colonoscopy was detected on CCE. Overall, CCE sensitivity = 90%, specificity = 93%, PPV = 95%, NPV = 92%. For CSD – sensitivity, specificity, PPV and NPV = 100%.

Conclusions Biomarkers performed poorly and should not be considered a reliable screening tool for CSD in patients with LGS. However, CCE had excellent correlation with colonoscopy in our unselected symptomatic cohort and warrants further investigation as a filter test.
Sirin G1, Erkan Duman A1, Hülagü S2, Sandru V1, Plotogea OM1, Ilie M2, Constantinescu A1, Ungureanu B3,
gives hope as a very important modality in medical management and treat-
initial investigations for celiac disease. In individuals with RCD, DBE
and histopathological examinations if complaints persist in patients with ne-
other one has G
with CD. One of six RCD patients has stricturan Crohn disease in ileum and the
were histopathologically more positive comparison to the first duodenal sam-
from duodenum, jejunum and ileum it was seen that the duodenal specimens
diagnosis of CD, the results were significantly in favor of duodenal samples
lymphocyte count, no significant difference was detected between the two
Results
the management of RCD and to the diagnosis of CD were compared.

Aims
Appointed to Kocaeli University between June 2017 and May 2018,

ERCP stones ePoster Podium 4

Friday, April 5, 2019
16:30 – 17:00

ePP106 SPYING BACK TO STONE AGE, PREPARING
FOR THE FUTURE OF BILIARY STONES EXTRACTION – A
DECADE LONG EXPERIENCE WITHOUT LIGHT BEAMS

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Aims To evaluate the efficacy of endoscopic extraction methods before the use of cholangioscopy assisted laser and electrohydraulic lithotripsy.

Methods We conducted a retrospective single center study over 10 years from 2009 to 2018. We included in the study 2865 patients with single or multiple bile duct stones submitted to ERCP. We analyzed each technique of extraction in correlation with the following parameters: mean diameter of the stone(s) (MDS), mean diameter of the common bile duct (MDCBD) and success rate (SR) defined by number of cases solved endoscopically vs. cases of residual lithiasis/referred to surgery. Collected data were processed in IBM SPSS Statistics 20.

Results Patients with choledocholithiasis underwent different endoscopic extraction techniques: basket, retrieval balloon, lithotriptor, combined methods + balloon dilator. Endoscopic success rate was 92%. 153 patients (5.3%) were referred to surgery because endoscopic techniques failed, while 60 patients (2%) had residual lithiasis after ERCP despite using more than 2 methods of extraction. This fact was statistically correlated to high values of MDS and MDCBD. Stones with a mean diameter of 6 mm were extracted only by using basket or retrieval balloon, while stones with a diameter of more than 14 mm were treated by surgery (p < 0.05). The same situation was encountered for MDCBD, which was higher than 17 mm in the surgery group and lower than 13 mm in ERCP group. Between these values fitted in the groups of patients treated by combined endoscopic techniques.

Conclusions Stone extraction success rates were never 100% (92% in our study), and larger stones need combined techniques. Looking back at this decade long data, the new cholangioscopy assisted lithotripsy techniques used on a larger scale will make the difference and surgical treatment will be rare in the future.

ePP107 ERCP IN BILIARY STONES DISEASE: WHAT
RESULTS FOR ELDERLY PATIENTS?

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Aims The aim is to evaluate the indications and safety of ERCP in elderly subjects, and to compare the results with younger patients.

Methods From September 2002 to November 2018, we included 93 patients with biliary stones who underwent endoscopic drainage, in our department of Gastroenterology II. Patients older than 75 years were defined as elderly. Statistical analysis was performed by SPSS20 software.

Results Among 924 ERCP performed for biliary stones disease, 10.1% were over 75 years old (n = 93). The sex ratio M/F was 0.9%. 23.7% had a history of cholecystectomy (n = 22).5.4% had already endoscopic biliary sphincterotomy (n = 5). The indication for ERCP was acute biliary pancreatitis in 1.1% of cases.
(n = 1), acute cholangitis in 23.7% of cases (n = 22), a multiple large stones in 61.3% (n = 57). The diverticular papilla was present in 21.5% of cases (n = 20). Endoscopic biliary sphincterotomy was performed in 93.5% of cases (n = 87). We used additional maneuvers in 31.3% of cases, namely a naso-biliary drain in 14% (n = 13), mechanical lithotripsy in 4.3% (n = 4), extracorporeal lithotripsy in 1.1% (n = 1), enlargement of endoscopic sphincterotomy in 1.1% (n = 1), sphincteroclysis in 5.4% (n = 5), and an endoprosthesis was implanted in 5.4% (n = 5). The early complication rate post ERCP was 7.6%. The initial success rate was 62.4% (n = 58). The overall success rate was 88.2% (n = 82) compared to 92.3% for patients younger than 75 years of age (p < 0.1).

Conclusions Our study confirms that ERCP is a safe procedure in elderly patients, and that there is no difference in efficacy compared to younger patients.

**ePP108  ENDOSCOPIC BILIARY LARGE BALLOON DILATION LITHOTRIPSY (“BALLOON LITHOTRIPSY”) FOR DIFFICULT BILE DUCT STONES REMOVAL**

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**Methods** We retrieved data from 1289 ERCPs from 2 prospective trials performed between 2014 and 2018 dealing with post ERCP pancreatitis prevention. Patients with difficult bile duct stones, in which a lithotripter basket cannot be deployed or is unable to grasp the stone(s), is challenging, and inevitably leads to repeat procedures such as stent insertion and extra or intracorporeal lithotripsy. The aim of this study is to evaluate the safety and efficacy of “endoscopic biliary dilation balloon lithotripsy” (EBBD, a novel technique) for difficult stones, which were not amenable to basket or balloon retrieval after papillotomy and papillary large balloon dilation.

**Results** From the 1289 ERCPs, 258 had difficult stones (>1 cm, impacted or multiple Stones). EBBD was employed in 46 cases after endoscopic papillotomy and papillary large balloon dilation with failed attempted balloon or basket stone(s) extraction. Failure to clear the bile duct at 1st ERCP occurred in 4 cases (91.3% of success). There was 1 biliary perforation related to EBBD in a patient with a residual cholesterol stone that was successfully treated conservatively by stent insertion.

**Conclusions** Endoscopic biliary balloon dilation lithotripsy in order to crush the stones or make working room for baskets or balloons in the bile duct is a safe, effective and a low cost technique for impacted or multiple bile duct stones.

**ePP110V  TREATMENT OF AORTODUODENAL SYNDROME (ADS) WITH EUS-GUIDED GASTROENTEROSTOMY (EUS-GE)**

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**Methods** We retrieved data from 1289 ERCPs from 2 prospective trials performed between 2014 and 2018 dealing with post ERCP pancreatitis prevention. Patients with difficult bile duct stones, in which a lithotripter basket cannot be deployed or is unable to grasp the stone(s), is challenging, and inevitably leads to repeat procedures such as stent insertion and extra or intracorporeal lithotripsy. The aim of this study is to evaluate the safety and efficacy of “endoscopic biliary dilation balloon lithotripsy” (EBBD, a novel technique) for difficult stones, which were not amenable to basket or balloon retrieval after papillotomy and papillary large balloon dilation.

**Results** From the 1289 ERCPs, 258 had difficult stones (>1 cm, impacted or multiple Stones). EBBD was employed in 46 cases after endoscopic papillotomy and papillary large balloon dilation with failed attempted balloon or basket stone(s) extraction. Failure to clear the bile duct at 1st ERCP occurred in 4 cases (91.3% of success). There was 1 biliary perforation related to EBBD in a patient with a residual cholesterol stone that was successfully treated conservatively by stent insertion.

**Conclusions** Endoscopic biliary balloon dilation lithotripsy in order to crush the stones or make working room for baskets or balloons in the bile duct is a safe, effective and a low cost technique for impacted or multiple bile duct stones.

**ePP109V  EUS-GUIDED DUODENO-JEJUNOSTOMY (EUS-DJ): A NOVEL ENDOSCOPIC ANASTOMOSIS FOR PALLIATION OF GASTRIC OUTLET OBSTRUCTION (GOO)**

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**Introduction** We describe EUS-DJ as a novel salvage endoscopic approach in a patient with native GI anatomy in whom attempts at both duodenal SEMS placement and EUS-guided gastroenterostomy were unsuccessful.

**Procedure** A patient with body-tail pancreatic cancer presented with GOO. A tight stricture was identified in the third duodenal portion. Despite multiple attempts, guidewire could not be passed beyond the stricture. In addition, EUS-gastroenterostomy failed because of inability to identify an appropriately dilated small bowel loop through the gastric wall. The echoendoscope was then advanced until the second portion of the duodenum, in the long route, so that the transducer abutted the upper margin of the stricture. A collapsed jejunal loop was identified endoscopographically. A 22G needle was first used to puncture the jejunal loop in order achieve initial saline distention, facilitating subsequent puncture with a 19G needle. Through the larger 19G needle, contrast was easily injected for enterography, confirming location within the small bowel and providing additional guidance. Methylene blue was injected immediately before free-hand access across the duodenal and jejunal walls with a cautery-enabled LAMS catheter. Following catheter insertion, a 20-mm diameter LAMS was placed with both distal and proximal flanges released inside the scope channel. No adverse events occurred. The patient was discharged home the following day and tolerates a full diet 3-months later.

**Conclusions** EUS-DJ with LAMS represents a novel palliative option in the treatment of GOO. This approach may be useful in patients with strictures distal to the ampulla, in which wire-guided canalization results difficult. Several tips may facilitate the procedure: graded injection with 22G needle for initial jejunal distension before puncture with a 19G needle; methylene blue injection immediately prior to catheter insertion to provide instant endoscopic confirmation of proper target access upon LAMS deployment; Intra-channel stent release to minimize chances of stent misdeployment.
Conclusions EUS-GE may be an option to treat patients with ADS who are unfit for surgery.

ePP111V ENDOscopic ULTRASONOGRAPHY GUIDED RECANALIZATION OF A COMPLETE POSTOPERATIVE RECTOSIGMOID ANASTOMOTIC OBSTRUCTION WITH A LUMEN-APPOSING METAL STENT

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Aims To demonstrate that recanalization of a complete postoperative rectosigmoid anastomotic obstruction guided by endoscopic ultrasonography, with a lumen-apposing metal stent (LAMS) is possible.

Methods A 58-year-old man who underwent rectal surgery from adenocarcinoma in 2015, with a dehiscence of the colorectal anastomosis in the post-operative period, requiring a colostomy. Subsequently, reconstruction is performed maintaining a diverting ileostomy. 4 months later a rectoscopy showed complete obstruction of the colorectal anastomosis. It is referred to attempt endoscopic approach of the anastomosis. An endoscopic ultrasonography (EUS) guided recanalization of the obstruction was planned.

Results Attempt to access by ileostomy without reaching cecum with a colonoscope unable to introduce fluid into sigma to provide acoustic interface. In the rectum, a stump with surgical sutures is observed, without being identified with a linear echoendoscope sigmoid colon. Water and contrast are instilled in the ileum to progress to the distal colon and retry. 24 hours later the liquid administered previously was not identified in sigma with EUS or fluoroscopically. With a colonoscope advancing form ileostomy, air is introduce to dilate sigma prior the stenosis, identifying itself with a linear echoendoscope through the rectum. Puncture with a 19G needle is performed, introducing contrast in the sigma, a guidewire is advanced through sigma and cautery-enhanced LAMS 20 × 10 mm under fluoroscopic, endoscopic and EUS control. 24 hours later with colonoscopy the stent is dilated up to 20 mm. The stent is maintained, with subsequent closure of the ileostomy and removal of the stent at 12 weeks with good results.

Conclusions The recanalization of the complete colorectal obstruction guided by EUS, using LAMS is an effective alternative, and it is feasible even when there is no previous window with liquid.

ePP112 THE ROLE OF INFLAMMATORY MARKERS IN EARLY RE-BLEEDING RATES IN PATIENTS PRESENTING WITH ACUTE PEPTIC ULCER BLEEDING REQUIRING ENDOSCOPIC HEMOSTASIS

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Aims To identify the role of white blood cells, C-reactive protein and procalcitonin in the early re-bleeding rate of patients presenting with acute peptic ulcer bleeding that need endoscopic haemostasis.

Methods Prospective study conducted between February 2015 and February 2017 that included patients with active peptic ulcer bleeding, as confirmed by endoscopy, requiring endoscopic haemostasis. In order to test the correlation between inflammatory markers and early re-bleeding (up to 7 days following initial successful treatment), white blood cells (WBC), C-reactive protein (CRP) and procalcitonin (PCT) levels were analyzed before endoscopy (at admission day, day 0), and at days 3 and 7 after endoscopy.

Results The study sample consisted of 101 patients. The white blood cell count and the procalcitonin levels did not differ significantly between the 3 time points [F (1.898, 189.75) = 1.532, p = 0.215 and F (1.999, 199.86) = 0.949, p = 0.389] respectively). However, the C-reactive protein levels were statistically significantly different between the 3 time points (F (1.990, 199.04) = 11.202, p < 0.005). Re-bleeding rate, at day 7, was significantly higher in patients with elevated CRP (values >5 mg/dL) than those with normal CRP. 7 out of the 12 patients with early re-bleeding had elevated CRP as opposed to 21 out of the 89 patients that did not re-bleed during the first 7 days of admission, p = 0.011).

Conclusions CRP is significantly associated with re-bleeding in patients with peptic ulcer bleeding, within the first 7 days following endoscopic haemostasis and could therefore be tested as a screening indicator for predicting the risk or early re-bleeding in these patients.

ePP113 IRRIGATION OF THE INCOMPLETE SILVER SALT OF POLYACRYLIC ACID CONTAINING SILVER NANOPARTICLES IN HEMOSTASIS FOR INTRA-BIOPSY/ POLYPECTOMY COLONIC BLEEDING

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Aims The endoscopic hemostasis techniques and tools growth in parallel with the new techniques of endoscopic surgery. Clinical endoscopist must be aware of all available hemostatic tool to optimize the management of bleeding in daily practice. This study aims to assess usefulness of the new irrigation technique for intraprocedural colonic bleeding.

Methods In this preliminary study, we investigated prospectively cases of intraprocedural bleeding occurred in our Department from 2016 to 2018, which applied the new technique of irrigation hemostasis. The bleeding area was irrigated 10–30 ml of the 1% fluid of the incomplete silver salt of polyacrylic acid containing silver nanoparticles (does not affect the function of systemic hemostasis, hemostatic affect achieved by forming a polymethylacrylate membrane subsequently replaced by fibrin) through a spray-catheter inserted into the endoscope’s instrumental channel, exposure time = 1 – 2 min. In case of continued bleeding additional hemostasis was carried out (mechanical or/and thermal hemostatic methods). Comparative analysis: Fisher’s two-tailed exact test.

Results A total of 22 procedures were analyzed (9 intra-biopsy1 group, 13 intra-polypectomy2 group). No technique-related systematic side effects were observed.

Group 1: during the formation of the polymer complex occurs hemostasis in 9 cases, hemostatic effect achieved in 1 – 2 min, repeated bleeding was not existed, effectiveness = 100%.

Group 2: forming a smooth elastic surface didn’t break visualization of the source of bleeding and convenient field for further hemostatic manipulations. Additional methods of hemostasis were performed significantly more often in the group 2 (F = 0.00552, p < 0.05). The method of polypectomy was not associated with the subsequent need for additional hemostasis.

Conclusions These data revealed the effectiveness of the new irrigation hemostasis technique for intra-biopsy bleeding. Further analysis is required to determine the capabilities of this irrigation technique in hemostasis for intra-polypectomy colonic bleeding.
**ePP114  Efficacy of Purastat in Upper and Lower Acute Gastrointestinal Bleeding: A Dual Case Series Experience**

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**DOI** 10.1055/s-0039-1681657

**Aims** Gastrointestinal (GI) bleeding is a common cause for hospitalization, resulting in significant mortality and morbidity. Innovative topical hemostatic modalities have been developed for endoscopic use. Our aim is to demonstrate the efficacy, feasibility and safety of Purastat to control GI bleedings. Purastat is a synthetic, bioresorbable material used to produce Purastat, created to control venous/arteriolar bleedings. It’s easy, quick and transparent allowing to continue the procedure/to use other haemostatic therapies.

**Methods** We report a case series of 25 patients (16 male, 9 women, median age 73 years) recovered to two endoscopy units (Garbagnate Milanese and Monza) for acute GI bleeding after failure of other hemostatic strategies (injection/clipping/thermal coagulation). 14/25 patients presented a lower GI haemorrhage from an oozing site after mucosectomy for non polyloid colon adenomas in different sites of the colon (8 pts from the right colon) 3 patients showed melena for duodenal bleeding from bulbular kissing ulcers, 3 patients with melena and anemia after duodenal mucosectomy for a laterally spreading tumor of the second part of the duodenum. 3 patients had emathemesis after Vater papilla sphincterotomy, 1 patient showed progressive anemia for bleeding inside a pseudocyst after endoscopy ultrasound guided drainage and 1 patient presented with a massive rectal bleeding after a prostatic biopsy.

**Results** In all these patients, we tried to achieve a successful hemostasis first of all using an adrenaline injection and subsequently with clipping and/or argon plasma coagulator application without success. Finally we used a strate of Purastat applying 3 ml of gel, with a successful, stable hemostasis and a complete patients recovery in few days after the procedure, no pain and haemodynamical stability. No need to surgery or radiological haemostatic procedures.

**Conclusions** Purastat is a new, safe and feasible hemostatic device capable to control different types of GI hemorrhages even if the arteriolar massive ones.

**ePP115  Capnography During Endoscopy – A Value-Based Healthcare Pilot in a High-Volume Gastroenterology Practice**

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**Aims** As part of a quality-improvement initiative in a high-volume university hospital GI department, the study evaluated the incidence of respiratory-related adverse events (AEs) and interventions occurring during sedation using World SIVA task force consensus definitions and the impact of capnography monitoring on these.

**Methods** We compared data for patients admitted for scheduled procedures performed in the department with standard of care monitoring (control) to the data gathered for patients sequentially admitted for scheduled procedures that were monitored after full training with capnography both during the procedure and in recovery (intervention). Events were recorded during both the procedure and the recovery period. Collected data included the ASA risk score, type of procedure, procedure duration, clinician ID and any indicated SIVA defined AEs and interventions that occurred. Incidence rates and relative risks for events and interventions were determined. The primary quality improvement endpoint was the change in total incidence of mild oxygen desaturation, severe oxygen desaturation, bradycardia, and tachycardia with capnography monitoring.

**Results** Between February 2018-June 2018, 1,092 control and 1,044 intervention patients were included. In the control group there were on average 11.45 AEs per 100 procedures. In the intervention group there were on average 5.08 AEs per 100 procedures. The absolute difference between arms was -6.37 (95% [CI], -8.7 to -4.1) AEs per 100 procedures representing a 55.69% reduction (p = 0.0001). The RR for a patient experiencing the primary outcome with use of capnography was: 0.43 (95% CI, 0.31 to 0.58). Nine escalations of care were reported in the control group with none reported in the intervention group. The relative risks of experiencing both AEs and interventions during recovery were reduced significantly in the capnography arm (0.17 and 0.15, respectively).

**Conclusions** Capnography significantly reduced the incidence of respiratory AEs in real life use at a university hospital GI procedure suite.

**ePP116  Outcomes of Colonoscopy with Non-Anesthesiologist Administered Propofol (NAAP)**

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**DOI** 10.1055/s-0039-1681659

**Aims** To determine the equivalence of adenoma detection rate (ADR) in colorectal cancer (CRC) screening colonoscopies performed with NAAP and performed with monitored anesthesia care (MAC).

**Methods** Single blind non-randomized controlled equivalence trial.

**Patients** Adults between 50 – 69 years old from National CRC screening program (CRCSP).

**Intervention** Patients were blindly assigned to undergo either colonoscopy with NAAP or MAC by CRCSP office according to the arrival of fecal occult blood test, patient’s suitability for colonoscopy date and availability of places at endoscopy schedule (with NAAP or MAC).

**Main outcome measure** The ADR in CRCSP colonoscopies performed with NAAP.

**Results** We included 315 patients per group. Age: 59.76 ± 5.81y, 40.5% women. Two endoscopists (E1 and E2) with an experience over 1 year in CRCSP performed the colonoscopies. The cecal intubation rate (CIR) was 97%, adequate bowel preparation (ABP): 81.8%, withdrawal time > 6 min (WT>6): 98.7% and global exploration time (ET): 24.25 ± 8.86 min (8 – 70 min). The ADR was 62.9%, advanced ADR (aADR): 37.3%, sessile serrated ADR (ssADR): 98.7% and global exploration time (ET): 24.25 ± 8.86 min (8 – 70 min). The ADR in CRCSP colonoscopies performed with NAAP and performed with monitored anesthesia care (MAC).

**Conclusions** The ADR in CRCSP colonoscopies performed with NAAP was 62.9% compared with 55.91% performed with MAC, difference (ΔADR): 2.54%, 95% confidence interval (95% CI): -0.10 to 0.05. Analysis by...
per protocol showed an ADR in colonoscopies performed with NAAP of 62.98% compared with 61.94% performed with MAC. ΔADR: 1.04%, 95% CI: −0.09 to 0.07. There were no differences in the CR between NAAP and MAC in both analyses.

Conclusions The ADR in colorectal cancer screening colonoscopies performed with NAAP is equivalent to ADR in colonoscopies performed with MAC. Similarly, there is no difference in the complication rate.

ePP117 THE EFFECTIVENESSNESS OF ORAL PHLOROGLUCIN AS PREMEDICATION FOR NON-SEDATIVE ESOPHAGOGASTRODUODENOSCOPY: A DOUBLE BLINDED, PLACEBO-CONTROLLED, RANDOMIZED CONTROLLED TRIAL

Authors  Cho KB1, Lee YJ1, Lee JY1, Lee HJ1, Park KS1, Sagara Y1, Yano T1, Sakamoto H1, Kobayashi Y1, Nagayama M1, Seleznev DE1, Ivanova EV2, Yudin OI1, Tikhomirova EV3,

Institute 1 Keimyung University School of Medicine, Daegu, Korea, Republic of


Aims Antispasmodic agents are commonly injected before esophagogastroduodenoscopy (EGD) to inhibit gastrointestinal peristalsis. This study aimed to evaluate the effectiveness of oral Phloroglucin (Flospan) as premedication for non-sedative EGD.

Methods A Prospective, double-blinded, placebo-controlled, randomized controlled trial was conducted at a single tertiary hospital. Subjects who scheduled to undergo non-sedative EGD were randomly assigned to receive oral Phloroglucin (Flospan) or placebo at 10 minutes before EGD. The degree of peristaltic movement was evaluated at the beginning and the end of the procedure by independent investigators.

Results Overall, 140 subjects were included in the study (Phloroglucin 70, placebo 70). The degree of peristalsis in Phloroglucin group was significantly lower compared with that of placebo at the beginning of the procedure (p = 0.02) and tended to be lower at the end of the procedure, although it did not show statistical significance (p = 0.064). The difficulty of intragastric observation was significantly lower in Phloroglucin group compared with placebo at the both time period (beginning of the procedure: p = 0.002, end of the procedure: p = 0.009). Both groups showed comparable adverse events, taste of the drug and willingness to take this premedication at the next examination.

Conclusions Overall, 140 subjects were included in the study (Phloroglucin 70, placebo 70, age mean ± SD, 66.31 ± 9.37, male 47.8%). The degree of peristalsis in Phloroglucin group was significantly lower compared with that of placebo at the beginning of the procedure (p = 0.02) and tended to be lower at the end of the procedure, although it did not show statistical significance (p = 0.064). The difficulty of intragastric observation was significantly lower in Phloroglucin group compared with placebo at the both time period (beginning of the procedure: p = 0.002, end of the procedure: p = 0.009). Both groups showed comparable adverse events, taste of the drug and willingness to take this premedication at the next examination.
sures include the mean number of polyps > 15 mm and maximum size of treated polyps in each session. Secondary outcomes included the need for laparotomy after the procedure and the incidence of adverse events.

**Results** The median number of sessions and DBEs per patient were 3 (2 – 5) and 6 (4 – 12, total 67), the median number of treated polyps per patient was 37 (5 – 164, total 359). The mean number of treated polyps larger than 15 mm per patient significantly decreased over time (first 6, second 2, third 1.5, forth 1, fifth 1.5, \(P = 0.01, R = -0.44\), Spearman’s rank correlation coefficient). The maximum size of polyps treated in each patient also significantly decreased (30 mm, 20 mm, 20 mm, 12.5 mm, 17.5 mm, \(P = 0.004, R = -0.49\)). No patient required laparotomy due to intussusception during the study period. No adverse events were observed in all 67 DBEs.

**Conclusions** Ischemic therapy for small intestinal polyps in patients with PJS is effective and safe, and avoids the needs for urgent laparotomy.

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**ePP120 USE OF DOUBLE-BALLOON ENTEROSCOPY IN MANAGEMENT OF NEUROENDOCRINE SMALL BOWEL TUMOUR: CASE SERIES FROM NATIONAL TERTIARY REFERRAL CENTRE**

**Authors** Telese A1, Murino A1, Lazaridis N1, Costa D1, Laskaratos F2, Overwater A1,2, van der Meulen KE1, Künzli HT1, Schoon EJ3, de Bree E1

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**DOI** 10.1055/s-0039-1681663

**Aims** Small bowel (SB) neuroendocrine tumours (SBNETs) are heterogeneous neoplasms which may present good prognosis when identified at early stage. Prompt diagnosis is crucial for successful management however it may be challenging if the lesion is difficult to access. Double-balloon enteroscopy (DBE) enables direct small bowel mucosa visualisation and endotherapy allowing precise lesion sampling and histological diagnosis. The aim of this study was to evaluate the role of DBE in the assessment and management of SBNETs.

**Methods** Retrospective review of SBNETs evaluated and diagnosed using DBE at our institution (November 2016 – November 2018). Demographic, endoscopic, histopathological data were collected and analysed.

**Results** A total of seven patients were included (mean age: 53 (S.D.= 13.1 years)) in the study. Six patients (85.7%) presented with obscure-overt mid-gut bleeding or iron deficiency anaemia, one patient was asymptomatic. Both anterograde (n = 3) and retrograde (n = 4) route enabled assessment of the lesions, which were all located in the ileum. A reference submucosal tattoo of sterile carbon ink was placed few cm close to the lesions and multiple biopsies were taken; histopathology was diagnostic in all cases. A total of 5 patients had surgery (n = 4 small bowel resection, n = 1 right hemicolectomy with distal pancreatectomy) and further analysis of the surgical specimens showed a total of 15 SBNETs (mean lesion dimension: 8.1 (S.D.= 3.9) mm, mean number/patient: 3 (S.D.= 1.8)). Histopathological analysis showed well-differentiated grade 1 SBNET (n = 13; 86.6%), well-differentiated grade 2 SBNET (n = 2; 13.3%).

**Conclusions** DBE is essential in SBNETs pre-surgical assessment allowing for lesion sampling and tattoo marking which may be useful to guide minimally invasive surgical resection.

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**Saturday, April 6, 2019**

**Barrett therapy**

**10:30 – 11:00**

**ePoster Podium 1**

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**ePP121 ENDOSCOPIC SUBMUCOSAL DISSECTION (ESD) FOR EARLY BARRETT’S NEOPLASIA – IS AGE A BARRIER?**

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**DOI** 10.1055/s-0039-1681664

**Aims** ESD is an established therapeutic option for early neoplasia, however it is thought to carry a higher complication rate. The aim of our study was to evaluate the safety and efficacy of ESD for Barrett’s neoplasia in an ageing Western population.

**Methods** A retrospective analysis of all ESDs performed for Barrett’s neoplasia within a single tertiary referral centre in the UK from 2012 – 2018. Older patients were defined as ≥ 75 years of age and younger patients < 75 years of age at time of procedure.

**Results** 145 of 286 Barrett’s resections were ESDs, of which 50 were ≥ 75 years and 95 < 75 years. Overall age range was 41 – 94 and mean follow up was 3 years. Lesion characteristics were similar, except increased scarring in the ≥ 75 group. 80 resection rate was 68% in ≥ 75 group and 75% in < 75 group, with only 6.8% of ≥ 75 group and 4.9% of < 75 group proceeding to surgery or chemoradiotherapy for residual or recurrent neoplasia. Complications occurred in 6.0% of ≥ 75 group (1 perforation, 2 bleeds) and 4.2% of < 75 group (4 strictures), all of which were endoscopically managed. 4.5% of ≥ 75 group and 18.5% of < 75 group proceeded to surgery following poor prognostic histology and overall 74% of all patients continued with sole endoscopic management.

**Tab. 1** Lesion characteristics of the 145 ESDs

<table>
<thead>
<tr>
<th>Age group</th>
<th>Mean age (years)</th>
<th>Mean lesion size (mm)</th>
<th>En-bloc resection (n (%)</th>
<th>Previous resection (scarring) (n (%))</th>
</tr>
</thead>
<tbody>
<tr>
<td>≥ 75</td>
<td>82</td>
<td>34.2</td>
<td>47 (94)</td>
<td>15 (30)</td>
</tr>
<tr>
<td>&lt; 75</td>
<td>64</td>
<td>31.2</td>
<td>91 (96)</td>
<td>17 (18)</td>
</tr>
<tr>
<td>Total</td>
<td>72</td>
<td>32.8</td>
<td>138 (95)</td>
<td>32 (22)</td>
</tr>
</tbody>
</table>

**Conclusions** ESD is safe and effective in all ages. No significant difference was seen in complication rates between age groups and all adverse events were endoscopically treatable with no long term sequelae. We feel that age should not be a barrier to the use of ESD for Barrett’s neoplasia.

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**ePP122 OPTIMIZING HISTOPATHOLOGICAL EVALUATION OF ENDOSCOPIC MUCOSAL RESECTION SPECIMENS OF BARRETT’S ESOPHAGUS RELATED NEOPLASIA: A RANDOMIZED TRIAL OF THREE SPECIMEN HANDLING METHODS**

**Authors** Overwater A1,2, van der Meulen KE1, Künzli HT1, Schoon EJ1, Bergman L [GHM4], Raicu GM5, Seldencrijn CA2, Weusten BLAM1,2

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**DOI** 10.1055/s-0039-1681665

**Aims** Endoscopic resection (ER) is the cornerstone in the treatment of Barrett’s esophagus (BE) related neoplasia. However, accurate histopathological evaluation of ER specimens can be challenging and the preferred specimen handling method remains unknown. Therefore the aim of our study was to compare three different specimen handling methods for the assessment of all
clinically relevant histopathological parameters and for the time required for specimen handling.

**Methods** In this multicenter, randomized trial, endoscopic mucosal resection (EMR) specimens of BE related neoplasia with no suspicion of submucosal invasion during endoscopy were randomized to three specimen handling methods: pinning on paraffin, direct fixation in formalin, and the cassette technique. The histopathological evaluation scores were assessed by two dedicated gastrointestinal pathologists blinded for the handling method.

**Results** Of the 126 randomized EMR specimens, 45 were assigned to pinning on paraffin, 41 to direct fixation in formalin, and 40 to the cassette technique. The percentages of specimens with overall optimal histopathological evaluation scores were similar for the pinning method (98%) and for no handling (90%), but significantly lower for the cassette technique (64%, p < 0.001). Time required for specimen handling was shortest when no handling method was used (p < 0.001 vs. pinning and cassette).

**Conclusions** Both pinning on paraffin and direct fixation in formalin result in optimal histopathological evaluation scores in a high proportion of specimens, while the cassette technique performs significantly worse and its use in clinical daily practice should be discouraged. Given the significantly shorter handling time, direct fixation in formalin appears to be the preferred method over pinning on paraffin. However, the latter needs to be confirmed in larger studies with inclusion of all EMR specimens.

ePP123 SINGLE-STEP TREATMENT WITH ENDOSCOPIC RESECTION AND CRYOBALLOON ABLATION IS FEASIBLE AND SAFE IN AN ESOPHAGEAL PORCINE MODEL

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**Conclusions** Single-step treatment with limited endoscopic resection and cryoballoon ablation is feasible and safe in a porcine model and vindicates further evaluation in a clinical trial.

Saturday, April 6, 2019

10:30 – 11:00
ePoster Podium 2

**ePP124 UNDERWATER ENDOSCOPIC MUCOSAL RESECTION FOR SMALL RECTAL NEUROENDOCRINE TUMORS**

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**DOIs**

1.10.1055/s-0039-1681666

**Aims** Neuroendocrine tumors arise from enterochromaffin cells. The rectum is one of the most commonly sites. Many techniques for resection of nNETs have been reported. UEMR is a technique in which the bowel lumen is filled with water and the lesion is then resected without requiring submucosal injection. Current published guidelines recommend local endoscopic resection for small nNETs with no risk factors for metastasis. However, no clear indications for type of endoscopic intervention exist. This study aimed to evaluate the efficacy and safety of UEMR in removing small nNETs.

**Methods** Retrospective study with patients who underwent UEMR in two centers between June/2015 and May/2018. UEMR was performed using a standard colonoscope. The rectal lumen was deflated and water was infused using an irrigation pump until complete filling of the lumen was achieved. All gas pockets in the operative field were evacuated. No submucosal injection was performed. Board-certified pathologists assessed histopathologic findings (histologic grade, status of resected margins, depth of invasion, lymphovascular invasions).

**Results** Over 23 months, 11 patients – 9 female (81%), mean age 55,81 years (range from 30 to 73 years) with 11 lesions (mean size 0,7 mm, range from 0,3 to 1,2 mm) underwent UEMR for small nNETs. 9 patients (81%) with G1 nNET and 2 patients with G2, all of them infiltrating the submucosa and only one restricted to mucosa. No patient had any vascular or perineural invasion. All lesions removed en bloc. 8 resections (80%) had free margins. Two patient had deep margin involvement; one of them had negative biopsies in the endoscopic surveillance. The other one lost to follow-up. No perforations or delayed bleeding occurred.

**Conclusions** In this small series, the results suggest that UEMR may be an effective and safe alternative method for small nNETs without adverse event and high en bloc and R0 resection rates.

ePP125 ENDOSCOPIC FULL THICKNESS RESECTION OF COLORECTAL LESIONS WITH THE FULL THICKNESS RESECTION DEVICE: CLINICAL EXPERIENCE FROM TWO REFERRAL CENTERS IN GREECE

**Authors** Velegarakis M1, Trikola A2, Vasiliadis C2, Fragaki M2, Mpitouli A1, Dimas I1, Giannikaki E1, Kapranou A2, Kordelas A1, Stefanidis G2, Paspatis GA1

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**DOIs**

1.10.1055/s-0039-1681668

**Aims** Endoscopic full thickness resection (EFTR) is a novel invasive treatment for colorectal lesions not resectable by conventional endoscopic techniques.
This study is the first report of clinical experience with the Full Thickness Resection Device (FTRD) among referral centers in Greece, assessing EFTR efficacy and safety.

**Methods** We conducted a retrospective analysis of the first 15 patients treated with FTRD in Greece from October 2015 through September 2018. The indications included difficult adenomas (non-lifting and/or at difficult locations), early adenocarcinomas, and subepithelial tumors. Primary endpoints were technical success (macroscopically complete, en bloc resection) and R0 resection (histologically complete resection).

**Results** Technical success and R0 resection were achieved in 12 of 15 procedures (80%). In 7 patients with difficult adenomas, technical success and R0 resection occurred in 85.7%. In the subgroup with carcinomas (n = 3), technical success and R0 resection rate was 66.6% while in the subgroup with subepithelial tumors (n = 5) the rate was 80%. In general, technical success and R0 resection were decreased significantly for lesions > 20 mm vs. ≤ 20 mm (33.3% vs. 91.6%) and/or localized in the rectum vs. distal and proximal colon (50% vs. 84.6%). No significant difference was observed between the lesions previously treated endoscopically and the ones non-treated. In 15 patients a total of three adverse events occurred (20%). One of the patients underwent laparoscopic appendectomy due to EFTR around the appendix. Recurrent abdominal pain of unknown cause and minor bleeding were additionally observed in 2 patients.

**Conclusions** Our study showed favorable results concerning EFTR feasibility, efficacy, and safety among Greek patients, especially for lesions ≤ 20 mm and/or localized in distal and proximal colon. Technical success, R0 resection and adverse events rates are comparable with data reported in literature. Further larger studies are needed to define the clinical benefit and long-term outcomes of EFTR in selected patients.

**ePP126 UNDERWATER ENDOSCOPIC MUCOSAL RESECTION – A PROSPECTIVE COHORT STUDY**

**Authors** Fernandes J1, Araújo T2, Ramos R1, Vicente C1, Tristan J1, Lucas F3, Canena J4, Lopes L2,5,6, Casteleiro C1

**Institute** 1 Gastroenterology, Centro Hospitalar Cova da Beira, Covilhã, Portugal; 2 Gastroenterology, Hospital de Santa Luzia, Viana do Castelo, Portugal; 3 Serviço de Medicina do Hospital de Cascais, Cascais, Portugal; 4 Gastroenterology, Nova Medical School/FCML da UNL, Lisbon, Portugal; 5 Life and Health Sciences Research Institute (ICVS), School of Medicine, University of Minho, Braga, Portugal; 6 ICVS/3B’s – PT Government Associate Laboratory, Braga/Guimarães, Portugal

**Aims** Underwater endoscopic mucosal resection (uEMR) is a recent endoscopic technique in which water (exclusively) is instilled in the colonic lumen, causing its distension. There is a submucosal floating effect and the muscularis propia stays away because of its greater density, which precludes the need for injection. With this study we intend to evaluate the efficacy and safety of uEMR in the resection of colonic lesions.

**Methods** This was a prospective study of 2 centers, between August 2016 and October 2017, including consecutive patients with colonic lesions referred for EMR. All the lesions were exclusively removed by uEMR. Patients underwent colonoscopy 4 – 6 months post uEMR. The main outcomes were technical success, complications and recurrence at short-term follow-up.

**Results** 32 patients, mean age = 71.90 (SD ± 9.72), 56.25% male (n = 18). 40 lesions were resected, mean size = 29.65 mm (min 10, max 70) of which 35% were located in the ascending colon and 22.5% in the rectum. The lesions were of type 0-IA in 72.5% (n = 29) and the remainder of type 0-IIa+Is. uEMR was en-bloc in 14 lesions and piecemeal in the others. The technical success was 92.5% (n = 37). The mean duration of uEMR = 22.7 minutes (min 5, max 130). Histopathology showed 40% (n = 16) of lesions with high grade dysplasia, 7.5% (n = 3) with intramucosal adenocarcinoma foci and 1 patient with a focus of invasive adenocarcinoma. Five haemorrhages occurred during uEMR, all treated endoscopically; no other adverse events occurred. In the endoscopic review of the 37 resected lesions 1 patient presented recurrence, which was managed successfully by endoscopy.

**Conclusions** EMR has been shown to be safe, easy to perform and effective in removing colonic lesions, and has a low rate of recurrence. This technique may be an alternative to conventional EMR, and randomized studies comparing the two techniques are needed.

**Saturday, April 6, 2019 – 10:30 – 11:00**

**Colonic polyps: characterization**

**ePP127 CAN WE APPLY THE ‘DETECT-AND-LEAVE’ STRATEGY FOR DIMINUTIVE POLYPS OF THE RECTO-SIGMOID?**

**Authors** Nakhl A1, Ennaifer R1, Hemdani N1, Bouchabou B1, Ben Romdhane H2, Ben Nejma H1

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**DOI** 10.1055/s-0039-1681670

**Aims** The size of colorectal polyps is one of the factors that determine colorectal cancer risk. The prevalence of advanced histological signs (villous contingent, or high grade dysplasia, or cancer) in small polyps is relatively low. ESGE recommends a ‘detect-and-leave’ strategy for very small (≤ 5 mm) polyps of the recto-sigmoid and whose appearance is suggestive of a hyperplastic polyp. The aim of our study is to evaluate the feasibility of this strategy by investigating the prevalence of advanced histological signs in diminutive polyps of the recto-sigmoid.

**Methods** A retrospective study of 222 patients in a Tunisian center between 2010 and 2017 was performed. Patients records who had a colonoscopy with polypectomy were collected. The histological features of diminutive polyps of the recto-sigmoid have been specified.

**Results** We included 222 patients with 322 polyps. The mean age was 61 years [22 – 90] with male predominance (SR H/F = 1.46). Main indications for colonoscopy were: chronic constipation and/or diarrhea (n = 110), rectal bleeding (n = 63) and abdominal pain (n = 42). The colonoscopy was complete in 60%. The preparation was considered sufficient (Boston score ≥ 7) in 41% of cases. Depending on the size, polyps were classified: diminutive (≤ 5 mm, n = 216), small and medium (6 – 9 mm, n = 51), large (10 – 19 mm, n = 42), giants (≥ 20 mm, n = 13). Forty-eight polyps were diminutive and located on the rectosigmoid. They were adenomatous (60%, including 17% tubulo-villous) or hyperplastic 26% or carcinomatous (4%). Dysplasia was found in 60% of cases including 7% of high grade.

**Conclusions** Advanced histological signs within diminutive polyps of the recto-sigmoid are specific. The ‘detect-and-leave’ strategy can only be applied in expert centers where advanced endoscopy techniques are mastered.

**ePP128 CONCORDANCE AND ITS ASSOCIATED FACTORS BETWEEN ENDOSCOPIC AND PATHOLOGIC DIAGNOSIS IN PATIENTS WITH SUSPECTED SSESSILE SERRATED ADENOMA/POLYP**

**Authors** Kim HW1, Park SB1, Kang DH2, Choi CW1, Kim SJ1, Nam HS1, Ryu DG1

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**DOI** 10.1055/s-0039-1681671
Aims Sessile serrated adenoma/polyp (SSA/P) are known to be precancerous lesions with difficult detection. Endoscopic features of SSA/P are well presented in NICE and WASP classification, but they were often inconsistent with pathologic results. We aimed to evaluate the concordance and its associated factors between endoscopic and pathologic diagnosis in patients with suspected SSA/P.

Methods Among patients with endoscopic resection from January 2015 to June 2018 in PKUH, 129 patients (175 lesions) with suspected SSA/P and ≥ 10 mm size were enrolled. We retrospectively evaluated clinical and endoscopic findings, pathologic diagnosis in these patients.

Results Concordance between endoscopic and pathologic diagnosis of SSA/P was 33.7% (59/175). SSA/Ps showed a significant difference in size (p < 0.0001), shape (p < 0.0001), diffuse nodular surface (p < 0.012), focal nodular elevation (p < 0.023), depression (p < 0.012), ≥ 2 WASP criteria (p < 0.001), NICE type (p < 0.002), Kudo pit pattern (p < 0.0001) compared to hyperplastic polyps.

Conclusions Our results show that discrepancy between endoscopy and pathology in diagnosis of SSA/P was high. Large size, polypoid shape, irregular surface patterns, NICE type 2 and Kudo III/IV pit pattern can be helpful in endoscopic diagnosis of SSA/P. For overcome of this discrepancy, communication with pathologist and systematic endoscopic evaluation should be needed.

ePP129 SMALL COLORECTAL POLYPS: IS A SYSTEMATIC HISTOPATHOLOGICAL ASSESSMENT JUSTIFIED?

Aims Small polyps constitute the vast majority of colorectal polyps. The prevalence of advanced adenomas in this group of lesions is low. The ‘Detect-and-leave’ strategy is discussed for diminutive polyps (≤ 5 mm), given the induced costs and the high proportion of non adenomatous lesions. The aim of this study is to determine the histopathological nature of resected diminutive (≤ 5 mm) colorectal polyps and to evaluate the interest of a systematic histopathological assessment.

Methods Consecutive patients who underwent polypectomy for small colorectal polyps during a 12-month period (2017), were included in this retrospective study.

Two groups were defined: Group 1 for small polyps [range 6–10 mm] and group 2 for diminutive polyps. Endoscopic and histopathological data were analyzed.

Results During the year of the study, 116 colorectal polypectomies were performed for 74 patients with a mean age of 62 years [22–87 years] and a sex ratio (M/F) of 2.08. A single polyp was detected in forty-six patients (39.6%). Polyps sat mainly in the rectum (29.3%). They were sessile in 81.1% (n = 94), pedunculated in 10.3% (n = 12) and flat in 8.6% of cases (n = 10). The average size of polyps was 4.59 mm [2–10]. Diminutive polyps were prevailing (71.5% of cases, n = 83). In the first group: 28 polyps (84.8%), were adenomatous polyps referring to histopathological assessment. In the second group: 50 polyps (60.2%) were adenomatous and 30 (36.1%) were hyperplastic. The diagnosis of adenomas was less frequent in the group of diminutive polyps referring to histopathological assessment. In the second group; 50 polyps (60.2%) were adenomatous and 30 (36.1%) were hyperplastic adenomatous polyps referring to histopathological assessment.

Conclusions Our series shows a significant rate of adenomas among diminutive polyps. Thus, the ‘detect-and-leave’ strategy must be reserved for expert endoscopists with a high level of confidence using high definition endoscopy and chromoendoscopy techniques.
proven. The patients were examined periodically after the initial treatment and found to be in good general condition, with no recurrence during the 2 years period of follow up II 72 patients. A relapse of dysphagia was noted in 8.

Conclusions Plummer Vinson syndrome is uncommon nowadays, it affect mainly a middle aged white women. This experience indicates that endoscopic bougienage is safe, effective and relatively easy to perform in patients with a esophageal cervical stenosis. This syndrome has been identified as a risk factor for developing squamous cell carcinoma of upper gastrointestinal tract and then we have to include theses patients in surveillance program.

ePP132V BOUGIE CAP IN THE TREATMENT OF ESOPHAGEAL PEPTIC STRICTURE

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Introduction and aims Various methods are available for endoscopic treatment of benign stenosis in the upper gastrointestinal tract. The most common is the sequential use of the of Savary-Gillard bougies after passing a guide-wire through the stenosis. The main problem of this method is the lack of direct visual control of the bougienage procedure. The Bougie caps are single use caps of different sizes that can be attached to an endoscope. The bougienage is carried out by advancing the endoscope through the stenosis while allowing good visualization of the surrounding tissue.

Our aim was to present our first experience of stricture dilation with the Bougie cap. We selected a 58-year-old male with a peptic stricture, already submitted to multiple dilations, with persistent dysphagia.

Methods Our patient presented an esophageal stenosis with an estimated luminal diameter of 4 mm that could not be passed with a 5,4 mm gastroscope. The 8 mm Bougie Cap was attached to the 5,4 mm gastroscope tip and placed proximally to the stricture. A nitinol guidewire was advanced through the cap surpassing the stricture. The bougienage was accomplished by advancing the scope through the stenosis while allowing good visualization of the surrounding tissue.

The procedure was sequentially repeated with a 10 mm Bougie cap (5,4 mm gastroscope) and with a 12 mm Bougie cap (9,2 mm gastroscope).

Inspection without Bougie Cap was done in the end of the procedure. The procedure completion with a 14 mm and 16 mm Bougie cap was scheduled 3 weeks later but a 5 mm stricture was recognized and the previous sequence was made (8, 10 and 12 mm Bougie caps).

Results There were no immediate or delayed complications in both procedures. Procedure time was 31 minutes in the first exam and 16 minutes in the last.

Conclusions Bougie cap is a safe and easy new therapeutic method for oesophageal benign strictures under direct visualization.

ePP133 ENDOSCOPIC SUTURING IS FEASIBLE FOR TREATMENT OF LOW COLORECTAL ANASTOMOTIC LEAK – EXPERIMENTAL STUDY

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Aims The aim of our study was to assess the feasibility of endoscopic repair of anastomotic leak on animal model. Secondary aim was to evaluate whether this technique prevents intraabdominal sepsis.

Methods Model of low colorectal anastomotic leak was introduced in 28 male pigs. Laparoscopic low anterior resection was performed and the anastomosis created with 28 mm circular stapler after removing half of the staples.

Fourteen pigs had an endoscopic anastomotic repair with OverStitchTM 2 days later. A double-channel endoscope was introduced and defect closed with 2/0 prolene and secured with original knotless fixation. Three-grade scale (I – closed completely, II – closed with visible gaps, III – closure not possible) was used to assess the completion of closure. The signs of intraabdominal septic complications – IASC and anastomotic healing including burst test were assessed after animals being sacrificed on 9th postoperative day. Fourteen animals with no treatment were included in control group. Chi square test was used to compare both groups.

Results Endoscopic closure was technically possible in all 14 cases (gr. I – 11, gr. II – 3 and gr. III – 0) with mean procedure time of 31 (19 – 70) min. Two animals from suture group died due to peritonitis on 8th and 9th postoperative day. Overall IASC rate was however significantly lower compared to the control – 5/14 vs. 11/14 (p = 0,022). The autopsy confirmed healed anastomosis with no visible defect in 10/14 case in Apollo vs. 2/14 in control group (p = 0,023). The burst test performed in 10 healed Apollo cases confirmed sufficient closure with mean pressure of 200 (80 – 300) mm Hg.

Conclusions OverStitchTM endoscopic suturing is technically feasible for repair of low colorectal anastomotic leak. This technique reduced the rate of intraabdominal septic complications. Supported by AZV 16 – 31806/A, MO 1012.

ePP134 EFFICACY OF ENDOSCOPIC TREATMENT OF POST-SLEEVE GASTRECTOMY FISTULAS ACCORDING TO THE RADILOGICAL TYPE

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Aims The originality of this study relies on the evaluation of the effectiveness of the endoscopic internal drainage (EID) according to the type of fistula.

Methods The type of fistula was classified initially according a CT scan with oral opacification: fistula without a communicating abscess (Type I), fistula with a communicating abscess (Type II), fistula with an abscessed sub- and supra-diaphragmatic communicating collection (Type III). Treatment algorithm consisted of the insertion of a naso-jejunal feeding tube (NJFT) for Type I fistulas and the placement of a NJFT with EID with or without surgical drainage depending on the septic status for type II and III fistulas.

Results Forty-nine patients were included. The clinical success rate of the procedure with fistula healing was 100% in the group I, 96% in the group II and 12% for group III (p = 0,001). Mean time for diagnosis of the fistula was significantly higher in type III compared to type I and type II (p = 0,04).

The mean estimated size of the defect was higher in type II: 11.2 mm and III: 10 mm versus type I: 2.8 mm (p = 0,001). The average number of scheduled endoscopic sessions were: 2, 2.7 and 5.2 for type I, II, and III, respectively (p = 0,001). The number of unscheduled reinterventions was also significantly higher in type III (p = 0,03). The NJFT was left in place for a significantly longer duration in type III (136 days) compared to type I (13,3) and II (49) (p = 0,001).
Conclusions This study shows that proper characterization of the type of fistula before the endoscopic treatment of post-sleeve fistulas could improve the efficacy of the endoscopic treatment.

**ePP135 USE OF SELF-EXPANDING METALLIC STENTS IN THE MANAGEMENT OF ESOPHAGEAL LEAKS AFTER SURGERY**

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**DOI** 10.1055/s-0039-1681678

**Aims** Esophageal leaks are severe complications after surgery. The use of endoscopic self-expanding metallic stents is a valid option. Our aim was to evaluate the usefulness of the stents in a third level referral center.

**Methods** Retrospective study including patients with esophageal leaks after surgery who received self-expanding metallic stents (June 2011 to December 2017).

**Results** We included 36 stents in 24 patients. There were 13 men (54%). The mean age was 56.8 ± 17.6 years (25 – 86). The indications for surgery were: neoplasms (15; 62,5%), bariatric (7; 29,2%), antireflux (1; 4,2%) and paraesophageal hernia (1; 4,2%). The mean time between the diagnosis of the leak and stent placement was 1.52 ± 3.06 days (1 – 12). In 17 patients (71%) the stent was placed within the first 24 hours. Resolution of the leak was observed in 19 cases after stent removal. The rest needed re-stenting.

The rate of successful endoscopic treatment was 83%. The mean number of stents needed was 1.47/patient. The mean time needed was 57 day/patient, and 41.7 days/stent.

We observed one complete distal migration (the stent was replaced endoscopically) as early complication (≤48 h). The rate of late complications (>48 h) was 41.7% (15/36): 7 partial distal migrations (4 were replaced and 3 were removed because the leak was closed); 3 migrations into the stomach (2 were replaced and the leak was closed in the other one); 2 bleeding events due to ulcers secondary to the stent (the stents were removed and no additional therapy was needed); 2 cases of intrastent overgrowth (one was removed, the other remained); 1 migration into mediastinum (endoscopically replaced).

**Conclusions** Self-expanding metallic stents are useful in the management of esophageal leaks after surgery. In most of the cases the leak is solved and new surgeries are avoided. The main complication is distal migration, but endoscopic replacement or removal is feasible.

**ePP136 WIRE AND MAGNET SEPTOTOME, A NEW METHOD FOR ENDOSCOPIc LEAK-FREE SECTION OF SEPTA IN THE GI TRACT: PRELIMINARY RESULT OF A PILOT ANIMAL STUDY**

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**DOI** 10.1055/s-0039-1681679

**Aims** Treatment of symptomatic mid- or distal- esophageal diverticulum is challenging. The rationale of the endoscopic treatment is its marsupialisation into the esophagus and/or treatment of underlying motility disorders. Section of the septum carries the risk of bleeding and perforation, the latter being potentially prevented by the use of magnets or sutures endoscopically performed at the bottom of the diverticulum.

**Methods** We developed a device made of two round shape magnets of 19 mm of diameter, linked by a self-retractable surgical wire of up to 15 cm. The magnets are implanted level with the bottom of the diverticulum on both sides of the septum, while the wire turns around the septum (figure 1). The self retractable wire induces a progressive ischemia, leading to a necrosis of the tissue and its progressive section.

**Results** We created surgically an artificial septum in the pig stomach. Two weeks later, the magnets linked with the retractable wire were implanted. The following clinical evolution of the pig was uneventful. Seven days after implantation, an endoscopy confirmed that the progressive retraction of the wire had induced a nearly complete cut of the created septum by pressure necrosis induced by the magnets. The tissue was then explanted. The total length of the septum cut by the wire and the magnets is 25 mm long with no leakage at the bottom of the septum (see figure 2).

**Conclusions** This proof of concept animal testing shows that a new endoscopic device made of magnets linked with a retractable wire may allow tissue apposition and section by pressure necrosis using a single instrument placed over a single session. Besides esophageal diverticula, it might also find application in the creation of anastomosis.

**ePP137 DO WE NEED ENDOSCOPIC ULTRASONOGRAPHY FOR THE WORKUP OF PATIENTS WITH ACHALASIA?**

**Authors** Barret M1, Oumrani S2, Roseau G2, Leblanc S2, Prat F2, Chaussade S2

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**DOI** 10.1055/s-0039-1681680

**Aims** To assess the clinical contribution of EUS findings in achalasia and other obstructive esophageal motility disorders.

**Methods** We conducted a single centre retrospective study at a tertiary referral centre. We included all patients with an endoscopic ultrasonography for the workup of a suspected secondary esophageal motility disorder from January 2012 to December 2017.

**Results** Sixty-nine patients were included, 52% were men, with a median (±SD) age of 61 ± 14 years. Median (±SD) Eckardt score at time of the EUS was 7 ± 2. Twenty patients had type I achalasia, 27 had type II achalasia and 9 had type III achalasia. Two patients had an esophagogastric junction outflow obstruction syndrome (EGJOS), 5 had a jackhammer esophagus, 6 had distal esophageal spasm (DES). EUS was normal in 26 (38%) patients, and showed an esophageal wall thickening in 43 (62%) patients. The inner circular muscle layer was the most frequently thickened, with a mean (±SD) thickness of 2.8 ± 2 mm. Three cases of secondary achalasia were diagnosed: 2 esophageal carcinomas and one eosinophilic esophagitis, all three diagnosed at mucosal biopsies. Esophageal wall thickening was not significantly associated with the type of esophageal motility disorder or achalasia subtype, and there was no statistical correlation between the presence of a wall thickening at EUS and therapeutic outcomes after any of the achalasia treatments.

**Conclusions** In our work, the presence of an esophageal wall thickening was not predictive of achalasia subtype or treatment outcome. The contribution of endoscopic ultrasonography to the workup of esophageal motility disorders seems limited.
ePP138  INEFFECTIVE ESOPHAGEAL MOTILITY IS ASSOCIATED WITH A WORST CLINICAL OUTCOME AFTER TRANSORAL INCISIONLESS FUNDOPPLICATION

Authors  Testoni PA1, Mazzoleni G1, Distefano G1, Testoni SGC1, Antonelli M1, Toth E1, Agrawal A2, Amaro P3, Brink L4, Fischbach W5, Hünger M6, Koulaouzidis A2, Storan D1, Sheridan J1,2, Cullen G1,2, Mulcahy H1,2, Doherty G1,2

Preparation  sedation 2 ePoster Podium 7

Conclusions  (p = 0.019). after TIF, while 28/51 (54.9%) patients halved PPI or assumed the same dose. In the group of patients with a normal esophageal motility before TIF, 23/51 (45.1%) patients stopped PPI 6 months after TIF and patients with normal esophageal motility before TIF, using Fisher exact test. The clinical outcome of TIF was compared between patients with IEM before TIF and patients with normal esophageal motility before TIF, using Fisher’s exact test.

Results  IEM was present before TIF in 18/49 (36.7%) patients treated with Esophyx and 9/29 (31%) patients treated with MUSE. In the IEM group 5/27 (18.5%) patients stopped PPI 6 months after TIF, while 22/27 (81.5%) patients halved PPI or assumed the same dose. In the group of patients with a normal esophageal motility before TIF, 23/51 (45.1%) patients stopped PPI 6 months after TIF, while 28/51 (54.9%) patients halved PPI or assumed the same dose (p = 0.019).

Conclusions  IEM before TIF is statistically associated with a worst clinical outcome after the procedure.

Saturday, April 6, 2019  10:30 – 11:00
Preparation: sedation 2 ePoster Podium 7

ePP139  ANALGESIA WITH ENTONOX FOR COLONOSCOPY IN A COMMUNITY HOSPITAL

Authors  Dabos K1, Koulaouzidis A2

Preparation: sedation 2 ePoster Podium 7

Completion rates were similar in both groups (92.3% at the entonox group vs. 93.8% at the alfentanil group). Comfort scores were similar between the two groups. There were 26 failed colonoscopies in the entonox group and 28 in the alfentanil group. Only 2 patients without medication had incomplete colonoscopies Of the 34 patients who received alfentanil after having tried entonox 26 completed the procedure and 8 did not. When completion rates were assessed there was a statistically significant difference in favour of the patients who received alfentanil (OR 4.84 CI 0.39 – 4.52 p < 0.028). Polyp detection rate in the Entonox group was 24.8% and in the alfentanil group was 32.4%. There was a trend towards higher detection rate with alfentanil (p = 0.078).

Conclusions  Patients opting for Entonox as analgesia should be aware that they might need additional analgesia and should have an established IV access. Furthermore Entonox should not be offered as a first line analgesia in non-screening colonoscopy.

ePP140  THE EFFECT OF SEDATION ON THE QUALITY OF UPPER GASTROINTESTINAL ENDOSCOPY

Authors  Storan D1, Sheridan J1,2, Cullen C1,2, Mulcahy H1,2, Doherty C1,2

Preparation: sedation 2 ePoster Podium 7

Patients opting for Entonox as analgesia should be aware that they might need additional analgesia and should have an established IV access. Furthermore Entonox should not be offered as a first line analgesia in non-screening colonoscopy.
The use of sedation appears to be more associated with factors related to the equipment/techniques used during colonoscopy than patient characteristics. Analysis was performed on the following variables: age in 10-year categories; body mass index (BMI) categories; gender; inpatient status; reason for procedure; time of day colonoscopy performed; previous total colonoscopy categories; chromoendoscopy used; high-definition equipment used; assistive technology used; intended endpoint; and intended endpoint reached.

Results

There were 1394 procedures where the results of all selected variables were known provided by 59 practitioners from 38 institutions: 71.0% of procedures used sedation. In order, the most associated variables were:

1. Use of high-definition equipment (76.3% vs. 55.5%, p < 0.0001).
2. Use of assistive technology (59.0% vs. 72.8%, p < 0.0001).
3. Female gender (78.8% vs. 62.2% male, p < 0.0001).
4. Longer retraction time (83.9% > 10 minutes vs. 65.1% 6–10 minutes and 66.7% < 6 minutes, p < 0.0001).
5. Use of chromoendoscopy (76.3% vs. 69.5%, p = 0.0051).
6. Younger patient age (78.0% 50–59 years vs. 67.6% 60–69, 68.1% 70–79, 69.4% ≥ 80, p < 0.0001).
7. Inpatient status (84.0% vs. 68.7% outpatient, p < 0.0001).

Conclusions

The use of sedation appears to be more associated with factors related to the equipment/techniques used during colonoscopy than patient characteristics.

ePP142 DOES THIRD-SPACE ENDOSCOPY PROVIDE PROMISING RESULTS FOR THE REMOVAL OF UPPER GASTROINTESTINAL SUBMUCOSAL TUMORS?

Authors

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DOI: 10.1055/s-0039-1681686

Aims Submucosal-tunneling endoscopic resection (STER) has been a promising technique for treating upper-gastrointestinal submucosal tumors (SMT) originating from the muscularis propria layer. In this study, we aim to present perioperative outcomes of 31 patients with SMTs who underwent STER procedure in a tertiary care center.

Methods

Between 2015-October and 2018-October, patients who underwent STER for removal of esophageal or gastric SMTs, were analyzed retrospectively from a prospectively kept database. Clinical, pathological and complication data were assessed.

Results

A total of 42 patients underwent STER and 30 were finally enrolled after excluding the patients who were lost to follow up. Female to male ratio was 11/19 and the mean age was 45.24 (25–65). Presenting symptoms included dyspepsia (47.6%), dysphagia (42.9%), and abdominal distention (9.5%).

Mean operative time was 61.7 minutes (15–180). In terms of localization, 18 (60%) patients had SMTs in esophagus, 3 (10%) in the antrum, 8 (26.7%) in the cardia, and 1 (3.3%) in the corpus. En bloc resection was achieved in all (100%) of the tumors. The mean diameter was 33.3 mm (10–82 mm). Histopathological results revealed that 25 (83.3%) patients had leiomyoma, 2 (6.7%) had gastrointestinal stromal tumor, 2 (6.7%) had pancreatic heterotopia, and 1 (3.3%) had granular cell tumor. In terms of perioperative complications, pneumoperitoneum occurred in 2 (6.7%) patients, mucosal laceration occurred in 1 (3.3%) patient and subcutaneous emphysema occurred in 1 (3.3%) patient, all of which are successfully managed without surgery. Mean hospital stay was 2.86 days (1–5days). No recurrence was observed during a mean follow-up of 25.4 months (6–30 months).

ePP144V INCOMPLETE MYOTOMY DUE TO EXTRAMUSCULAR DISSECTION DURING THE POEM: DESCRIPTION AND DETECTION OF A PROCEDURE FAILURE

Authors

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DOI: 10.1055/s-0039-1681685

Aims

Incomplete myotomy is rare during the POEM for achalasia. An extramuscular dissection can lead to this technique failure. We present a videocase and analyze the images for its detection.

Methods

Video review of a case of failed POEM in a patient with type 2 achalasia.

Results

During the tunneling phase of POEM, intense spasticity was observed in the lower esophageal sphincter area. It hindered the mobilization of the endoscope and entailed an increased risk of mucosal tear. Therefore, the myotomy was started without completing the tunnel, in order to partially relax this spasticity. Within the spastic area, a complete myotomy was observed. Dissection was continued observing an open space, similar to the subcardial area, but with abundant fatty tissue, vascularization and friability. The procedure was terminated although doubts about complete myotomy were raised. Clinical follow-up was suggestive of incomplete myotomy. Revisit of the video recording detected unintentional extramuscular dissection and incomplete myotomy. The observation of the margins of the myotomy is critical to detect this incidence.

Conclusions

1. Myotomy prior to complete tunneling of the submucosa may increase the risk of an extramuscular dissection.
2. Extramuscular dissection images can be misinterpreted as a complete myotomy.
3. The observation of the myotomy edges facilitates the detection of the extramuscular dissection.
4. Video documentation of all cases and revision of failed cases is crucial to analyzed failed POEM procedures.

Abstracts | ESGE Days
Conclusions According to this case series, STER appears to be a safe and effective method considering its low complication rates and favorable outcomes. Patients had a shorter hospital stay compared to surgical procedures and their long-term follow-up results have revealed no recurrence of preoperative complaints or re-emergence of SMTs so far. This study suggests STER can be applied efficaciously for the treatment of SMTs though larger number of cases is needed for further research.

**Aims** In patients with ulcerative colitis (UC), sporadic neoplasms (SN) can also occur in addition to UC-associated colorectal cancer/dysplasia (UCAC). Recently, reports on endoscopic submucosal dissection (ESD) for UCAC and SN have been published. However, there is no consensus regarding ESD. We retrospectively evaluated the feasibility and safety of ESD for UCAC and SN.

**Methods** The subjects were 32 patients with 33 lesions who met the following criteria: diagnosed with a UC associated lesion; were in the remission phase and had well-circumscribed, single lesions with no dysplasia in the periphery. A comparative investigation by propensity score matching analysis was performed for investigating the
1. ESD treatment outcome, and
2. difference in treatment outcomes between the UC-ESD group (n = 33) and non-UC-ESD group (control: n = 751).

**Results:**
1. The rate of en bloc resection by ESD was 97%, R0 resection rate was 81.8%, mean tumour diameter was 28.4 mm, and mean procedure time was 70.6 min. The adverse events were perforation in 2 patients, and postoperative bleeding in 1 patient. Based on histopathological investigations after ESD, SN was confirmed in 25 lesions and UCAC was confirmed in 8 lesions. All the lesions suspected of being SN were indeed SN.
2. Using the propensity score matching analysis, 29 pairs were matched. Comparing treatment outcomes between the 2 groups, mean surgery time was significantly longer in the UC-ESD group (p = 0.0261). With respect to adverse events, although no significant difference was seen, the adverse events occurred only in the UC-ESD group.

**Conclusions** ESD for lesions with UC was feasible and safe. ESD is recommended as an optimal treatment for en bloc excision and accurate pathologic diagnosis. However, compared to non-UC-ESD, UC-ESD is very difficult due to severe fibrosis. For these reasons, UC-ESD should be required to be performed by expert who has endoscopic technique both diagnosis and treatment.

**ePP146 A RISK SCORING MODEL FOR THE PREDICTION OF DELAYED BLEEDING AFTER COLORECTAL ENDOSCOPIC SUBMUCOSAL DISSECTION**

**Aims** Delayed bleeding is an important adverse event after colorectal endoscopic submucosal dissection (ESD). We aimed to investigate the incidence and risk factors of delayed bleeding after colorectal ESD, and to develop a risk scoring model for predicting delayed bleeding.

**Methods** This retrospective multicenter study was performed at 5 centers. The derivation and validation cohorts comprised 1189 patients from 1 center and 415 patients from the other 4 centers. We investigated the incidence and risk factors of delayed bleeding. Then, we developed a risk scoring model for predicting delayed bleeding using the data of the derivation cohort. We validated the scoring system in the validation cohort.

**Results** Delayed bleeding occurred in 34 (2.9%) patients in the derivation cohort. In multivariate analysis, the risk factors of delayed bleeding were tumor location in the rectosigmoid colon (odds ratio [OR] 6.49, 95% confi-
The risk scoring model incorporating tumor location, tumor size, Conclusions The incidence of delayed bleeding increased in the validation cohort. When patients in the validation cohort were categorized into low- and high-risk groups, the incidence of delayed bleeding after colorectal ESD was higher in the high-risk group than in the low-risk group (4.2% vs. 1.9%). NCT03042578

Aims Cold snare polypectomy has shown its effectiveness for treatment of colorectal polyps and is increasingly being used. However, dedicated snares for cold snare polypectomy are still rare and no comparison of different wire techniques for this indication has yet been performed. Primary objective of the study was to compare the efficacy of two different wire techniques (coiled wire versus monofilament) for cold-snare polypectomy in a prospective randomized controlled trial.

Methods Consecutive patients undergoing screening or surveillance colorectoscopy were included. Once a polyp <12 mm in size was detected, cold snaring was performed. Eligible polyps were randomized (1:1) to be treated with either monofilament or coiled wire technique. Primary endpoint was histologically confirmed en bloc resection rate. Second endpoints include complication rate (bleeding and perforation) and satisfaction rates of the endoscopist and assisting nurse.

Results Polyp size, histology and location did not significantly differ between the different groups. Mean size of lesions resected with coiled wire technique was 5.4 mm (Range 2 – 11 mm), with monofilament wire technique 5.2 mm (Range 2 – 10 mm), p = 0.7. The overall rates of en bloc resection were 100% for both wire techniques. Satisfaction rates of endoscopist and assisting nurse were not significantly different between both groups. Also cold-snare polypectomy was easy to perform for inexperienced endoscopists.

Conclusions Cold snare polypectomy is exceptional effective for resecting colorectal polyps. This prospective randomized trial shows for the first time that no differences between various wire techniques exist. Therefore, both coiled and monofilament wires can successfully be used for cold snare polypectomy.

ePP149 ENDOCUFF VISION ASSISTED VERSUS STANDARD POLYP RESECTION IN THE COLORECTUM: A PROSPECTIVE RANDOMIZED STUDY (EVASTA STUDY)

Aims Cap assisted colonscopy (CAC) is frequently used in order to facilitate adenoma detection during endoscopy. However, data on how cap assistance influences resection of polyps is scarce. We aimed to evaluate the impact of a cap assistance (Endocuff vision device, EVD) on the resection time of colorectal polyps in patients undergoing routine colonscopy.

Methods A randomized, prospective trial in a university hospital in Germany was performed. A total of 250 patients were randomly assigned 1:1 to receive either a colonscope with the EVD (EVD arm) or standard colonscopy without the use of a cap (standard arm). Primary outcome was duration of polypectomy. Secondary outcomes were adenoma detection rate, cecum and ileum intubation time, procedural complications, patient satisfaction, and propofol dosage.

Results The usage of an EVD led to a significant reduction of the polypectomy time (81 vs. 54 seconds in standard vs. EVD arm; p = 0.001). The polyp and adenoma detection rate did not differ between both study groups. Endocuff assistance also resulted in a shorter cecum intubation time compared to the
standard group (7.4 vs. 9.6 minutes; p = 0.04). In contrast, no difference in withdrawal time or total colonoscopy duration was observed.

**Conclusions** Endocuff vision assisted colonoscopy reduces duration of polypectomy. The observed effect is assumed to be due to stable scope positions during resection. Further studies should investigate whether comparable effects can be considered with respect to other interventions such as clipping or biopsy sampling.

ePP150 APPLICATION OF TWO SCORES TO PREDICT AND STRATIFY THE RISK OF RESIDUAL OR RECURRING ADENOMA AFTER PIECEMEAL EMR OF NON-PEDUNCULATED COLORECTAL POLYPS

**Authors** Alexandrino G1, Dias Domingues T2, Martins Figueiredo L1, Lourenço LC1, Carvalho R1, Reis J1

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**DOI** 10.1055/s-0039-1681693

**Aims** In 15–20% of colorectal EMR residual or recurring adenoma (RRA) is found at follow-up colonoscopy. The SERT score was recently developed to identify lesions most likely to recur. The SMSA score predicts difficulty in achieving endoscopic success after polypectomy. Our aim was to evaluate and compare prospectively the efficacy of these scores in identifying individually for each lesion the risk of RRA.

**Methods** Consecutive piecemeal EMR of non-pedunculated colorectal polyps ≥15 mm performed between Mar/2017-Mar/2018 were included. For each lesion, SMSA and SERT scores were calculated. Patients underwent follow-up colonoscopy within 3–6 months. The efficacy of the scores to predict RRA at follow-up colonoscopy was calculated using chi-square and AUROC tests.

**Results** 158 piecemeal EMRs. Average lesion size: 25 mm (maximum: 50). RRA found in 17 (10.8%). Of these, 13 (76.5%) were successfully endoscopically treated. The AUROC scores for the presence of relapse were: SERT: 0.730 (p = 0.002); SMSA: 0.723 (p = 0.003). The negative predictive value of SMSA 2 for RRA was 100% and of the SERT 0 was 94%. It was possible to stratify (p = 0.002); SMSA: 0.723 (p = 0.003). The negative predictive value of SMSA 158 piecemeal EMRs. Average lesion size: 25 mm (maximum: 50). RRA during resection. Further studies should investigate whether comparable effects can be considered with respect to other interventions such as clipping or biopsy sampling.

**Conclusions** The SERT and SMSA scores are easy instruments to apply and effective to identify the individual risk of RRA for each lesion. The main value of these scores is the possibility to identify low-risk lesions, which could safely be monitored later (> 6 months), with a reduction in costs and burden for the patient.

Saturday, April 6, 2019 13:00 – 13:30 ERCP ePoster Podium 3

ePP151 COMPARISON OF EFFICACY AND SAFETY OF ERCP PROCEDURES IN PATIENTS OLDER VS. YOUNGER THAN AGE OF 80 YEARS BASED ON THE HUNGARIAN ERCP REGISTRY

**Authors** Orbán-Szilagyi Á1, Bakucz T1, Pécsi D1, Gödö S1, Altorjai T1, Czakó L1, Pakodi F1, Patai A1, Szepes Z1, Hegyi P1, Vince Z1, Győkeres T1

**Institute** 1 Medical Centre Hungarian Defence Forces, Department of Gastroenterology, Budapest, Hungary; 2 University of Pécs, Institute for Translational Medicine, Medical School, Pécs, Hungary; 3 University of Pécs, Division of Gastroenterology, First Department of Medicine, Pécs, Hungary; 4 University of Debrecen, Division of Gastroenterology, Second Department of Medicine, Debrecen, Hungary; 5 University of Szeged, First Department of Medicine, Szeged, Hungary; 6 Markusovszky University Teaching Hospital, Department of Gastroenterology and Medicine, Szombathely, Hungary

**DOI** 10.1055/s-0039-1681694

**Aims** Aging patients have several co-morbidities that might increase the risk of failure and complications of endoscopic retrograde cholangiopancreatography (ERCP). We have limited data on the efficacy and safety of ERCP in the elderly. In this study, we compared the success and complications of ERCPs in patients over and under the age of 80 years, based on the data of Hungarian ERCP Registry.

**Methods** It prospectively collects data on every major aspect (indication, cannulation, success, complications) of ERCPs performed in the contributing centers and contains a 30-day follow-up period.

**Results** Until now the registry contains 356 ERCPs performed in 289 patients over the age of 80 and 1459 ERCPs of 1134 patients in the younger group (mean age 85y vs. 61y). The rate of naive papilla was 66.1% vs. 66.2%. Majority of the ERCPs were performed because of biliary obstruction (36.7% vs. 35.7%), cholangitis (52.2% vs. 35.1%) and biliary stone disease (33.9% vs. 39.2%). Deep cannulation was achieved in 95.1% vs. 94.8% of all ERCPs. Complete clearance rate of (<10 mm) biliary stone extraction was 88.1% vs. 84.3%. Success of stent implantation in subhilar biliary stenosis was 98.3% vs. 98.5%. None of these showed significant difference.

**Conclusions** Based on our data, we can conclude that in the elderly ERCP is efficient and the rate of complications is not worse compared to the younger but the complications can potentially have a more serious outcome in the elderly.

ePP152 CORRELATION OF OBSTRUCTIVE SYMPTOMS AND RADIOLOGICAL FINDINGS WITH THE PRESENCE OF DUODENAL STENOSIS ON SIDE VIEWING ENDOSCOPY IN PATIENTS WITH MALIGNANT OBSTRUCTIVE JAUNDICE

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**DOI** 10.1055/s-0039-1681695

**Aims** ERCP may not be feasible due to duodenal stenosis (DS) in some patients with malignant obstructive jaundice (OJ). Predicting likelihood of DS can help anticipate and prepare for an alternative biliary drainage method like EUS-BD at the same sitting. We correlated the symptoms and radiological findings suggestive of gastric outlet obstruction (GOO) in these patients with DS on side viewing endoscopy (SVE).

**Methods** We retrospectively analysed our endoscopy database at a referral cancer centre in India. 65 patients with malignant OJ referred for an ERCP and who had clinico-radiological suspicion of DS underwent a pre-ERCP SVE as per unit protocol over 30 months. **Results** Gallbladder was the commonest primary site in 36 patients (55%). SVE was normal in 11 patients (17%), showed DS in 35 (54%) and 19 (29%) had duodenal infiltration or extrinsic compression without stenosis. 32 patients (49%) had symptoms of GOO (any one of vomiting, postprandial fullness or early satiety) of which 22 (69%) had DS on SVE. 51 (78%) had radiological signs suspicious for GOO (loss of fat planes with the duodenum-37, duodenal infiltration-8, gastric dilatation-6) of which 28 (55%) had DS. 23 patients had both symptoms and radiological signs of which 17 (74%) had DS. Symptoms of GOO significantly correlated with DS on SVE (P = 0.0089, Chi-Square). Suspicous radiological findings did not correlate with DS (P = 0.42, Chi-square). Presence of both symptoms as well as radiological findings also significantly correlated with DS (P = 0.0098 Chi-Square).
**Conclusions** Clinical symptoms suggestive of GOO predicted DS in patients with malignant OJ. Radiological suspicion alone without clinical symptoms was not significantly associated with DS. 54% of patients with clinicoradiological suspicion of DS had DS on SVE precluding an ERCP. Assessment of clinicoradiological features suggestive of GOO can help anticipate non-feasibility of ERCP so that one can be prepared for alternative method for biliary drainage.

**ePP153 ENDOSCOPIC TRANSPAPILLARY GALLBLADDER DRAINAGE FOR MANAGEMENT OF THE PATIENT WITH ACUTE CALCULUS CHOLECYSTITIS WHO WAS UNSUITABLE FOR URGENT CHOLECYSTECTOMY**

**Authors** Kim TH, Chon HK, Ko BM, Goong HJ, Lee MS

**Institute** 1 Wonkwang University College of Medicine and Hospital, Iksan, Korea, Republic of

**DOI** 10.1055/s-0039-1681696

**Aims** Endoscopic transpapillary gallbladder drainage (ETGBD) is useful modality for patients who are no candidate for urgent cholecystectomy. We aim to evaluate the safety and efficacy of ETGBD by using either endoscopic traspapillary gallbladder stenting (ETGBS) or endoscopic nasogallengadder drainage (ENGBD) for managing acute cholecystitis (AC).

**Methods** From July 2014 to November 2018, 171 patients (77 females; mean age 72.8 ± 14.1 years) with AC who tried to perform ETGBD were retrospectively reviewed. Their technical success rate, clinical success rate, adverse event, clinical progress was evaluated. In ETGBS group, long term stent patency, recurrence of AC or occurrence of cholelithiasis were also analyzed.

**Results** The technical success rates and clinical success rate for ETGBD was 94.2% (161/171), and 99.3% (160/161), respectively. The adverse event rates occurred 6.4% (mild pancreatitis:3, post EST bleeding:3, bile duct hemorrhage:1), but all were treated by conservative management and endoscopic hemostasis. The clinical courses of all patients were as follows: two (1.1%) died of pneumonia aggravation, fifty-nine (34.5%) of interval cholecystectomy, and 99.3% (160/161), respectively. The adverse event rates occurred 6.4% (mild pancreatitis:3, post EST bleeding:3, bile duct hemorrhage:1), but all were treated by conservative management and endoscopic hemostasis. The clinical courses of all patients were as follows: two (1.1%) died of pneumonia aggravation, fifty-nine (34.5%) of interval cholecystectomy, and 99.3% (160/161), respectively. The adverse event rates occurred 6.4% (mild pancreatitis:3, post EST bleeding:3, bile duct hemorrhage:1), but all were treated by conservative management and endoscopic hemostasis.

**Conclusions** ETGBD is technically feasible and effective therapy for patients who are not candidate for urgent cholecystectomy. Successful ETGBS patients had rarely developing cholelithiasis but fewer recurrences of AC. And also, ETGBS may be useful alternative treatment option for high-risk patients who are not candidate for urgent cholecystectomy and ENGBD for managing acute cholecystitis (AC).

**Saturday, April 6, 2019 13:00 – 13:30 EUS therapeutic miscellaneous ePoster Podium 5**

**ePP156 RISK OF RECURRENCE AFTER ENDOSCOPIC SUBMUCOSAL DISSECTION FOR ADVANCED COLORECTAL NEOPLASIA: SINGLE CENTER EXPERIENCE**

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**DOI** 10.1055/s-0039-1681697

**Aims** Endoscopic submucosal dissection (ESD) is known as a curative treatment option for colorectal tumor. A limited number of studies have evaluated the recurrence rates of ESD for advanced colorectal neoplasia. The aim of this study was to evaluate the recurrence rates and risk factors of recurrence after ESD for advanced colorectal neoplasia.

**Methods** Colorectal ESD was performed on 299 colorectal tumor in 290 patients at SoonChunHyang Bucheon Hospital between March 2003 and December 2014. We defined advanced colorectal neoplasia including high grade dysplasia adenoma (HGD) and early-stage colorectal cancer (CCR). Excluding the patients without first follow-up colonoscopy, we totally enrolled 125 patients who underwent colorectal ESD for HGD and ECC, excluding the patients without first follow-up colonoscopy. First follow-up colonoscopy was performed after 3–6 months in cases of complete resection and after 3 months in cases of incomplete resection. We retrospectively analyzed clinical outcomes and recurrence rates and risk of recurrence after colorectal ESD for HGD and ECC.

**Results** The overall rates of en bloc resection, histologic complete resection, and curative resection (CR) rates were 85.6%, 76.8%, and 68.8%, respectively. During the follow-up period (42.9 ± 36.9 months, mean ± SD), all enrolled patients remained free of distant metastasis. Local recurrence occurred in 2 patient (1.6%) undertaken non-CR. In addition, piecemeal resection and deep margin positivity showed statistically significant risk factors of local recurrence.

**Conclusions** Colorectal ESD is effective and safe for resection of colorectal tumor with advanced histology, with a favorable long term outcome. However, en bloc resection and curative resection is necessary to reduce local recurrence for colorectal tumor with advanced neoplasia.

**Saturday, April 6, 2019 13:00 – 13:30 EUS therapeutic miscellaneous ePoster Podium 5**

**ePP157 EUS-GUIDED TANS-RECTAL TREATMENT FOR SYMPTOMATIC PELVIC COLLECTIONS: PUNCTURE/ASPIRATION OR DRAINAGE? RESULTS FROM A LARGE MONOCENTRIC STUDY**

**Authors** Gonzalez JM, Guingand M, Gasmi M, Barthet M

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**DOI** 10.1055/s-0039-1681698

**Aims** Abdomino-pelvic symptomatic collections have recently been managed endoscopically by EUS-guided transrectal drainage (EUS-TRD). We present the result of our experience. The main objective was to elucidate the acute efficacy of EUS-TRD (symptoms resolution). The secondary objectives were to document the morbidity, the recurrence (after one month), and to identify predictive factors for failure (persisting of symptomatic collection despite drainage +/- need for surgery).

**Methods** This was a retrospective monocentric observational study conducted from 2004 to 2018 in a tertiary center. The patients referred for pelvic symptomatic collection (painless or abscess) confirmed by imaging (CT-scan or MRI), whom underwent EUS-TRD were included.

The procedures were realized with therapeutic linear EUS-scopes under C02, performing either a aspiration + antibiotics injection, or drainage.

**Results** 73 patients were included and divided in two groups: 1/patients undergoing puncture/aspiration/Amikacin injection (n = 30; 41%); 2/patients undergoing a drainage (n = 43; 58.9%) with plastic stents/drain (95.3%) or metal stents (4.6%).

The mean age was 42.5 years [12 – 87]. The collection was peri-rectal in 67%, perianal in 28% and perisigmoid in 3.2%. In 55%, the abscess was post-operative and in 45% due to medical diseases. The mean size of the collections was 48.9 mm [8 – 120]. It was 33 +/- 17 mm in group 1 versus 67 +/- 21 mm in group 2 [p<0.0001], influencing probably the choice of method.
The technical success was 100%. The clinical success was achieved in 95.8% of patients (70/73). It was 82.3% (28/30) in group 1 versus 97.7% (42/43) in group 2 (NS). There was no per or post operative complication. During a median follow-up of 7.5 years [4.4 – 8.9], no patient had any recurrence of the collection.

Conclusions EUS-TRD in treatment of pelvic abscesses is highly effective and safe, whatever the approach applied (aspiration or drainage) without recurrence during long term follow-up.

ePP158 MULTICENTER RETROSPECTIVE CASE SERIES ASSESSING ADVERSE EVENTS ASSOCIATED TO THE INDWELL AND STENT RETRIEVAL OF LUMEN APPOSING METAL STENTS

Authors Bazaga S1, Yaiza Carbajo A1, Javier García-Alonso F1, Martí D2, Sánchez Soler V1, Martínez Moreno B3, Ramón Aparicio Tormo J3, Pedraza Sanz R1, Villanueva Hernández R3, Vila Costas J4, Vázquez Sequeiros E1, Jordán Castro A4, Jiménez Palacios M4, Pérez-Miranda M1

Institute 1 Hospital Universitario Rio Hortega, Valladolid, Spain; 2 Hospital Clínico Universitario de Valencia, Valencia, Spain; 3 Hospital General Universitario de Alicante, Alicante, Spain; 4 Hospital General Universitario Castellón, Castellón, Spain; 5 Hospital de Avila, Avila, Spain; 6 Complejo Hospitalario de Navarra, Pamplona, Spain; 7 Hospital Ramón y Cajal, Madrid, Spain; 8 Hospital del Bierzo, Ponferrada, Spain; 9 Hospital Universitario de León, León, Spain


Aims The primary aim was to describe all LAMS related adverse events presenting during stent indwell and retrieval. Secondary aims were describing the relationship between indwell time, therapeutic target and adverse events.

Methods Multicenter retrospective case series using standardized case report forms including all consecutive patients who received a LAMS (Axios) to reach extraluminal structures from January to December 2017.

Results We included 179 patients from 7 centers (range 4 – 68 cases/center), 122 (68.2%) men, mean age 64.3 years (SD: 15.8).

Pancreatic fluid collections (walled-off necrosis 32.4% and pseudocysts 17.3%) were the most frequent indications as shown in table 1, which also includes the proportion of stents retrieved, indwell time and adverse events during stent retrieval.

During stent indwell adverse event appeared in 19 (10.9%) patients, 8 stent obstructions, 7 (3.9%) gastrointestinal bleeds, including one death in hepatic artery pseudoaneurism presenting 9 months after placing a gallbladder drainage, 2 perforations and 2 symptomatic migrations. There were another 6 asymptomatic migrations.

LAMS were not removed in 86 patients (48%), mostly in permanent intended stents, 46 (53.5%), and patients lost to follow-up,18 (20.9%). Stents were retrieved in 93 patients. We observed 5 (5.4%) adverse events during stent retrieval, 3 hemorrhages managed endoscopically and 2 perforations, one managed endoscopically with OTSC clip, and one requiring surgical treatment. We did not observe an association between indwell time and the presence of adverse events (p = 0.67).

Table 1 Indications

<table>
<thead>
<tr>
<th>Indication</th>
<th>№ of procedures n (%)</th>
<th>Removed stents n (%)</th>
<th>Delay until stent retrieval (weeks) med (IQR)</th>
<th>Complications during retrieval n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pancreatic fluid collections 89 (49.7%)</td>
<td>70 (78.7%)</td>
<td>8.7 (4.9 – 13.3)</td>
<td>3 (4.3%)</td>
<td></td>
</tr>
<tr>
<td>Gallbladder-drainage 26 (14.5%)</td>
<td>4 (15.4%)</td>
<td>3.5 (2.7 – 8.7)</td>
<td>1 (25%)</td>
<td></td>
</tr>
<tr>
<td>Gastrojejunostomy 16 (8.9%)</td>
<td>2 (12.5%)</td>
<td>0</td>
<td>1 (60%)</td>
<td></td>
</tr>
<tr>
<td>Choleodoceoduodenostomy and Hepatico- 26 (14.5%)</td>
<td>4 (15.4%)</td>
<td>1.4 (1.1 – .36)</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

Conclusions Our study presents a low risk of LAMS related adverse events, despite extended indwell time compared to current recommendations in pancreatic fluid collections.

ENDOSCOPY 2019; S1: S1-S273 ePoster Podium 6

ePP159 THE EFFECTIVENESS OF EARLY ENDOSCOPIC ULTRASOUND-GUIDED DRAINAGE FOR POSTOPERATIVE FLUID COLLECTION AFTER PANCREATOBILARY SURGERY

Authors Lee SS1, Lee H1, Oh D1, Song TJ1, Park DH1, Lee SK1, Kim MH1

Institute 1 Gastroenterology, University of Ulsan College of Medicine, Asan Medical Center, Seoul, Korea, Republic of


Aims Postoperative abdominal fluid collection (PAFC) is a potentially fatal complication. Recently, EUS-guided drainage has been shown an effective way to treat PAFC more than 4 weeks old. The aim of this study was to assess the usefulness of earlier drainage of PAFC by using EUS-guidance.

Methods The data of patients who had undergone EUS-guided PAFC drainage between July 2008 and January 2018 was retrospectively analyzed. Data of EUS-guided PAFC drainage was obtained from prospective collected EUS database of our institute and reviewed of patients’ clinical parameters based on electrical medical record.

Results A total of 48 patients who has undergone EUS-guided PAFC drainage within 4 weeks after surgery were enrolled. The indications of the procedure were abdominal pain (n = 27), fever (n = 18), leukocytosis (n = 2), increased size during external tube drainage (n = 1). Technical success rate was 100% (48/48), clinical success rate was 95.8% (46/48). Four patients underwent second procedures. Median period from surgery to EUS-guide drainage was 14 days (6 – 31) and from procedure to resolution was 23.5 days (0 – 113). Adverse event reported in one patient was bleeding occurred in fifth day after the procedure and was improved by left gastric artery embolization.

Conclusions EUS-guided PAFC drainage within 4 weeks after pancreateobiliary surgery is a safe and useful treatment option for PAFC.

Saturday, April 6, 2019

New technologies ePoster Podium 6

ePP160 FULL-FIELD OPTICAL COHERENCE TOMOGRAPHY OF THE NORMAL DIGESTIVE MUCOSA: A PROMISING TOOL FOR THE STUDY OF THE DIGESTIVE BARRIER

Authors Quénéhervé L1,2, Olivier R2,3, Mosnier JF4, Brochard C5,5, Bossard C4, Neunlist M3, Coron E1,2

Institute 1 Digestive Disease Institute (IMAD), University Hospital of Nantes, Nantes, France; 2 Inserm U 1235 The Enteric Nervous System in Gut and Brain Disorders, Nantes University, Nantes, France; 3 Gastroenterology Department, University Hospital of Poitiers, Poitiers, France; 4 Department of Pathology, University Hospital of Nantes, Nantes, France; 5 Department of Digestive Functional Explorations, University Hospital of Rennes, Rennes, France


Aims Full-field optical coherence tomography (FF-OCT) is a non-invasive imaging technique, based on interferometry, allowing dynamic acquisition of images of ex vivo specimens on a microscopic scale. The aim of this study was to demonstrate the feasibility of imaging normal digestive biopsies using FF-OCT.

Methods We enrolled adult subjects scheduled for an endoscopy with biopsies, who had no history of digestive disease. We a posteriori excluded patients, whose biopsies showed abnormal aspects at pathological examination. Four biopsies were sampled in each patient, 2 for pathological examination, 2 for immediate FF-OCT analysis, from 5 different locations: esophagus, gastric antrum, gastric fundus, duodenum or colon. Fresh biopsies were scanned using the LL-Tech benchtop scanner in order to perform optical slicing beneath the tissue surface at selected depths (static mode) and a measurement of intracellular activity data (dynamic mode). Biopsies were then fixed in formaldehyde, sliced in a longitudinal plane parallel to the surface and stained...
using hematoxylin-eosin. FF-OCT images and pathological slides were then reviewed with the assistance of a senior pathologist.

**Results** We enrolled 25 patients with normal biopsies of the esophagus (n = 5), gastric fundus (n = 10), gastric antrum (n = 10), duodenum (n = 7) and colon (n = 6). Specific histological structures of each organ were clearly identified in 100% of FF-OCT images. For instance, the cellular structure of esophageal squamous epithelium with papillae, gastric crypts and glands, duodenal villi and colonic crypts was clearly seen at a 1 μm resolution.

**Conclusions** FF-OCT allows a morphological and functional analysis of digestive tissues on fresh routine endoscopic biopsies, at a subcellular scale. It is a promising tool for the study of the digestive barrier.

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**ePP162V ENDOSCOPIC SIGMOIDOPEXY AS A TREATMENT FOR RECURRENT Sigmoid VOLVULUS IN FRAIL PATIENTS**

**Authors** Quénéhervé L1, Coron E1

**Institute 1** Digestive Disease Institute, University Hospital of Nantes, Nantes, France

**DOI** 10.1055/s-0039-1681702

Sigmoid volvulus is a common cause of colonic obstruction in old and frail patients. Its standard management includes the endoscopic detorsion of the colonic loop, followed by an elective sigmoidectomy to prevent recurrence. However, these patients are often poor candidates for surgery. In frail patients, other options such as endoscopic sigmoidopexy must be developed. By analogy with the caecostomy procedure, sigmoidopexy procedure consists in anchoring the sigmoid to the abdominal wall and placing a Chait catheter tube in the colonic lumen to perform antegrade enemas. As a mini-invasive, reversible technique, endoscopic sigmoidopexy might be a promising treatment of recurrent sigmoid volvulus, when surgery appears to be at risk. Efficacy and safety need to be validated in prospective cohorts.

**Conclusions**

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**ePP164 THE EFFECT OF SMALL BOWEL TRANSIT TIME ON THE DIAGNOSTIC YIELD OF PATIENTS WITH SUSPECTED SMALL BOWEL CROHN’S**

**Authors** Ahmed H1, Al-Rifaie A2, Uddin B1, Kapur K1, Said E1

**Institute 1** Barnsley District General Hospital, Gastroenterology Department, Barnsley, United Kingdom

**DOI** 10.1055/s-0039-1681704

**Aims** Small bowel capsule endoscopy has a mentionable role in diagnosing and confirming small bowel crohn’s disease. Small bowel transit time varies from minutes to hours between different individuals. We aimed to assess capsule endoscopy (CE) diagnostic yield (DY) and it’s relation to small bowel transit time (SBTT) among patients undergoing the test for suspected small bowel (SB) crohn’s.

**Methods** We retrospectively reviewed and analysed the CE reports of all patients underwent CE test for suspected SB crohn’s between April 2011 and April 2017. Tests with unknown SBTT were excluded. We assessed demographics, complications, SBTT and positive diagnostic yield (PDY) among the cohort. PDY was defined as tests with results which could represent crohn’s disease. Data were analysed using SPSS.

**Results** Ninety six CE test were done. Three tests were excluded due to unavailable SBTT on report. One patient (1%) had retained small bowel capsule due to stricture in spite of passage of pre-test patency capsule. The stricture improved with steroid therapy allowing the CE to pass. Ninety two CE reports were analysed. While mean SBTT for patients with PDY was insignificantly higher compared to those without PDY (273.5 min +/- 104.7 vs. 238.4 min +/- 89.6, p Value = 0.09), the mean age was similar on both groups (40.2 yrs +/- 15.3 vs. 43.7 yrs +/- 16, p Value = 0.3). PDY was insignificantly higher in males compared to females (44.8 vs 37.1%, p Value = 0.22). Overall DY among all patients test was 35.9%.

**Conclusions** CE is a safe, non-invasive and feasible test to investigate the small bowel for suspected crohn’s disease. Even though our study suggests that prolonged SBTT may be associated with increased DY, we recommend that large multi-centre study to be carried out to further evaluate this association.
ePP165  PATENCY CAPSULE IN CROHN’S DISEASE – IS IT SAFE?

Authors  Silva M1, Peixoto A1, Gomes S2, Santos AL1, Moreira P1, Corte Real Nunes A1, Lopes S1, Macedo G1

Institute 1 Gastroenterology, Centro Hospitalar de São João, Porto, Portugal; 2 UCSP Rio Maior – ACES Leziria, Rio Maior, Portugal


Aims  Videocapsule endoscopy (VCE) is a non-invasive method for examining the small bowel. VCE retention is the most feared complication of these devices and a patency capsule (PC) may be used to safely perform VCE. Our aim was to assess the safety of PC in patients with Crohn’s disease (CD) or suspected CD, in routine clinical practice.

Methods  Retrospective single-centre study including patients with CD or suspected CD with clinical indication for VCE, between 2011 – 2017. PC detection was performed 30 hours after ingestion with radiofrequency identification scanner. Symptomatic PC retention was defined as the presence of typical obstructive abdominal symptoms (postprandial abdominal pain, bloating, nausea, or vomiting).

Results  608 PC were performed (52% of cases had a definitive diagnosis of CD and 48% of cases had a clinical/imagiological suspicion of CD. The PC retention rate at the 30 hours’ evaluation was 27% (29% in CD cases vs. 25% in suspected CD, p = 0.298). Additionally, 31 (5%) patients excreted the PC intact 30 – 72 hours later. Overall, in 475 (78%) patients the small bowel patency was established (75% of CD vs. 81% of suspected CD, p = 0.064) and performed VCE, without incidents. Considering the safety issues, 12 (2%) patients presented a symptomatic PC retention (9 (3%) with CD and 3 (1%) with suspected CD, p = 0.298). Two (0.3%) patients with CD were admitted for small-bowel obstruction following PC, which was successfully managed with corticosteroids. Furthermore, 9 patients, in whom the PC was not detected at the 30 hours’ evaluation, presented mild abdominal pain (4 with CD and 5 with suspected CD, p = 0.722).

Conclusions  The PC test has proven to be a safe modality for securing small bowel patency prior to VCE, with reduced frequency of symptomatic retention, which occurred mostly in patients with a previous diagnosis of CD.

Saturday, April 6, 2019  13:00 – 13:30

Zenker  ePoster Podium 8

ePP166V  ENDOSCOPIC TREATMENT OF ZENKER’S DIVERTICULUM WITH LIGASURE: SIMPLE, SAFE AND EFFECTIVE

Authors  Diez Redondo P1, Núñez Rodríguez H1, de Benito Sanz M1, Torres Yuste R1, Pérez-Miranda M1

Institute 1 Gastroenterology, Hospital Rio Hortega, Valladolid, Spain


Zenker’s diverticulum may cause disabling symptoms, especially in the elderly. Treatment has changed in recent decades from open surgery to management with flexible endoscopy, resulting in lower morbidity and mortality.

Study  We present the largest series, with the longest follow-up, of patients with Zenker’s diverticulum receiving outpatient treatment with flexible endoscopy using a diverticuloscope and Ligasure (Covidien, Minneapolis, USA), a device that allows tissue sealing and coagulation of vessels before cutting the septum between the diverticulum and esophagus.

Results  We performed 79 diverticulectomies in 69 patients (65.2% male, mean age 73.4 years). The mean diverticulum size was 2.8 cm. In three cases with a diverticulum ≤ 1.5 cm, the diverticuloscope could not be placed. The technical success was 95.8% and the clinical success 96.7%: 84% of the 56 patients followed for a mean of 34.6 months (24 – 64 months) had no dysphagia. The recurrence rate was 10.4%, with a good response to a second diverticulectomy at 12 months (IQR: 11.5 – 17) in most cases. The most severe complications were two microperforations, resolved with conservative treatment, and one case of delayed bleeding endoscopically-controlled with a clip.

Conclusions  Diverticulectomy of the esophagheal-diverticular septum with Ligasure is an outpatient endoscopic technique that is simple, effective in the long term and very safe for the treatment of patients with Zenker’s diverticulum. In symptomatic recurrences, a second procedure was equally safe and effective in most patients.

ePP167  A NOVEL ENDOSCOPIC TECHNIQUE IN TREATING PATIENTS WITH ZENKER’S DIVERTICULUM

Authors  Nedoluzhko I1, Pavlov I1, Shishbin K1, Shumkina L1

Institute 1 Operative Endoscopy, Moscow Clinical Scientific Center n.a. A.S. Loginov, Moscow, Russian Federation


Aims  To show the advantages of endoscopic cryopharingoesophagomyotomy using a novel technique in the treatment of patients with Zenker’s diverticulum.

Methods  Our novel technique is the combination of the standard and tunnel endoscopic methods. One of the best features of the standard procedure was the possibility to make the initial incision and work directly in the middle of the criopharyngeal fold, which is more comfortable. Thus, we started our procedure as a standard one. After the complete intersection of the criopharyngeal muscle, the tunnel stage begins, the purpose of which is to perform an upper esophageal myotomy. Afterwards, the mucosa was cut in the directions of diverticulum cavity and esophagus. This is the key to successful application of clips and hermetic closure of the mucosa.

From June to November 2018 in our center a new combined technique was used in eighteen patients. The average age of patients was sixty-two (from 35 to 80 years). The time of surgical intervention averaged 40 minutes.

Results  The results of the novel technique are equal to the tunnel interventions considering time of procedure and patients’ recovery.

Conclusions  Combined endoscopic surgery for Zenker’s diverticulum allows to perform an adequate myotomy in comfortable conditions.

ePP168  A NEW OPTION IN ZENKER’S DIVERTICULUM ENDOSCOPIC TREATMENT

Authors  Cunha I1, Amaro P1, Gravito-Soares E1, Gravito-Soares M1, Tomé L1

Institute 1 Gastroenterology, Centro Hospitalar e Universitário de Coimbra, Coimbra, Portugal


Aims  The endoscopic treatment of Zenker’s diverticulum (ZD) consists in the division of the septum that separates the diverticulum from the cervical oesophagus, a structure that includes the criopharyngeal muscle. This septotomy is not yet standardized and may be performed using a variety of techniques and devices, from coagulation with argon-plasma to incision with forceps or diathermic knives, with variable efficacy, rate of complications and symptomatic recurrence. The aim of this study is to assess the efficacy and safety of a new endoscopic option in ZD treatment.

Methods  Prospective case series of patients who underwent criopharyngeal myotomy using the ClutchCutter, a novel grasping-type scissors. Procedural details, complications, technical and clinical success rates were recorded. Clinical success was defined according to a score evaluating the weekly frequency of ZD-related symptoms (dysphagia, regurgitation, diurnal and/or nocturnal respiratory symptoms). A clinical score ≥ 2 after treatment defines clinical failure (until 6 months) or recurrence (after 6 months).

Results  11 patients (82% men; mean age of 74 ± 10 years-old), 5 naïve-ZD patients and 6 symptomatic relapses after primary treatment with grasping-forceps (Hotclaw) were treated with ClutchCutter. Mean size of ZD before the treatment was 32 ± 7 mm for naïve-ZD and 13 ± 0.5 mm for symptomatic relapses. All procedures were performed without complications. During a
short-term follow-up (4±2 months) only one patient, with several previous failed treatments, had symptomatic failure.

**Conclusions** The ClutchCutter was developed for submucosal dissection of superficial neoplasms of the gastrointestinal tract. Our results suggest that this electrosurgical device may also be applied in flexible endoscopic Zenker’s diverticulotomy, either treatment-naïve or patients with recurrence, as an easy, fast, safe and efficient alternative endoscopic modality. These results must be validated in a larger series with a longer follow-up.

Saturday, April 6, 2019 13:30 – 14:00
Colon ESD 2
ePoster Podium 1

**ePP169**  **ENDOSCOPIC SUBMUCOSAL DISSECTION IN LARGE RECTAL ADENOMAS AND EARLY CANCER: INITIAL RESULTS IN A BICENTRIC SERIES**

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**DOIs** 10.1055/s-0039-1681709

**Aims** To evaluate ESD for the treatment of large rectal adenomas and early cancer (LRAEC) in two Spanish centers.

**Methods** Prospective registry of consecutive LRAEC cases with ESD carried out in 2 Spanish centers. All procedures were performed by the same endoscopist (AH). All rectal ESD of LRAEC from the first case in November 2012 to March 2018 were analysed. Recurrence analysis excluded 10 cases due to several reasons: surgery due to non-curative ESD (4), less than 12 months of surveillance (3) or missing data (3). To estimate the influence of the learning curve in rectal ESD we compare the dissection speed between de first 10 procedures (group 1) and the last 10 procedures (group 2).

**Results** A total of 32 ESD of LRAEC were registered, male proportion 53%, mean age 65.9 years (SD 12). The mean size of LRAEC was 55.8 mm, with 31% prevalence of submucosal fibrosis (F1 or F2). Technical results and complications are summarized in Table 1. Most complications observed were mild and were successfully controlled endoscopically or with medical treatment.

<table>
<thead>
<tr>
<th>Tab. 1 Main Results</th>
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<tbody>
<tr>
<td>Mean diameter, mm (Range)</td>
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<tr>
<td>Groups 3 and 4 of the Vienna Classification (%)</td>
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<td>Group 5 of the Vienna Classification (%)</td>
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<tr>
<td>En-bloc (%)</td>
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</table>

In group 1 the dissection speed was 6.3 (SD 2.7) min/cm² whereas in group 2 was 5.2 (SD 3.7) min/cm² not reaching statistical significance (p = 0.288). There were no case of severe complication requiring surgery.

**Conclusions** Results of our series of ESD in LRAEC are similar to those reported in Asian series, highlighting the excellent en-bloc resection rate for LRAEC over 5 cm on average, with no local recurrence after 1-year follow-up. Higher dissection speed might reflect a progression in the learning curve, although no significant differences could be reached.

**ePP170**  **COLONIC ESD: IS IT EASY WITH COUNTERTRACTION BY CLIP AND RUBBER BAND? A PROSPECTIVE STUDY**

**Authors** Jacques J1, Albouys J1, Rivory J1, Legros R1, Ponchon T1, Sautereau D2, Pioche M1

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**DOI** 10.1055/s-0039-1681710

**Aims** ESD in the colon is more challenging technically than other locations. New systematic strategy by countertraction by clips and rubber band considerably facilitate the procedure. Here, we report a large prospective case series of colon ESD using this strategy.

**Primary Endpoint:** Monobloc, R0 and curative resection rate.

**Secondary Endpoints:** Perforation rate, risk factors in multivariate analysis of Perforation, R0 resection and Optimal ESD (defined by R0 resection without perforation and faster than 20 mm²/min).

**Results** 440 colorectal ESD were performed in the study period. 286 cases were included in the study (Exclusion of rectal cases) performed by 4 operators. Lesions were SMSA 4 in 82% of cases with a mean size of 55 mm. Mean duration procedure was 80 min with a min speed of resection at 34.1 mm²/min. 70% of the lesions were located above the splenic flexure.

**Primary Endpoint:** Monobloc, R0 and curative resection rate were respectively 96%, 81.2% and 74%.

**Secondary Endpoint:**
- Perforation rate was 4.3%
- Predictive factors of optimal ESD were one operator (OR 3.92; p = 0.0002) and no F2 fibrosis (OR 4.24; p = 0.037) in multivariate analysis.
- Predictive factors of non R0 resection was only a location on the ileocecal valvular (OR 4.32; p = 0.025) in multivariate analysis.
- No predictive factors of perforation was individualized in multivariate analysis.

**Conclusions** Systematic countertraction using a double clip and rubber band facilitates colon ESD. This strategy should become the standard for colon ESD and feeds the debate between pEMR and ESD for the treatment of large colonic superficial lesions.

**ePP171**  **EFFICACY OF THE DOUBLE CLIP COUNTERTRACTION METHOD FOR RESIDUAL OR LOCALLY RECURRENT LESIONS IN COLONIC ENDOSCOPIC SUBMUCOSAL DISSECTION**

**Authors** Faller J1, Jacques J2, Legros R1, Rivory J1, Ponchon T1, Pioche M1

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**DOI** 10.1055/s-0039-1681711

**Aims** Endoscopic submucosal dissection (ESD) for the resection of scarred colonic lesions is a feasible but challenging technique because of submucosal fibrosis. We previously reported an internal traction method using two clips and a rubber band and making ESD easier. This study aimed to evaluate the efficacy and security of ESD using this countertraction technique in case of residual or locally recurrent colonic lesions.

**Methods** We retrospectively analyzed all residual or locally recurrent colonic lesions, DSM treated, in two French expert center, between August 2017 and October 2018. The countertraction technique has been systematically used.
The primary endpoint was the curative resection rate. Secondary endpoints were technical success rate, degrees of fibrosis, tumor diameter, procedure time, resection speed, secondary chirurgical treatment, and complication rate.

**Results** Among the 29 patients included, there were 18 (72%) locally recurrent colonic lesions and 11 (44%) residual lesions after a primary endoscopic resection. Severe submucosal fibrosis was observed in 25 patients (86%) and intermediate fibrosis in 4 patients (14%).

Mean resected tumor diameter, procedure time and resection speed were 41 mm [25 – 70 mm], 57 min [13 – 230 min], and 22 mm2/min [6 – 60 mm2/min], respectively. The successful resection rate was 90% (3 piecemeal mucosal resection conversion at the beginning of the study), this rate increased to 100% for the last twenty lesions because of the progression curve. The en bloc resection rate was 83%, but only 68% had negative margins (R0) mostly because of damaged lesions during the dissection. Only one patient has needed secondary surgical treatment but there was no residual neoplasm. Complication included three (10%) small intraoperative perforations endoscopically treated. There was no secondary perforation or bleeding.

**Conclusions** In cases with scarred colonic lesions, ESD with double-clip counter traction allows curative resection with low complication risk. This technique is an alternative to Full thickness resection (FTRD) particularly for large lesions over 3 cm.

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In 10 cases, the lesion was trapped in the OTSC and could not be resected properly. The mean age of the patients was 71 years, being men 80%. Indications were: non-lifting sign recurrent lesions (6 cases), non-lifting sign untreated lesions (1), incomplete resection with non-lifting sign (2), appendicular lesions (1).

Location was appendix (1 case), stump (1), right colon (1), transverse colon (2), left colon (2), sigma (2), rectosigmoid junction (1).

The mean diameter of the lesion was 19 mm. In 8 cases there was a partial resection of the lesion (mean diameter of the lesion 18 mm), and in 2 cases only biopsies were taken.

Final histology: LGD (4 cases), HGD (2), intramucosal adenocarcinoma (1), SSP (2), advanced adenocarcinoma >sm2 (2).

In the follow-up, three lesions underwent surgery (appendicular lesion and advanced adenocarcinoma), 3 residual lesions were treated endoscopically and in 4 cases the scar showed no residual tissue.

**Conclusions** In some cases of intended EFR, residual tissue trapped inside the OTSC might be easily treated endoscopically and sometimes might be treated by the OTSC itself, if the residual lesion is small.

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**EP173 COLD SNARE POLYPECTOMY VS HOT SNARE POLYPECTOMY VS ARGON PLASMA COAGULATION (APC) FOR 5 – 9MM LEFT-SIDED COLORECTAL POLYPS: A PROSPECTIVE RANDOMIZED TRIAL**

**Authors** Varytimiadis L1, Viazis N1, Papastergiou V2, Kyriakopoulos G3, Argyroklos T3, Pontas C3, Papanikolaou I4, Arkadopoulos N3, Sirmioitis V3, Mantzaris G1

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**DOI** 10.1055/s-0039-1681713

**Aims** The optimal technique for the removal of small colorectal polyps is debatable. We aimed to compare the recurrence rates among three endoscopic treatment modalities for 5 – 9 mm left-sided colorectal polyps.

**Methods** Consecutive adults referred for elective colonoscopy (1/2015 – 1/2018) who had at least one polyp of eligible size (5 – 9mm) located distally to the splenic flexure were randomly assigned (1:1:1) to one of three treatment modalities: 1) Cold Snare Polypectomy (CSP), 2) Hot Snare Polypectomy (HSP) and 3) APC ablation (50 – 60W, flow; 2lt/min). The polyp size was marked with endoscopic tattoo and a follow-up colonoscopy with scar biopsies was performed 6 – 18 months after the index procedure. Outcomes were the polyp recurrence rate and the occurrence of complications.

**Results** A total of 119 patients were enrolled, of which 7 dropped out because of non follow-up. Eventually they were included 112 patients (62.5% males, mean age 61.1 ± 9.9 years) with 121 polyps (CSP: 39, HSP: 45, APC: 37) who returned for follow-up colonoscopy. The mean polyp size was 6.7 ± 0.91 mm, 58% were located in the sigmoid, 33% in the rectum and 8% in the descending colon. The majority of polyps resected by CSP or HSP were histopathologically proven to be neoplastic (tubular adenomas: 25.9%, tubulovillous adenomas: 11.1%, sessile serrated adenomas/polyps: 17.5%). No cases of delayed bleeding or perforation occurred in the study. Scar biopsies at follow-up colonoscopy (performed after a mean interval of 13.4 ± 3.8 months) revealed a total of 7 (5.8%) cases of polyp recurrence, showing no significant difference among the three treatment groups [CSP: 3/39 (7.7%), HSP: 1/45 (2.2%), APC: 2/37 (5.4%), P = 0.51].

**Conclusions** CSP, HSP and APC ablation are effective and safe treatment modalities for 5 – 9 mm left-sided colorectal polyps. The present randomized
study could not detect any differences in the polyp recurrence rates among the three endoscopic techniques.

ePP174 SCAR-ENGAGED COLORECTAL LESIONS: ENDOSCOPIC SUBMUCOSAL DISSECTION (ESD) VERSUS A HYBRID RESECTION TECHNIQUE (ENDOSCOPIC UNSCARRING MUCOSAL RESECTION – EUMR)

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Institute 1 IRCs San Raffaele Scientific Institute – Vita-Salute San Raffaele University, Milan, Italy; 2 Arcispedale Santa Maria Nuova-IRCCS, Reggio Emilia, Italy

Aims Scar-engaged colorectal lesions are characterized by absent or inadequate submucosal lifting, posing a serious challenge for curative resection with need for surgery. We propose a hybrid resection technique that we called Endoscopic Unscrewing Mucosal Resection consisting in marking, incision, partial dissection, creation of mucosal flaps and snaring until complete removal of the lesion (en bloc or piecemeal depending on size).

Methods We conducted a retrospective analysis on 74 scar-engaged lesions treated at “Santa Maria Nuova”, Reggio Emilia or “San Raffaele”, Milan, Italy by a single experienced endoscopist. Depending on morphology, size and location of the lesions EUMR (n = 47) or ESD (n = 27) was preferred.

Results EUMR was performed on 27 colonic and 20 rectal lesions with a median size of 3 (1 – 8) cm; ESD on 4 colonic and 23 rectal lesions, median size 3 (1 – 7) cm. Mean procedural time was 80 (20 – 204) min and 80 (27 – 250) min respectively. We experienced 1 case (2.1%) of delayed bleeding and 1 (2.1%) post-resection stricture in the EUMR group. No case of bleeding, 2 (7.4%) intra-procedural and 1 delayed perforation (3.7%) in the ESD group. A complete resection was obtained in all cases in both groups with 23 en-bloc ESD (85.2%). The most prevalent histological diagnosis was high-grade dysplasia in both (53 vs. 44%) with 4 cases (14.9%) of adenocarcinoma in the ESD group and in no cases in the EUMR. Available up to 60 months follow-up data for 44 lesions in the EUMR and 23 in the ESD group revealed 4 cases (9%) vs. no evidence for recurrence respectively. 2 of 4 recurrence cases were successfully retreated with EUMR without further recurrence.

Conclusions When compared to ESD, EUMR is an effective technique for the treatment of scar-engaged colorectal lesions with similar results but a better safety profile.

ePP175 ERC CLIP WITH LINE – A GERMAN PILOT SERIES

Authors Horn A1, Meves V1, Hochberger J2
Institute 1 Gastroenterology, Vivantes Klinikum Berlin Friedrichshain, Berlin, Germany

Aims Duodenal diverticulum (DD) is a frequent condition that is described in up to 20% of endoscopically retrograde cholangiopancreatography (ERC)1. Large DD with intradiverticular located Papilla vateri (PV) have a lower incidence2, but the exploration and treatment of biliary tract (BT) can be difficult and shows significantly higher complication rates3. In 2016 the ERC Clip With Line Technique (ECLT) developed by our group as part of a method transfer from the ESD4 and was present for the first time in 2016. To visualize the PV in cases of large DD we attached dental fissal via a haemoclip to the papillary roof and the line was pulled out via the mouth. Traction on the diverticular collum makes it easier to visualize/cannulate the PV.

Methods Therapy success and complication rate of ECLT, as a feasibility study. Retrospective case series review of the ECLT accomplished in our center between 24.8.16 and 27.4.18.

Results ECLT was used in 5 patients (3 women) with large DD, where the primary cannulation of BT was not feasible with standard techniques. Mean patient age 74.6 years (min 59yr, max 88yr, SD 12.5). Average examination time 125 min (min 30 min, max 235 min, SD 87.9). Mean hospitalization after ECLT 4 days (min 2 d, max 5 d, SD 1.4). The cannulation of BT succeeded in all cases. There were no complications. Very experienced (more than 10,000 ERCs) and less experienced investigators performed ECLT.

Conclusions ECLT proves to be a safe method. ECLT is easy to perform/learn. It is a cost effective way to visualize/treat the PV for large DD. Despite the positive trend, a larger number of examinations is required and the procedures needs to be performed according to a standardized protocol in order to be sure about success rates, complications and possibly shortened procedure time.

ePP176 DIFFICULT BILIARY CANNULATION IN PATIENTS WITH DISTAL MALIGNANT BILIARY OBSTRUCTION: AN UNDERESTIMATED PROBLEM?

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Institute 1 Universita degli Studi di Milano, Milan, Italy; 2 Azienda Ospedaliero Universitaria Maggiore della Carita, Novara, Italy; 3 Valduce Hospital, Como, Italy; 4 IRCs-ISMETT, Palermo, Italy; 5 University of Calgary, Calgary, Canada
DOI 10.1055/s-0039-1681716

Aims To date, there are no available data on rates of difficult biliary cannulation (DBC) in the specific setting of patients (pts) with distal biliary malignant obstruction (DBMO). Aim of the study was to investigate the incidence and outcome of DBC in patients undergoing ERC for DBMO.

Tab. 1 Total adverse events in patients with distal malignant biliary obstruction

<table>
<thead>
<tr>
<th>Adverse events</th>
<th>Non DBC Group 27/245 (11,1%)</th>
<th>DBC Group 55/277 (19.3%)</th>
<th>p value = 0.005632</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEPT (Bleeding) Cholangitis/Stent migration</td>
<td>9 (3,7%)/2 (1%)</td>
<td>15 (5,4%)/14 (5%)</td>
<td>10 (3,6%)/11 (1,8%)</td>
</tr>
<tr>
<td>Others</td>
<td>6 (2,4%)/5 (1,8%)</td>
<td>4 (1,5%)/4 (1,5%)</td>
<td>11 (3,9%)</td>
</tr>
</tbody>
</table>

Methods Retrospective multicentric analysis of all consecutive pts with DBMO that underwent ERC from 09/2014 to 10/2017. The primary outcome was to evaluate the rate of DBC (according to ESGE guidelines), secondary outcome was the rate of adverse events (AEs) (according to ASGE lexicon).

Results A total of 522 pts (48.6% female; mean age 73.05) were included. DBC occurred in 277 pts (53%). The technique performed were: fistulotomy in 191 pts (69%), double guidewire technique in 10 (3,6%), transpancreatic sphincterotomy in 25 (9%); more than one of these techniques combined in 15 pts (5,4%); deep biliary cannulation after several attempts with sphincterotomy in 25 pts (9,4%); more than one of these techniques combined in 15 pts (5,4%); deep biliary cannulation after several attempts with sphincterotomy in 25 pts (9,4%); failure of biliary cannulation occurred in 53 pts (10,1%) requiring: EUS-guided biliary drainage in 36 pts (67,9%); EUS guided rendez-vous with transpapillary stent placement in 2 (3,8%), percutaneous transhepatic biliary drainage in 8 (15,1%), second successful ERC after pre-cut in 6 (11,3%), surgical bypass in 1 (1,9%).

Overall AEs rate was 15,7%/82(522 pts): 19,8%/55(277) in DBC Group vs. 11,0%/27(245) in non DBC group (p value = 0.005632).

Conclusions Patients with DBMO have a high rate of DBC (53%) requiring alternative techniques for biliary drainage. This translates to higher rates of AEs in patients with DBC. Further prospective multicentric studies are needed to confirm these data and to evaluate the best approach for biliary drainage in this specific subgroup of patients.
Aims Endoscopic submucosal dissection (ESD) is accepted as the standard treatment for early-stage esophageal neoplasia. However, esophageal perforation may occur, leading to mediastinitis and pneumothorax, which sometimes require emergency surgery. In addition, failure of en bloc resection causes local recurrence. Until now, few studies have reported on predictors of failure of en bloc resection or perforation during ESD. Thus, we evaluated the predictors of failure of en bloc resection or perforation in ESD for esophageal neoplasia.

Methods This was a retrospective observational study conducted at a single institution. Between May 2004 and March 2016, 543 consecutive patients with 927 esophageal lesions were treated with ESD. Patients with metachronous esophageal neoplasia or missing data were excluded. The primary outcome was determining the predictors of failure of en bloc resection or perforation in patients who underwent esophageal ESD. Perforation was defined as a visible hole in the esophageal wall, exposing the mediastinal cavity.

Results A total of 543 patients with 736 lesions were evaluated. Failure of en bloc resection occurred in 6 patients (1.1%) with 6 lesions, and perforation occurred in 11 patients (2.0%) with 11 lesions (1.5%). Lesion diameter [odds ratio (OR), 1.05; 95% confidence interval (CI): 1.02–1.07; p < 0.001], wider tumor circumference (OR, 9.80, 95% CI: 1.61–59.5; p = 0.01), and previous chemoradiotherapy for esophageal cancer (OR, 3.87; 95% CI: 1.19–12.53; p = 0.02) were associated with failure of en bloc resection or perforation according to crude logistic regression analysis. Multivariate logistic regression analysis showed that lesion diameter (OR, 1.04; 95% CI: 1.02–1.06; p < 0.001) and previous chemoradiotherapy (OR, 5.24; 95% CI: 1.52–18.06; p = 0.009) were independent predictive factors.

Conclusions Larger lesions and previous chemoradiotherapy for esophageal cancer increased the risk of failure of en bloc resection or perforation in patients who underwent esophageal ESD.
images, and we evaluated their individual diagnosis of SM2, compared with their diagnosis using the assumed algorithm.

**Results** After the derivation study, estimated tumor size (more than 11 mm), uneven surface and margin elevation had significant relationships with SM2 after multivariate analysis. In this derivation results, we assumed the algorithm using these 3 findings. Using this assumed algorithm, specificities and accuracies of SM2 of 3 novice endoscopists were improved compared with their individual diagnosis significantly, and positive predictive values (PPV) of 4 novice endoscopists were increased.

**Conclusions** Using this algorithm, the specificity and accuracy of novice endoscopists in depth estimation of SBAs increased. PPV likely increased as well.

### ePP181 EUS-GUIDED DRAINAGE OF PERIPANCREATIC FLUID COLLECTIONS BY LUMEN-APPOSING METAL STENTS VERSUS SELF-EXPANDING METAL STENTS VERSUS PLASTIC STENTS: SINGLE CENTER EXPERIENCE OVER 6 YEARS

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**DOI** 10.1055/s-0039-1681720

**Aims** Comparing outcome after peripancreatic fluid collection (PFC) drainage by plastic double pigtail stents versus self-expanding metal stents (SEMS) versus the recently developed lumen-apposing metal stents (LAMS).

**Methods** We retrospectively analyzed our local endoscopic database from January 2012 up to November 2017 in patients who underwent EUS-guided drainage for symptomatic PFC. Exclusion criteria were post-surgical peripancreatic collections and follow-up of less than 30 days. Technical and clinical success, adverse events and mortality as well as re-intervention and recurrence rates were assessed.

**Results** 73 patients (mean age: 48 ± 17, 73% males) underwent endoscopic drainage of 75 pancreatic fluid collections (57 pancreatic pseudocysts/PP and 18 walled-off necrosis/WON) by plastic stents (n = 47, 62.7%), SEMS (n = 5, 6.7%) or LAMS (n = 23, 30.7%) using a transgastric (94.7%) or transduodenal (5.3%) approach.

Overall technical and clinical success was 94.7% and 84% respectively. Technical success was higher in plastic stents (100%) and SEMS (100%) compared to LAMS (82.6%) (p = 0.008). However, there was no significant difference in terms of clinical success between the three groups (87.2% vs. 82.6% vs. 60%, p = 0.281).

Intraoperative complication rate was 9.3% (4 bleedings, 3 stent dislodgements) and significantly differed between plastic (n = 1, 2.1%), SEMS (n = 2, 40%) and LAMS (n = 4, 17.4%) (p = 0.006). There was no difference in 30-days complication rate. PFCs treated with SEMS had a higher re-intervention rate (80%) compared to plastic (14.9%) and LAMS (4.3%) (p < 0.001). Similarly, recurrence rate after stent removal was higher in SEMS (60%) compared to plastic stents (14%) and LAMS (13%) (p < 0.028) during the median follow-up of 16.6 months.

**Conclusions** Our results suggest equal clinical efficacy of plastic stents and LAMS in PFC drainage. Despite the small number of patients, SEMS seem nevertheless to be inferior to plastic stents and LAMS. Major advantage of LAMS appears to be a significantly lower re-intervention rate, thereby potentially reducing patient’s procedure-induced burden.

### ePP182 EUS-GUIDED PLACEMENT OF NEW GOLDEN FIDUCIAL MARKERS IN STEREOTACTIC BODY RADIATION THERAPY IN LOCALLY ADVANCED PANCREATIC CANCER: PRELIMINARY RESULTS OF FEASIBILITY AND SAFETY

**Authors** Auriemma F1, Di Leo M2, Comito T2, Lamonaca L2, Fugazza A2, Anderloni A2, Bossi P2, Maselli R2, Chiara Ferrara E2, Alessia Galtieri P2, Scorsetti M2, Repici A2, Carrara S2

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**DOI** 10.1055/s-0039-1681721

**Aims** Radiation therapy plays an emerging role in the multi-modal treatment of locally advanced pancreatic cancer (LAPC). Stereotactic body radiation therapy (SBRT) is an innovative radiation technique, characterized by high prescription dose delivered in few fractions and increased local control rate. Endoscopic ultrasound (EUS)-guided fiducials placement allows to accurately evaluate the target motion during SBRT delivery.

**Methods** Patients with LAPC treated with induction chemotherapy according to FOLFIRINOX or Gemcitabine-Abraxane schedules were treated with ablative dose of SBRT (54 Gy in 6 daily fractions) in a prospective phase II study (NCT03158779). Gold markers were implanted under EUS-guidance into the tumor, at the opposite extremities. Fluoroscopy was used to confirm the position. A new dedicated needle was used: a 22G needle preloaded with 4 gold fiducials (0.43 mm width for 5 mm length), EchoTip Ultra Fiducial Needle (Cook Medical).

Prior to fiducial placement the patients received iv antibiotic prophylaxis and rectal Indomethacine.

**Results** From May 2017 to Nov 2018, 8 patients (mean age 66.5 years), were enrolled. After adjuvant CT, at restaging the disease was still locally advanced, with no distant progression. Tumor mean size was 31 mm. In all but one patient 2–4 markers were placed. In 3 of 8 patients procedure had no technical difficulties. In 5 patients, fiducial placement was made difficult due to: increased hardness of lesion, nearest vessels, poor control in the first marker release. Patients started the SBRT protocol 10.2 days (range 6–19) after simulation CT-scan. A minimal migration of one fiducial (<3 mm) occurred in 1 patient. No severe adverse events occurred, and all procedures were performed in an outpatient setting.

**Conclusions** This preliminary evaluation demonstrated the feasibility and safety of the EUS-guided fiducial placement using the new dedicated pre-loaded needle. Only minor technical difficulties did not affect the correct placement of the fiducials.

### ePP183 IMMEDIATE DIRECT ENDOSCOPIC NECROSECTOMY FOLLOWING ONE-STEP EXCHANGE FREE EUS-GUIDED DRAINAGE OF WALLED OFF PANCREATIC NECROSIS

**Authors** Luggeri D1, Utzeri E2, Cipolletta F3, Amata M1, Barresi L1, Granata A1, Traina M1, Tarantino L1

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**DOI** 10.1055/s-0039-1681722
Aims EUS-guided drainage with Lumen Apposing Metal Stents (LAMS) and direct endoscopic necrosectomy (DEN) is an effective miniminvasive treatment of infected or symptomatic WOPNs. It revealed a lower complication and mortality rate compared to surgery or percutaneous approach. The aim of our study is to evaluate efficacy and safety of EUS-guided drainage of infected WOPNs with a LAMS and immediate DEN in a consecutive cohort of patients.

Methods All consecutive patients with infected or symptomatic WOPN from February 2014 to June 2018 were retrospectively reviewed. All patients underwent electrocautery-enhanced LAMS (EC-LAMS) placement with the “one-step exchange-free” technique. Immediate DEN with hydrogen peroxide irrigation was performed following stent placement in all patients. DEN was then repeated until resolution of the WOPN. The primary outcomes were to evaluate survival rate and clinical success. Secondary outcomes included: technical success, adverse events (AEs) and number of procedures per patient.

Results 45 patients were treated in the study period. Clinical success was of 88.8%. Survival rate was 91 and 88.8% at 1 and 3 months, respectively. Technical success was achieved in 97.7% of patients and no procedure-related AEs occurred. Mean number of procedure per patient was 3.7. In the follow-up time (mean of 687 days) pseudocyst formation was observed in two cases, successfully treated by endoscopic therapy.

Conclusions Immediate DEN following EUS-guided one-step exchange-free EC-LAMS placement is an effective and safe treatment for infected or symptomatic WOPNs.

Saturday, April 6, 2019 13:30 – 14:00 Pediatric 1 ePoster Podium 6

ePP185 ERCP IN INFANTS, CHILDREN, AND ADOLESCENTS – DIFFERENT ROLES OF THE METHODS IN DIFFERENT AGE GROUPS

Authors Keil R1, Drábek J1, Lochmannová J1, Štouček J1, Koptová P2, Wasserbauer M2, Frybová B2, Snojaud J2, Rygl M2, Kotalová R3, Hlava Š1

Institute 1 Endoscopic Unit, Internal Department, University Hospital Motol, Prague, Czech Republic; 2 Department of Pediatric Surgery, University Hospital Motol, Prague, Czech Republic; 3 Pediatric Department, University Hospital Motol, Prague, Czech Republic


Aims Endoscopic retrograde cholangiopancreatography (ERCP) is seldom used in children, and published series have limited numbers of pediatric patients. The aim of this retrospective, long-term, observational study was to assess the efficacy and safety of pediatric ERCP in a large group of children.

Methods Data were evaluated from 626 children with biliary pancreatic disorders admitted to University Hospital Motol, Prague, between January 1999 and January 2018. Clinical data were obtained by retrospective evaluation of our database of pediatric ERCP procedures and from clinical records.

Results We performed 856 ERCPs on 626 pediatric patients; of these procedures, 59% were therapeutic and 41% were diagnostic. We achieved 96% technical success. Indications for ERCP and pathological findings differed in different age groups. The main role of ERCP was in excluding biliary atresia in those aged less than one year. In children aged 1 to 6 years, the most frequent diagnoses were choledochal cyst followed by choledocholithiasis. In children aged 7 to 12 years and 13 to 19 years, the most frequent diagnoses were choledocholithiasis followed by pancreatic pathology. The overall complication rate found in this study was similar to rates observed in adult populations.

Conclusions Our study shows the efficacy and safety of diagnostic and therapeutic ERCP in a large series of infants and children with technical success and complication rates comparable to those in adults. Our data show that ERCP had different roles in different age groups of children.

ePP186V ENDOSCOPIC TREATMENT OF PERSISTENT GASTROCUTANEOUS FISTULA COMBINED WITH TRICHLORACETIC ACID. DESCRIPTION OF A NEW TERAPEUTIC METHOD

Authors Souza de Macedo F1, Andrade Franco Neto J1, Diniz Carvalho S1, Souto Bittencourt PF1, Nunes Arantes V1, Rodrigues Ferreira A2

Institute 1 Alf Institute, Federal University of Minas Gerais, Belo Horizonte, Brazil; 2 Universidade Federal de Minas Gerais, Belo Horizonte, Brazil


Aims Persistent gastrocutaneous fistula is a complication after the removal of the gastrostomy tube. It is reported in 1/3 of patients. Persistent gastrocutaneous fistula is defined by the non-closure of gastrostomy opening after one month. This situation results on abdominal skin burning by the gastric secretion and decreasing quality of life for those patients. This study describes a new method of endoscopic closure of persistent gastrocutaneous fistula using combined endoscopic techniques with trichloracetic acid.

Methods This is a descriptive study of two pediatric patients followed up at a tertiary center in Minas Gerais from August 2017 to August 2018 who underwent endoscopic treatment to close the gastrocutaneous fistula with the use of argon plasma scarification, cauteterization with trichloracetic acid and placement of metal clips.
**Results**

Two patients were aged between 7 and 17 years. These patients had a gastrotomaneous fistula after 6 and 8 months of gastrostomy removal, with daily gastric drainage. The endoscopic treatment was performed with two sessions of trichloroacetic acid application, combined with the use of argon plasma coagulation and placement of metal clips, presenting good results. Both patients presented fistula closure, with no drainage of the gastric content some days after procedure and without complications.

**Conclusion**

Endoscopic therapy for the closure of persistent gastrotomaneous fistulas with the combined use of trichloroacetic acid has been proven effective. This complication is not described in the endoscopic literature. In some studies this technique was already used for the closure of fistulas in bronchoscopy.

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**References**


2. The most concerning complication of capsule endoscopy (CE) is capsule dislodgement. CR was considered when the device was not detected in 18 cases (0.7%). The almost sites of CR were the small bowel (17 cases). This large multicenter study shows that CR is a rare complication with a favorable clinical outcome. About half of patients with CR were managed with non-surgical intervention.

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**ePP188**

**OUTCOMES AND MANAGEMENT STRATEGIES FOR CAPSULE RETENTION: A KOREAN CAPSULE ENDOSCOPY NATIONWIDE DATABASE REGISTRY STUDY**

**Authors**


**Institute**

1. Dongguk University Ilsan Hospital, Goyangsi Kyunggido, Korea, Republic of; 2. Department of Internal Medicine-Gastroenterology, Kyungpook National University, Daegu, Korea, Republic of; 3. Soonchunhyang University College of Medicine, Seoul, Korea, Republic of; 4. Hallym University College of Medicine, Dongtan, Korea, Republic of; 5. Yongsei University College of Medicine, Seoul, Republic of; 6. Seoul National University College of Medicine, Seoul, Republic of; 7. Chungnam National University College of Medicine, Daejeon, Korea, Republic of; 8. Kangwon National University School of Medicine, Chuncheon, Korea, Republic of; 9. Yeungnam University College of Medicine, Daegu, Korea, Republic of; 10. Keimyung University School of Medicine, Daegu, Korea, Republic of; 11. Jeju National University School of Medicine, Jeju, Korea, Republic of; 12. Inje University College of Medicine, Pusan, Korea, Republic of; 13. Dongguk University, Gyengasangbukdo, Korea, Republic of

**DOI** 10.1055/s-0039-1681726

**Aims**

The most concerning complication of capsule endoscopy (CE) is capsule retention. The gastrointestinal tract although clinical outcome and management of patients with CR are still uncertain. The aim of this study was to investigate clinical outcomes and management of CR.

**Methods**

The CR results in multicenters between October 2002 and April 2018 were retrospectively reviewed. Data on patients’ demographics, CE indication, findings, and details of management were analyzed.

**Results**

A total of 2419 consecutive small bowel CE were performed. CR was detected in 18 cases (0.7%). The almost sites of CR were the small bowel (17 cases) followed by the esophagus (1 cases). Capsule removal was performed by surgery in 9 cases and endoscopically in 4 cases. Two retained capsule dislodged after steroid treatment, 1 case of CR resolved with stopping to take NSAIDs. 2 case of CR resolved without any intervention.

**Conclusions**

This large multicenter study shows that CR is a rare complication with a favorable clinical outcome. About half of patients with CR were managed with non-surgical intervention.
In the quantitative scale, the mean score of the two observers was 6.5 and 6.7, resulting in an intra-class agreement of 0.78 (p < 0.001).

**Conclusions** The optimization of the quality of the intestinal small bowel preparation and the diagnostic yield of the CE requires, first, a well-validated cleaning scale. Brodt's rating scales have strong inter-observer agreement. The qualitative scale is easier to apply and has better inter-observer agreement.

ePP190 SAFETY AND EFFICACY OF NON-ANESTHESIOLOGIST ADMINISTERED SEDATION (NAS) IN GASTROINTESTINAL ENDOSCOPY: A PROSPECTIVE, MONOCENTRIC STUDY OF 9380 PROCEDURES

**Authors** Deiana S1, Gabbanini T1, Soriani P1, Mirante V1, Manno M1

**Institute** 1 Digestive Endoscopy Modena Northern Area, Carpi and Mirandola Hospital, AUSL Modena, Carpi, Italy


**Aims** Sedation is an integral part of gastrointestinal endoscopy, but the best sedation strategy is still a matter of debate. Non-anesthesiologist (NAS) propofol-based-sedation (PBS) remains controversial because of concerns about safety. The aim of the study was to evaluate safety and efficacy of NAS, comparing traditional sedation with PBS.

**Methods** We prospectively collected data of endoscopic exams consecutively performed at our Endoscopy Unit during 17 months. Procedures were classified into two groups: traditional sedation with midazolam and/or fentanyl (group1) and PBS (group2). All gastroenterologists and nurses were trained accordingly to the ESGE position paper. Safety was evaluated in terms of adverse events requiring medical interventions, while efficacy in terms of cecal intubation. Continuous data are expressed as A p value less than 0.05 was considered statistically significant.

**Results** Among 10624 patients, 9380 (mean age 61.2 ± 14.7 years) underwent endoscopies in NAS: 62.3% (5845) were colonoscopy, 33.7% (3157) esophago-gastro-duodenoscopy, 1.4% (133) echoendoscopy and 0.05% (5) were push-enteroscopy. The majority of procedures were performed in out-patient setting (8176, 87.2%) and in most cases they were diagnostic procedures (8780, 93.6%). Group 1 was composed by 1999 patients (21.3%), while group 2 by 7381 patients (78.7%). Twenty-one (0.22%) minor adverse events (17 transitory hypotension/bradichardia and 4 transitory oxygen desaturation) were registered, 3 in group 1 and 18 in group 2. No major complications (i.e. hospitalization, tracheal intubation or death) occurred. No differences between groups in terms of rate of adverse events were registered (0.15% vs. 0.24%; pNS). Cecal intubation rate during colonoscopy was higher in PBS group (99.2% in group1 and 100% in group2; p < 0.05), while 9 colonoscopy in group1 was stopped for intolerance.

**Conclusions** The study adds new favourable data on the safety of NAS with PBS in digestive endoscopy with specifically trained staff. Moreover, propofol sedation increases the endoscopic examination effectiveness, avoiding failure for patients intolerance.

ePP192 ADVERSE EVENTS ASSOCIATED WITH DRUGS USED FOR ENDOSCOPIC SEDATION: A NATIONWIDE ASSESSMENT

**Authors** Lee JK

**Institute** 1 Internal Medicine, Dongguk University Ilsan Hospital, Goyang, Korea, Republic of


**Aims** Currently, most endoscopic procedures are performed with sedation. Although endoscopic sedation is considered safe generally, cases of adverse events (AEs) occur inevitably. This study tried to analyze the patterns of AEs associated with drugs used for endoscopic sedation.

**Methods** Case records of AEs for fentanyl, alfentanil, remifentanil, ketamine, etomidate, propofol, meperidine/pethidine, diazepam, midazolam and dexmedetomidine were reviewed reported voluntarily to the Korea Adverse Event Reporting System database from 2007 to 2017. The causality of each case was assessed based on the WHO-UMC criteria. The seriousness was determined based on the International Conference on Harmonization on E2D Guideline.

**Results** During the study period, there were 94,084 cases associated with drugs used for endoscopic sedation from 535,826 overall AEs, in which cases 66.5% were female and 35.8% over 60 years old. The most common drug associated with AEs was fentanyl (n = 57,265) followed by meperidine (n = 23,928), midazolam (n = 4,702), remifentanil (n = 2,490), diazepam (n = 2,267), propofol (n = 1,452), ketamine (n = 7,753), alfentanil (n = 742), dexmedetomidine (n = 312) and etomidate (n = 173). Nausea was most common AEs in fentanyl (51%), remifentanil (43%), alfentanil (39%), meperidine (30%) and propofol (25%). Stupor was most common AEs in midazolam (35%). Drowsiness was the most common AEs in diazepam (10%). Vomiting was the most common AEs in ketamine (21%). Hypotension was the most common AEs in dexmedetomidine (45%) and etomidate (25%). Serious AEs occurred in 2,936 (3%) cases, from which etomidate (31.2%) was the most
common drug (31.2%) and hypotension (23.2%) was the most common AE. The reports have increased annually.

**Conclusions** Fentanyl was associated with AEs the most commonly, followed by meperidine and midazolam. Etomidate needs special attention since it was the most common drug related with severe AEs.

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**Saturday, April 6, 2019**

**14:00 – 14:30**

**Colon ESD 3**

**ePP193 RISK FACTOR OF LYMPH NODE METASTASIS IN ENDOSCOPICALLY RESECTED T1 COLORECTAL CANCER**

**Authors** Song G1, Baek DH1, Park EY1, Park JW1, Lee SH1, Cadahía C1, De la Cruz Esteban DR1, Rodriguez Carrasco M1, Romero Romero E1, Del Pozo García A1, Díaz Tasende JB1, Marín Gabriel JC1

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**DOI** 10.1055/s-0039-1681732

**Aims** Early colorectal cancer is defined as a carcinoma confined to the submucosa, regardless of lymph node (LN) status. The risk of LN metastasis in early colon cancer is ranging from 6.3% to 17%, and submucosal invasion more than 1000um, lymphovascular invasion (LVI), poor differentiation and tumor budding are well-known risk factor. We aimed to clarify the risk factors for LN metastasis early colorectal cancer.

**Methods** We retrospectively analyzed the clinicopathologic features of endoscopically resected 326 submucosal invasive colon cancers from 2007 to 2017. Of them, we analyzed 141 tumors which underwent subsequent colectomy with lymph node dissection because of unfavorable pathologic findings.

**Results** The overall LN metastasis rate was 18.4% (26/141). In the univariate analysis, LVI (p = 0.017) and tumor budding (p = 0.008) were associated with LN metastasis. In the multivariate analysis, LVI and tumor budding were significantly associated with LN metastasis (odds ratio [OR], 3.824; confidence interval [CI], 1.146 – 12.824; p = 0.029 and OR, respectively) and moderately-differentiated adenocarcinoma was also associated with LN metastasis (OR, 2.808; CI, 2.808 (1.047 – 7.529); p = 0.040). Submucosal depth was not associated with LN metastasis both in univariate and multivariate analysis.

**Conclusions** In this study, LVI, tumor budding, and moderately-differentiated adenocarcinoma were associated with LN metastasis in endoscopically resected submucosal invasive colorectal cancer which underwent subsequent radical colectomy with LN dissection. Submucosal invasion depth was not associated with LN metastasis.

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**ePP194 LONG-TERM OUTCOMES OF COLORECTAL ENDOSCOPIC SUBMUCOSAL DISSECTION: EXPERIENCE IN A WESTERN CENTRE**

**Authors** Arellas Anta J1, Cañete Ruiz Á1, Álvarez-Nava Torrego T1, Piedracoba Cadahía C1, De la Cruz Esteban DR1, Rodríguez Carrasco M1, Romero Romero E1, Del Pozo García A1, Díaz Tasende JB1, Marín Gabriel JC1

**Institute 1** Gastroenterology, University Hospital Doce de Octubre, Madrid, Spain

**DOI** 10.1055/s-0039-1681733

**Aims** To analyze long-term follow-up after endoscopic submucosal dissection (ESD) and to compare recurrence rates according to different variables.

**Methods** Prospective data from ESD performed were collected on an ‘intention to treat’ basis, from September 2008 to December 2015. When ESD was not possible to achieve, KAR was performed, either “en bloc” or piecemeal (pKAR). Kaplan-Meier survival curves were used to assess the 5 years recurrence rate and results were compared according to different factors (type of resection, en bloc vs. piecemeal resections, R0 vs. R1 resections, lateral margins (LM) involvement, histology and location) using log-rank test.

**Results** 89 patients were initially included. 20 were excluded: 11 for having less than 6 months follow-up and 9 because of the need of surgery (3 for delayed perforations, 2 for technical difficulties and 4 because the histology showed deep submucosal invasion).

Finally, 69 patients were included. ESD was performed in 31 of these patients, KAR in 11 and pKAR in 27. Median follow-up was 27 months (range 6 – 60). “En bloc” rate was 60.9% and R0 rate 31.0%. Histology according to Vienna classification was: 33, 3% Vienna 3, 65.2% Vienna 4 and 1.5% Vienna 5 (sm1).

Recurrence rate at Syear was 19%. The average number of endoscopies needed to eliminate recurrence was 2 (range 2 – 7) and no patient needed surgery for this reason.

Recurrence rate was significantly higher in piecemeal resections vs. en bloc resections (27.2% vs. 15.7%, p = 0.036) and R1 resections vs. R0 resections (26.3% vs. 0% p = 0.034). The presence of affected or unknown lateral margins in “en bloc” resections without other poor prognosis factors had higher recurrence rates without statistical significant differences (28% vs. 0% p = 0.09).

**Conclusions** In our study the 5 year disease free survival rate was 81% and no patient needed surgery during follow-up. Piecemeal and R1 resections had significantly higher recurrence rates and LM involvement showed higher recurrence rates without statistical significance.

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**ePP195 OUTCOMES OF ENDOSCOPIC SUBMUCOSAL DISSECTION (ESD) AT THE ANO-RECTAL JUNCTION AND ILEOCECAL VALVE**

**Authors** Iapicaci F1, Grossi C1, Saito Y1, Elisei W1, Gotoda T1, Costamagna C1

**Institute 1** UOC Gastroenterology & Endoscopy, Ospedale dei Castelli, Ariccia, Rome, Italy; 2 Endoscopy Department, National Cancer Center Hospital, Tokyo, Japan; 3 Division of Gastroenterology and Hepatology, Nihon University School of Medicine, Tokyo, Japan; 4 Surgical Endoscopy Unit, Policlinico Gemelli Foundation IRCCS, Catholic University Rome, Roma, Italy

**DOI** 10.1055/s-0039-1681734

**Aims** Endoscopic resection difficulty of superficial neoplasms at the perineal rectum is related to the narrowness of the anal canal and high intraoperative bleeding. Resection at the ileocecal valve (ICV) is difficult due to the variable anatomy and the possible neoplasm extension into the terminal ileum. Aim was to assess ESD outcomes of neoplasms at the perineal rectum and ICV.

**Methods** Prospective study (January 2012 to March 2018) in a single center. All consecutive superficial neoplasms > 20 mm in the perineal rectum (margin < 30 mm from the ano-rectal junction, ARJ) and on ICV lips scheduled for ESD were included. Controls: neoplasms > 20 mm in the pelvic rectum and cecum/ascending colon, respectively. ESD was performed by the standard technique. Follow-up was scheduled at 3 and every 6 months.

**Results** Perineal Rectum. 32 neoplasms in the perineal rectum were compared to 63 controls. ARJ involvement was observed in 14 (44%) perineal cases; a circumferential extension > 50% in 15 (47%) perineal cases and 4 (7%) controls (P < 0.0001).

ICV: 14 neoplasms at ICV were compared to 96 and 39 in the ascending colon and cecum, respectively. Neoplastic ileal extension was observed in 5 (36%) ICV cases. ESD technical and clinical outcomes are reported in the Table. Adverse events were not different according to location. Perforations occurred in 1 (2.5%) case in the cecum, 2 (2%) in the ascending colon, and 2 (3%) in the pelvic rectum. Residual rate for neoplasms at the ICV and in the cecum was significantly higher than in the ascending colon (P = 0.014 and P = 0.064, respectively). Residual rate for neoplasms in the perineal rectum was higher than in pelvic rectum (P = 0.072).

**Conclusions** ESD at the ICV and perineal rectum is effective but R0 resection rate are < 80% in the cecum and in the perineal rectum. A careful endoscopic follow-up is mandatory.
ePP196  FACTORS ASSOCIATED WITH DIFFICULTY IN PROPHYLACTIC CLIP CLOSURE AFTER ENDOSCOPIC MUCOSAL SECTION OF LARGE COLORECTAL POLYPS

Authors  Ortiz O1, Pellise M2, Rex DK3, Grimm IS4, Moyer MT5, Hasan MK6, Taveira F1, Areia M1, João M1, Elvas L1, Alves S1, Brito D1, Saraiva S1, Renteln D14, Crockett SD4, Rastogi A15, Gill JA16, Law RJ17, Elias P8, Mackenzie TA18, Pohl H19

Institute 1 Hospital Clinic de Barcelona, Barcelona, Spain; 2 Gastroenterology, Hospital Clinic de Barcelona, Barcelona, Spain; 3 Indiana University School of Medicine, Indianapolis, United States; 4 Division of Gastroenterology and Hepatology, University of North Carolina School of Medicine, Chapel Hill, United States; 5 Division of Gastroenterology and Hepatology, Penn State Hershey Medical Center, Hershey, United States; 6 Center for Interventional Endoscopy, Florida Hospital, Orlando, United States; 7 Division of Gastroenterology, Beth Israel Deaconess Medical Center, Boston, United States; 8 Division of Gastroenterology and Hepatology, Medical University of South Carolina, Charleston, United States; 9 Division of Gastroenterology and Hepatology, Johns Hopkins Hospital, Baltimore, United States; 10 Division of Gastroenterology and Hepatology, Johns Hopkins University, Washington DC, United States; 11 Department of Gastroenterology and Hepatology, Dartmouth Geisel School of Medicine, Lebanon, United States; 12 Section of Digestive Diseases, Yale-New Haven Hospital, New Haven, United States; 13 Division of Gastroenterology, John D. Dingell Veterans Affairs Medical Center and Wayne State University, Detroit, United States; 14 Division of Gastroenterology, University of Montreal Medical Center (CHUM) and Research Center (CRCHUM), Montreal, Canada; 15 Division of Gastroenterology, Hepatology and Motility, University of North Carolina School of Medicine, Chapel Hill, United States; 16 Division of Gastroenterology James A. Haley VA, University of South Florida, Tampa, United States; 17 Division of Gastroenterology and Hepatology, University of Michigan, Ann Arbor, United States; 18 Department for Biomedical Data Science, The Dartmouth Institute, Lebanon, United States; 19 Section of Gastroenterology and Hepatology, Dartmouth Geisel School of Medicine, White River Junction, United States

Methods  This is a post-hoc analysis of a multicenter, randomized trial (CLIP procedure characteristics that reflect more difficult resections. Expertise in clipping of such lesions and investigation in improving clipping technique is needed to maximize clip closure and minimize bleeding risk of EMR.

Tab. 1

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Complete closure N = 338 polyps</th>
<th>No complete closure N = 156 polyps</th>
<th>Adjusted OR (95% CI)</th>
<th>p (adjusted)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access difficulty</td>
<td>*Easy, n (%)</td>
<td>*Severe, n (%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>323 (70.7)</td>
<td>15 (40.5)</td>
<td>134 (29.3)</td>
<td>29 (59.5)</td>
<td>1.00</td>
</tr>
<tr>
<td>Mucosal-Lifting</td>
<td>*Complete, n (%)</td>
<td>*Incomplete, n (%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>288 (73.8)</td>
<td>45 (46.4)</td>
<td>103 (26.2)</td>
<td>52 (53.6)</td>
<td>1.00</td>
</tr>
<tr>
<td>Piecemeal resection</td>
<td>*No, n (%)</td>
<td>*Yes, n (%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>46 (95.8)</td>
<td>292 (65.5)</td>
<td>2 (4.2)</td>
<td>154 (34.5)</td>
<td>1.00</td>
</tr>
</tbody>
</table>

Conclusions  In this multicenter study incomplete closure of the mucosal defect after EMR of large colorectal polyps was associated with polyp and procedure characteristics that reflect more difficult resections. Expertise in clipping of such lesions and investigation in improving clipping technique is needed to maximize clip closure and minimize bleeding risk of EMR.

ePP197  SHOULD WE USE THE SMSA AND SERT SCORES TO PREDICT OUTCOMES IN COLONIC PIECEMEAL EMR?

Authors  Taveira F1, Areia M1, João M1, Elvas L1, Alves S1, Brito D1, Saraiva S1, Cadime AT1

Institute 1 Portuguese Oncology Institute of Coimbra, Coimbra, Portugal

Aims  Predicting outcomes after piecemeal endoscopic mucosal resection (pEMR) is a major concern with the development of scores such as SMSA, predicting the complexity of excision, or SERT predicting the negative risk for recurrence after pEMR. We intended to apply both scores to a pEMR cohort and understand if SMSA and SERT have clinical applicability in this setting.

Methods  Single center, prospective cohort of pEMR of colon lesions ≥20 mm, since 2009, with retrospective application of SMSA and SERT scores. Evaluation of patients and lesions characteristics, risk factors for endoscopic recurrence and correlation with score result with recurrence (SMSA = 4 in favor, SERT = 0 against). Statistical analysis included descriptive statistics, Qui² test and multivariable regression.

Results  Analyzed 302 lesions, in 296 patients, 58% men with median age of 70 years. Lesions had a median size of 30 mm (IQR 15), in the right colon in 51%. Paris classification is in 51% and Ila in 24%; LST granular type in 86%; Paris classification Is in 51% and IIa in 24%; LST granular type in 86%; Paris classification Is in 51% and IIa in 24%; LST granular type in 86%; Paris classification Is in 51% and IIa in 24%; LST granular type in 86%; Paris classification Is in 51% and IIa in 24%; LST granular type in 86%; Paris classification Is in 51% and IIa in 24%; LST granular type in 86%; Paris classification Is in 51% and IIa in 24%; LST granular type in 86%; Paris classification Is in 51% and IIa in 24%; LST granular type in 86%; Paris classification Is in 51% and IIa in 24%; LST granular type in 86%; Paris classification Is in 51% and IIa in 24%; LST granular type in 86%; Paris classification Is in 51% and IIa in 24%; LST granular type in 86%; Paris classification Is in 51% and IIa in 24%; LST granular type in 86%; Paris classification Is in 51% and IIa in 24%; LST granular type in 86%; Paris classification Is in 51% and IIa in 24%; LST granular type in 86%; Paris classification Is in 51% and IIa in 24%; LST granular type in 86%; Paris classification Is in 51% and IIa in 24%; LST granular type in 86%; Paris classification Is in 51% and IIa in 24%; LST granular type in 86%; Paris classification Is in 51% and IIa in 24%; LST granular type in 86%; Paris classification Is in 51% and IIa in 24%; LST granular type in 86%; Paris classification Is in 51% and IIa in 24%; LST granular type in 86%; Paris classification Is in 51% and IIa in 24%; LST gra...
Hybrid resection techniques (Hybrid EMR-Hybrid ESD) have been described to facilitate complete removal of flat lesions. They may be useful in cases when the snare slips, which may happen in Laterally-Spreading lesions of the non-granular type (LST-NG), fibrosis due to previous resection attempts, and fatty tissue in the submucosa among other factors. However, endoscopists not experienced in ESD may not feel confident doing a circumferential incision with a dedicated knife or the tip of a snare, and it would not be safe if they are not adequately trained in this technique.

In this report, we introduce a new hybrid EMR technique especially useful when the snare slips when closed by the operator. After submucosal injection, a circumferential incision is made using a biopsy forceps, with subsequent bites around the target lesion. This incision allows to fix the snare avoiding slippage when it is squeezed. The lesion is finally cut with cold or hot technique. We have applied this technique in three colonic cases: 1) 7-mm flat lesion, slippage of snare was not adequately fixed to abundant fatty tissue in the submucosa; 2) 15-mm LST-NG flat lesion. 3) 15-mm residual lesion (Lla Paris Classification), slippage was related to fibrosis secondary to an incomplete previous ESD. In this case, a semi-circumferential incision was made with the tip of a K-snare (Pentax), and then it was completed with a biopsy forceps; finally, a piecemeal resection with cold snare was successfully done (Video 1). Histology in all cases showed tubular adenomas with low grade dysplasia.

Hybrid-biopsy EMR is a simple method, to complete removal of flat lesions, devices needed are widely available, the cost is low, and it could be done safely by endoscopists not experienced in ESD. Improved design of biopsy forceps with rotability could make this technique even easier to apply.

Aims: Endoscopic retrograde cholangiopancreatography (ERCP) of the intraduodenal papilla with an invisible orifice remains challenging. Several techniques have been introduced for eversion of the papillary opening to facilitate cannulation.

Methods: The submucosal injection of 2-4 ml of normal saline at single or multiple points enables intraduodenal papillary eversion. The important step is selecting the best inflations point to preserve the bile duct opening and to keep papillary eversion.

Results: A 79-year-old woman received ERCP for bile duct stones, which revealed that the papilla was located inside a large diverticulum and it tended to rotate inward on a trial of papillary cannulation. The submucosal injection of 3 cc of normal saline was done on 3 and 9 o’clock of the papilla. Eversion and fixation of a papilla in the diverticulum by this technique allowed selective cannulation of the biliary tree. After cannulation into biliary tree, stones were retrieved after endoscopic papillary balloon dilation without complications. She had an uneventful post procedural course.

Conclusions: Our findings suggest that submucosal saline injection technique is safe and effective for selective cannulation and could be recommended in the condition, which cannulation is very difficult because of intraduodenal papilla.

**Abstracts**

**ePP198V HYBRID-BIOPSY ENDOSCOPIC MUCOSAL RESECTION: AN EFFECTIVE AND SIMPLE TECHNIQUE FOR FLAT COLORECTAL LESIONS**

**Authors** Fraille-López M1,2, Jawhari A2, Sansone S2, Budihal S2, Parra-Vila JJ1, González G1, Aburruza L1, Carvalho J2, Costa J3, Parra-Blanco A2

**Institute 1** Gastroenterology, Hospital Universitario Central de Asturias (HUCA), Oviedo, Spain; **Institute 2** NHIR Nottingham Biomedical Research Centre, Nottingham University Hospitals NHS Trust and University of Nottingham, Nottingham, United Kingdom


Hybrid resection techniques (Hybrid EMR-Hybrid ESD) have been described to facilitate complete removal of flat lesions. They may be useful in cases when the snare slips, which may happen in Laterally-Spreading lesions of the non-granular type (LST-NG), fibrosis due to previous resection attempts, and fatty tissue in the submucosa among other factors. However, endoscopists not experienced in ESD may not feel confident doing a circumferential incision with a dedicated knife or the tip of a snare, and it would not be safe if they are not adequately trained in this technique.

Here we report a new hybrid EMR technique especially useful when the snare slips when closed by the operator. After submucosal injection, a circumferential incision is made using a biopsy forceps, with subsequent bites around the target lesion. This incision allows to fix the snare avoiding slippage when it is squeezed. The lesion is finally cut with cold or hot technique. We have applied this technique in three colonic cases: 1) 7-mm flat lesion, slippage of snare was not adequately fixed to abundant fatty tissue in the submucosa; 2) 15-mm LST-NG flat lesion. 3) 15-mm residual lesion (Lla Paris Classification), slippage was related to fibrosis secondary to an incomplete previous ESD. In this case, a semi-circumferential incision was made with the tip of a K-snare (Pentax), and then it was completed with a biopsy forceps; finally, a piecemeal resection with cold snare was successfully done (Video 1). Histology in all cases showed tubular adenomas with low grade dysplasia.

Hybrid-biopsy EMR is a simple method, to complete removal of flat lesions, devices needed are widely available, the cost is low, and it could be done safely by endoscopists not experienced in ESD. Improved design of biopsy forceps with rotability could make this technique even easier to apply.

**ePP203 PAPILLARY CANNULATION FACILITATED BY SUBMUCOSAL SALINE INJECTION INTO THE INTRADIVERTICULAR PAPILLA**

**Authors** Park SM1

**Institute 1** Internal Medicine, Chungbuk National University Hospital, Cheongju, Korea, Republic of


**Aims**: Endoscopic retrograde cholangiopancreatography (ERCP) of the intraduodenal papilla with an invisible orifice remains challenging. Several techniques have been introduced for eversion of the papillary opening to facilitate cannulation.

**Methods**: The submucosal injection of 2–4 ml of normal saline at single or multiple points enables intraduodenal papillary eversion. The important step is selecting the best inflation point to preserve the bile duct opening and to keep papillary eversion.

**Results**: A 79-year-old woman received ERCP for bile duct stones, which revealed that the papilla was located inside a large diverticulum and it tended to rotate inward on a trial of papillary cannulation. The submucosal injection of 3 cc of normal saline was done on 3 and 9 o’clock of the papilla. Eversion and fixation of a papilla in the diverticulum by this technique allowed selective cannulation of the biliary tree. After cannulation into biliary tree, stones were retrieved after endoscopic papillary balloon dilation without complications. She had an uneventful post procedural course.

**Conclusions**: Our findings suggest that submucosal saline injection technique is safe and effective for selective cannulation and could be recommended in the condition, which cannulation is very difficult because of intraduodenal papilla.

**ePP204V “HITCH AND RIDE” TECHNIQUE FOR BLIND PANCREATIC DUCT CANNULATION**

**Authors** Vila J1, González G1, Aburruza L1, Carvalho J2, Costa J2, Carrascosa J1, Fernández-Urién I1, Albéniz E1, Pueyo A1

**Institute 1** Endoscopy Unit. Gastroenterology Dpt., Complejo Hospitalario de Navarra, Pamplona, Spain; **Institute 2** Gastroenterology Dpt., Hospital Lisboa Norte, Lisboa, Portugal; **Institute 3** Gastroenterology Dpt., Hospital de Braga, Braga, Portugal


**Case**: A 72 year old patient suffered a biliary pancreatitis with wall-off pancreatic necrosis endoscopically drained and solved after two sessions of endoscopic necrosectomy. Biliary sphincterotomy was performed for suspected common bile duct stones. The transmural stent was retrieved and from then on the patient complained of epigastric pain with elevation of acute phase reactants. CT showed two new peripancreatic collections with mild dilation of the pancreatic duct, suggesting pancreatic duct disruption. Pancreatic ERCP was planned but the duodenal folds were edematous with stenosis of the duodenal lumen, precluding identification of the ampulla. The duodenoscope was placed facing the theoretical location of the ampulla under fluoroscopic control. Injecting contrast we could see a depression in the wall corresponding to the ampulla with the sphincterotomy which was blindly cannulated. Since we could see the biliary guidewire exiting the duodenoscope, a cannula with a
preloaded guidewire and a slit on the tip was snapped onto the biliary guidewire and advanced over it (“hitch and ride” technique) until the theoretical location of the ampulla with fluoroscopic control. Once there, the preloaded guidewire was advanced exiting the cannula tip more caudally because of the slit, in a more convenient orientation for pancreatic duct cannulation. After a couple of attempts and blind adjustments of the cannula position we could easily cannulate the pancreatic duct with the second guidewire only under fluoroscopic control. Pancreatic ductography confirmed pancreatic duct disruption and a pancreatic stent was placed into the fistulous tract. The patient clinical status improved and was discharged asymptomatic (Video).

Conclusion The “hitch and ride” technique was initially described to facilitate biliary cannulation during EUS-guided rendezvous. After getting some experience in this setting we could successfully use it to cannulate blindly the pancreatic duct in this case of smoldering pancreatitis with difficult management.

Saturday, April 6, 2019

14:00 – 14:30

GERD

**ePP205  ENDOSCOPIC TRANSORAL FUNDOPLICATION WITH MUSE FOR GASTROESOPHAGEAL REFUX DISEASE: RESULTS OF A SINGLE CENTER STUDY**

**Authors** D’Avresa F1, Familiaro P2, Landi R1, Mangiola F1, Bose V1, Perri V1, Gasbarrini A3, Costamagna G1

**Institute** 1 Fondazione Policlinico Universitario A. Gemelli IRCCS, Roma, Italy; 2 UOC Endoscopia Digestiva, Fondazione Policlinico Universitario A. Gemelli IRCCS, Rome, Italy; 3 Dipartimento Dipartimento Medicina Interna, Gastroenterologia e Oncologia Medica, Fondazione Policlinico Universitario A. Gemelli, Roma, Italy

**DOI** 10.1055/s-0039-1681741

**Aims** This retrospective, chart review of prospectively collected data evaluates the clinical outcomes of patients who were treated with MUSE for GERD in a single center.

**Methods** All patient who underwent MUSE at our endoscopy center between May 2015 and June 2018 were retrospectively identified from a prospective database, collected and analyzed. The procedure was offered to patients with GERD who required and responded to pharmacological therapy. Symptoms were evaluated with a validated clinical score – GERD-HRQL score – and by monitoring the use and dosage of PPI. Clinical success was defined by >50% reduction of the dosage of PPI and by the GERD-HRQL score (≥50% reduction compared to baseline or normalization [<10] of the score).

**Results:**

<table>
<thead>
<tr>
<th>patients (19)</th>
<th>Baseline 19 patients with f/u</th>
<th>Last follow-up (mean 14 months) 19 patient</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>PPI usage median GERD-HRQL (SD)</td>
<td>100% (± 7.5)</td>
<td>32% (± 11.2)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>median % TRT (SD)</td>
<td>14.7% (± 9.81)</td>
<td>6.24% (± 7.05)</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td>median DeMeester Score (SD)</td>
<td>50.17 (± 40.49)</td>
<td>30.34 (± 42.6)</td>
<td>0.17</td>
</tr>
</tbody>
</table>

A total of 25 patients underwent MUSE during the study period (mean age 52 ± 13), 64% males. Five patients did not complete the minimum 6-month follow-up and were excluded from analysis. One patient was lost to follow-up immediately after treatment. A median follow-up of 13.9 (6 – 36) months was available for 19 patients. At the date of the last visit, clinical success was achieved in 69% of patients (11 patients discontinued PPI and 2 patients take <50% of the initial dosage). GERD-HRQL score was normalized or improved by ≥50% compared to baseline in 11 patients (58%). % TRT score was normal in 10/15 patients (66.6%) with post-operative pH-monitoring study.

**Conclusions** Our study confirms the safety and efficacy of the MUSE procedure for the treatment of GERD.

**ePP206  ULTRASOUND-GUIDED TRANSORAL FUNDOPLICATION FOR THE TREATMENT OF GASTROESOPHAGEAL REFUX DISEASE: RESULTS UP TO 24 MONTHS FROM A SINGLE-CENTER PROSPECTIVE STUDY**

**Authors** Testoni PA1, Mazzoleni G1, Distefano G1, Testoni SG1, Antonelli M1, Fanti L1, Passaretti S1

**Institute** 1 IRCCS San Raffaele Scientific Institute – Vita-Salute San Raffaele University, Milan, Italy

**DOI** 10.1055/s-0039-1681742

**Aims** Transoral incisionless fundoplication (TIF) with the MUSE system is a new ultrasound-guided intervention for the treatment of gastroesophageal reflux disease (GERD). Aim of this study was to assess the safety of TIF with MUSE and its effects on clinical, pathophysiological and endoscopic results.

**Methods** TAF with MUSE was performed in a series of consecutive patients (pts) with symptomatic GERD, in a single-center study. All pts underwent GERD-Related Quality of Life (GERD-HRQL) and Reflux Symptom Index (RSI) questionnaires, upper gastrointestinal endoscopy, 24h esophageal pH-impedance recording and high-resolution esophageal manometry (HRM) before, 6 months and 12 months after TIF (HRM only before and 6 months after). Symptoms questionnaires and proton pump inhibitors (PPIs) consumption were also investigated at 24 months. Data were compared to baseline using Fisher test for frequencies and Wilcoxon test for nonparametric data.

**Results** Thirty-seven pts underwent TIF. In two cases it wasn’t possible to perform esophageal intubation with the endostapler and perforation occurred in two cases. Clinical follow-up was completed in 29, 23 and 16 pts at 6, 12 and 24 months, respectively. Compared to baseline, median symptoms scores and PPIs consumption were significantly improved after TIF. Endoscopic follow-up was completed in 28 and 22 pts at 6 and 12 months, with 5 and 4 pts who had esophagitis, respectively. Pathophysiological follow-up was completed in 19 and 15 pts at 6 and 12 months, respectively. Compared to baseline, 6 months after TIF there were a significantly lower number of acid, proximal and total refluxes, detected by esophageal impedance and a significantly increase of lower esophageal sphincter length, esophagogastic junction contractile integral (EGJ-CI) and of peristaltic waves rate, detected by HRM.

**Conclusions** Our data showed TIF by MUSE safe and effective, allowing a significant improvement of symptoms scores and a significant reduction of PPIs consumption and refluxes number, detected by esophageal impedance.

**ePP207  ANTI-REFLUX MUOCOSECTOMY (ARMS) IN THE TREATMENT OF REFRACATORY GASTRO-ESOPHAGEAL REFUX (GERD): PILOT STUDY EVALUATING THE FEASIBILITY AND SAFETY**

**Authors** Gonzalez JM1, Irazaraval R1, Basile P1, Le Mouel JP1, Barthet M1

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**DOI** 10.1055/s-0039-1681743

**Aims** There is no validated endoscopic treatment of GERD. Esophageal mucosectomy is a reference technique, and induce a tissue shrinking at the esogastric junction (EGJ). Thus, we propose a pilot study to evaluate the feasibility and the safety of the ARMS procedure in refractory GERD, and to document its efficacy (disappearance of the main symptom and RDQ score).

**Methods** This was a monocentric retrospective study of consecutive patients with GERD refractory to PPI’s, without motility disorder, treated by ARMS. Patients with esophagitis or a hiatal hernia > 2 cm were excluded. The procedures were performed in ambulatory, with a therapeutic gastroscopy, CO2 insufflation, and using the Duette system (Cook Endoscopy, USA). A mucosectomy of the 3/4 of the circumference of the EGJ was performed, extended
to both esophageal and gastric sides. The patients received oral PPI for one month and were evaluated every 3 months.

**Results** 19 patients were included, aged of 53 years old [32 – 88]. The main symptom was pyrosis in 74% of cases (n = 14), the others being regurgitations, thoracic pain, recurrent cough/sinusitis.

The procedure was feasible in 100% of the cases. There were no acute complications. Six patients (30%) had moderate dysphagia at one month, three of them requiring one single endoscopic dilatation (12 mm).

The follow-up was 6 to 18 months, and five patients were lost on follow-up. Among the 14 other, the efficacy on the main symptom was complete in 57.4% of cases, partial in 7.1% and absent in 35.3% of the cases. A significant decreasing of RDQ was observed after the treatment 41.2 ± 6.7 vs. 20.1 ± 5.1 (p = 0.0026).

**Conclusions** ARMS for treating refractory GERD is simple, feasible and safe, and could be realized in ambulatory. The efficacy rate was 64.5%, but has to be clarified, after a technical standardization of the procedure and rigorous selection of patients.

Saturday, April 6, 2019 14:00 – 14:30 ePoster Podium 5

**ePP208 Efficacy of Endoscopic Vacuum Assisted Closure Treatment for Postoperative Anastomotic Leak of Gastric Cancer**

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**DOI** 10.1055/s-0039-1681744

**Aims** Endoscopic vacuum assisted closure (EVAC) has been attempted as new non-surgical treatment option for anastomotic leakage. We evaluate the clinical outcomes of EVAC and compare efficacy with self-expandable metallic stents (SEMS) in post-gastrectomy leakage.

**Methods** Between Jan 2010 and Feb 2018, total 39 cases of anastomotic leak after gastrectomy for treatment of gastric cancer were reviewed. Twenty-eight patients were treated with SEMS only, 7 patients were treated with EVAC after SEMS failure, and 4 patients were treated with EVAC only. We compared clinical characteristics and therapeutic outcomes between EVAC (N = 11) and SEMS (N = 28).

**Results** Median follow up duration of EVAC and SEMS were 17 months (range, 0 – 48). All cases treated with EVAC were healing successfully (100%) and did not occurred mortality. Two cases of treatment failure (7.1%) including 1and case of mortality (3.6%) were occurred in patients who treated with SEMS. Median duration of EVAC treatment (15 days [6 – 47]) was shorter than SEMS (36 days [7 – 108]; p < 0.001). Relatively larger size leakage was treated successfully with EVAC (median 2.1 cm [1.5 – 3.3] in EVAC and 1.0 cm [0.2 – 2.5] in SEMS; p < 0.001). Median weight loss at first outpatient department visit after treatment was 8 kg (3 to 15) in EVAC and 9 kg (2 to 20) in SEMS. The duration of antibiotics use was similar between two groups as median 27.5 days (10 – 94) and 23.5 days (0 – 79). After EVAC therapy, 1 case of anastomotic stenosis was occurred at 147 days after EVAC removal. (9.1%). In SEMS therapy, 4 cases (14.3%) of anastomotic stenosis occurred at median 102 days (29 – 319).

**Conclusions** EVAC can be effective endoscopic treatment option for post-gastrectomy anastomotic leak. Considering of the leak size may be important when determining treatment options. Further large number randomized controlled trials are needed to define efficacy of EVAC.

**ePP209 Combination Endoscopic Therapy Using Endospponge and Over-the-Scope-Clip for the Therapy of Complex Gastrointestinal Leaks and Dehiscences**

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**DOI** 10.1055/s-0039-1681745

**Aims** To evaluate the success, safety and complications rates of an endoscopic approach using sponge and over-the-scope clips to close large endoluminal GI defects.

**Methods** Retrospective, observational study at two institutions during a 24-months period. The following over-the-scope clips were used preferentially 12/6t, and 12/6gc and 14/6t. The sponge (Braun Melsungen, Germany) was used as manufactured or adapted to the size of the defect.

**Results** During the study period we treated a total of 13 patients (9 male, 4 female, mean age 58.9 years; range 38 to 73) with large fistulae or perforations. The mean ASA score was 3.5, range 3 – 4. Seven patients were critically ill at the time of consultation, with large perforation or intrabdominal abscess. The etiology of the GI defects involving the esophagus (n = 3), stomach (n = 3), small bowel N = 2) and colon (n = 5), including Boerhaave’s syndrome (n = 2), leak after gastric sleeve n = 2, colorectal anastomotic leak n = 5, lung abscess with tracheoesophageal fistula (n = 1), combined retroperitoneal and pleural abscess (n = 1), enterocutaneous fistula in Crohn’s (n = 1), radiation-induced rectovesical fistula (n = 1). The defects were treated sequentially by endoscopic lavage and debridement, followed by insertion of sponge. Once the cavity decreased in size the sponge was exchanged or removed and the smaller diameter defect was closed using one or more over-the-scope clips. The mean number of procedures was 3, range 2 – 5. Successful closure of the GI defect and resolution of the abscess was achieved in eight patients (61%). There were no adverse events related.

**Conclusions** The use of combination sponge and over-the-scope clip appears promising for the treatment of complex GI endoluminal defects, especially when patients are poor surgical candidates and are critically ill. In up to 60% of patients the therapy was successful, suggesting that this approach should be added to the armamentarium of the advanced endoscopist.

**ePP210 Standardized Proactive Endoscopic and Surgical Interventions for Management of Patients with Boerhaave Syndrome to Reduce Mortality: A Retrospective Analysis**

**Authors** Wichmann D1, Herrmann L1, Mothes B1, Schweizer U1, Königsrainer A1, Schempf U2, Goetz M2, Steger V3, Loske G4, Stueler D1

**Institute** 1 Department of General, Visceral and Transplantation Surgery, University of Tübingen, Tübingen, Germany; 2 Department of Gastroenterology, Hepatology, and Infectiology, University of Tübingen, Tübingen, Germany; 3 Department of Cardiothoracic and Vascular Surgery, University of Tübingen, Tübingen, Germany; 4 Department for General, Abdominal, Thoracic and Vascular Surgery; Interdisziplinäre Endoskopie, Marienhospital Hamburg, Hamburg, Germany

**DOI** 10.1055/s-0039-1681746

**Aims** Boerhaave Syndrome (BS) is a post emetic transmural rupture of the oesophagus. It is a devastating event associated with a high morbidity and mortality rate. Enteric leakage into the thoracic or abdominal cavity causes mediastinitis, sepsis and multisystem organ failure. New strategy combining minimal invasive tools and interdisciplinary therapy was introduced to treat patients with a rupture of the oesophagus following a standard operating procedure.
Methods We review treatment results of BS patients treated in a 10 year period started in 2007 at our university hospital.

Results 12 patients with BS were detected during this period. All BS-patients were treated at intensive care units. One patient died within 72 days of the oesophageal rupture. Patients treated following the interdisciplinary strategy survived sepsis and recovered independently of latency between start of symptoms and start of therapy.

Conclusions Proactive interdisciplinary approach following the SOP in patients with BS was associated with a mortality rate of 8.33% and a 30-days-mortality of 0% respectively. We present this successful treatment strategy for patients with BS.

Conclusions This pilot study showed that a complete WE colonoscopy is feasible in children, appearing to be a useful and safe method. Though no conclusions can be drawn on the basis of this study alone, our results should reasonably prompt future randomized prospective studies.

Aims To demonstrate our own experience with endoscopic balloon dilatation (EBD) in children with partial GOO caused by after ulcerous stenosis of the antral part of the stomach.

Methods From June 2013 to November 2018 we treated six children with diagnosis "GOO" caused by after ulcerous stenosis of the antrum. We offered EBD as an alternative to surgery. Endoscopic balloon dilatation was performed under general anesthesia using endoscopes Olympus and through-the-scope esophageal/pyloric dilating balloons Boston Scientific and Balton with variable diameters from 6 to 12 mm.

Results Surgical resection of the antral-pyloric region was performed to one child because her parents wanted. The other five children were successfully applied EBD. Patients underwent 1 – 10 dilating sessions (mean 4.8/patient). Estimated antrum diameter prior to dilation ranged from 2 mm to 6 mm (mean 3.0). Following dilation, diameter of the antrum increased to 10 to 12 mm (mean 11.0) at final endoscopy. In patients requiring a single dilating session (n = 1), predilation antrum size was 6 mm, which increased to of 10 mm. In patients requiring multiple dilating sessions (n = 4), pre-dilation antrum size was a mean of 2.25 mm (range 2 – 3 mm), which increased to a mean of 11.25 mm (range 10 – 12 mm). All patients had good long-term response, with follow-up of 2 – 62 months (mean 27.4). To get sustainable results in maintaining patency of the gastric outlet is necessary to conduct a series of repeated EBD, the amount of which depends on the individual characteristics of the child.

Conclusions Endoscopic balloon dilatation is an effective method of restoring patency output of the stomach, which avoids surgery. It can be recommended as a method of choice for children with partial GOO caused by after ulcerous stenosis.

Aims The prevalence of colonic polyposis is higher in acromegalic patients compared to normal population. Only one study shows an increased prevalence of polyps in small bowel in acromegalic population.

Methods A prospective, comparative, observational study was performed in patients with acromegaly. The presence of polyposis was evaluated in this population, comparing it against patients with CE due to other causes (abdominal pain, chronic diarrhea and anemia). Gastric transit time (GTT) and intestinal transit time (ITT) of the CE, incomplete visualization and complications were also analyzed.

Results There were included 61 patients per group, acromegalic patients (AC) had a median age of 55.9 years old (IQR 46, 64) and 37.7% were female, non-acromegalic patients (NAC) had a median age of 56 years (IQR 37, 69) and 62.3% were female. The CE GTT of the AC was 26 min (IQR 10, 96) and 23 min (IQR 12, 51) in the NAC group (p = 0.844). The CE ITT of the AC was 302.26 min (± 115.35) and 263.37 (± 102.68) in the NAC (p = 0.019). The small bowel incomplete visualization in the AC was of 9 cases (14.8%) and 11 cases (18%) in the NAC. There were 6 (9.8%) patients with polyps found in the CE of the AC group and 1 patient with polyps (1.6%) in the NAC group, with an odds ratio of 6.54 (95% CI, 0.76 – 56.10, p = 0.052). There were no complications in either group.

Conclusions Patients with AC showed a higher CE ITT and more small bowel polyps with a statistically significant tendency.

Aims Water-aided methods for adult colonoscopy have received renewed attention in the literature in recent years. Published studies evaluating water exchange (WE) colonoscopy have shown a reduction in procedural pain and postprocedural discomfort, with a higher completion rate. This pilot study aimed to evaluate feasibility and safety of water-aided methods for adult colonoscopy performed in pediatric patients.

Methods From August 2015 to December 2016, 10 consecutive pediatric patients who underwent a total of 11 colonoscopies were enrolled for the study. All adverse events were recorded. All quantitative variables were recorded, including procedure time, cecal insertion time and withdrawal time, the average colonoscope length following cecal insertion, and sedation dosage.

Results Comparison between infused and aspirated water was made to evaluate a correct application of WE technique. The WE method improved the mean bowel cleansing. No adverse events were recorded during the procedure, or in the next 24 hours.

Conclusions This pilot study showed that a complete WE colonoscopy is feasible in children, appearing to be a useful and safe method. Though no conclusions can be drawn on the basis of this study alone, our results should reasonably prompt future randomized prospective studies.
IS IT POSSIBLE TO PREDICT THE INFLAMMATORY ACTIVITY OF SMALL BOWEL CROHN'S DISEASE IN CAPSULE ENDOSCOPY USING THE ICCE CRITERIA?

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Aims A score to predict the indication for small bowel capsule endoscopy (SBCE) in patients with suspected small bowel Crohn's disease (CD) was proposed in 2006 at the International Conference on Capsule Endoscopy (ICCE). The Lewis score and the Capsule Endoscopy Crohn Disease Activity Index (CECDAI) scores are the most used endoscopic scores to evaluate the inflammatory activity in SBCE. The authors aimed to evaluate the usefulness of the ICCE criteria to predict the severity of small bowel CD in SBCE.

Methods Retrospective, single center study, including 49 SBCE of patients with small bowel CD. The ICCE criteria of each patient and LS and CECDAI scores of SBCE were evaluated and compared.

Results The mean age was 42.4 years (+13.4). 59.2% of patients were females and 65.3% fulfill the ICCE criteria for SBCE. The median LS and CECDAI scores were 565 and 9.0 (IQR: 2251386 and 6.016.5), respectively. Patients without ICCE criteria had median [IQR] LS of 1012.0 [266.5 – 1354.0] and CECDAI of 12 [8.5 – 17.5] compared to 395.0 [225.0 – 1510.0] (p = 0.4) and 9.0 [4.5 – 15.0] (p = 0.3) in patients with ICCE criteria. No correlation between the sum of items evaluated by the ICCE criteria with the LS (p = 0.5) and CECDAI (p = 0.5) was found. A good correlation between the LS and CECDAI was confirmed (Rho = 0.875, p < 0.001).

Conclusions Although the ICCE criteria are useful to select patients with suspected CD to perform SBCE, these criteria are not useful to predict the severity of small bowel inflammatory activity in patients with established CD. Although the LS is more widely used, CECDAI is easier to calculate and has good correlation with LS.

DIAGNOSTIC YIELD AND ACCURACY OF SMALL BOWEL ULTRASONOGRAPHY COMPARED TO CAPSULE ENTEROSCOPY FOR THE DIAGNOSIS OF SMALL BOWEL DISEASES

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Aims Capsule enteroscopy (CVE) is considered the reference standard for the assessment of small bowel disorders since it has the highest diagnostic yield for the detection of luminal and mucosal alterations. There are no studies comparing CVE with small bowel ultrasonography (B-US): the aim of this study was to compare the diagnostic yield of CVE and B-US in the diagnosis of small bowel disorders.

Methods We retrospectively enrolled 159 patients undergoing CVE and B-US for the following indications: obscure gastrointestinal bleedings, suspect or follow-up of known complicated celiac disease, chronic diarrhea or malabsorption syndromes. The interval between the two exams had to be inferior to one year. We evaluated the diagnostic yields of the two techniques. The accuracy of small bowel ultrasonography was determined using CVE as the reference standard.

Results The diagnostic yields calculated in the whole sample were 55% for CVE and 33% for B-US (P < 0.05). The subgroups analysis showed that CVE ability to detect pathological signs is higher; there was a statistical significant difference between the diagnostic performances of the two techniques in patients with OGB (62% vs. 14%, P < 0.05) and suspect or known complicated celiac diseases (55% vs. 35%, P < 0.05), while the difference was not statistically significant among patients with chronic diarrhoea and malabsorption syndromes (51% vs. 46%, P = 0.8).

Conclusions Compared to B-US, CVE is more accurate to detect lesions in patients with OGB and suspect or known complicated celiac disease. B-US could have a role in the screening of celiac disease complications, as it was able to detect patients with severe complications (RCD II, EATL, adenocarcinoma). In patients with chronic diarrhea and malabsorption syndromes the use of CVE should be proposed earlier in the diagnostic process for its ability to detect clinically relevant lesions.
ePP201 DIGESTIVE PERFORATIONS RELATED TO ENDOSCOPY PROCEDURES BEFORE AND AFTER ESGE GUIDELINES: A LOCAL MANAGEMENT CHARTER BASED ON LOCAL EVIDENCE AND EXPERTS OPINION

Authors Roche M1, Bertrand G2, Rivory J3, Saurin JC4, Robert M5, Valette PJ6, Rostain F2, Ponchon T2

Institute 1 Gastroenterology and Endoscopy, Edouard Herriot Hospital, Belmont d’Azergues, France; 2 Gastroenterology and Endoscopy, Edouard Herriot Hospital, Lyon, France; 3 Edouard Herriot University Hospital, Lyon, France; 4 Edouard Herriot Hospital, Lyon, France; 5 Digestive Surgery, Edouard Herriot Hospital, Lyon, France; 6 Radiology, Edouard Herriot Hospital, Lyon, France


Aims Perforations are a known side effect of endoscopic procedures. A proposal for appropriate management should be available in each center and shared with radiologists and surgeons as recommended by ESGE. The objective of our study was to analyze retrospectively the results of perforation management in our center before and after 2016, in order to create a management charter based on local evidence and opinion of local experts.

Methods Patients were included if they underwent partial or complete perforation, during an endoscopy. We compared the management and its results in two different periods before (2008–2015) and after the creation of a comprehensive local database (2016–2018). With these results, a panel of experts was questioned to propose a consensual management charter.

Results 105 patients with digestive perforation were included (51 between 2008 and 2015 and 54 after 2016). Perforations occurred mainly during therapeutic procedures (86.7%), with a significant increase since 2016 (96.3 versus 76.5%) (p = 0.002). Totally, 78 (74.3%) perforations were diagnosed immediately and closed during the procedure, with a clinical success of 88.5%. Closure was more effective in therapeutic (90.9%) than in diagnostic procedures (75.0%, p = 0.06). For perforations <0.5 cm, regardless of location, endoscopic closure was effective in 97.4%, compared to 76.5% beyond 0.5 cm (p < 0.05). For perforations <0.5 cm, systematic CT scan, antibiotics or surgical evaluation did not improve results.

Conclusions The detection of perforations and their closure during the procedure clearly improves the prognosis of patients with much less recourse to salvage surgery. Detection of perforations could become a quality criterion for endoscopic procedures. For incomplete (target sign) and complete perforations <0.5 cm, endoscopic closure is almost always effective and therefore, the surgical evaluation, antibiotic therapy and CT scan could not be systematic but only in case of symptoms of leakage.

ePP200 COLON POLYPECTOMY: PROSPECTIVE ANALYSIS OF RISK FACTORS FOR MAJOR COMPLICATIONS

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Aims Endoscopic excision of lesions in the colon is generally safe and decisively contributes for avoiding colorectal cancer. Complications such bleeding or perforation are well established. We intend to study the complications after colon polypectomy at our unit and to understand the risk factors associated.

Methods Prospective cohort study with registration of all polypectomies between October 2013 and October 2018, in a single center. Evaluation of patients' characteristics (comorbidities, medication), lesions' characteristics (location, size, morphology, SMSA score), complications and outcomes. Statistical analysis included descriptive statistics, Qui² test and multivariable regression.

Results Performed 3732 polypectomies, in 1761 patients, median age 66 years (IQR 8). Use of antiaggregant in 8% (n = 299), direct-acting oral anti-
52.3%, 84.6% and 65%, 54.8%, 33.3%, 81.8%, respectively and for score ≥3 89.4%, 51.9%, 62.7%, 84.4% and 25%, 76.5%, 27%, 74.6%, respectively.

**Conclusions** In a cohort of Greek hospitalized patients Dik score ≥2 predicts sufficiently those with inadequate bowel preparation before colonoscopy. Moreover, among bedridden patients Dik score ≥3 can be used to further increase sensitivity without affecting specificity.

*Dik et al. Predicting inadequate bowel preparation for colonoscopy in participants receiving split-dose bowel preparation... Gastrointestinal Endoscopy 2012.

**eP4 ESOPHAGEAL RETENTION OF RESIDUE FROM N-ACETYL-CYSTEINE CAPSULE IN PATIENTS UNDERGOING UPPER GASTROINTESTINAL ENDOSCOPY**

Authors Park JM1, Lee SH1, Lee SJ1, Park SC1, Kang CD1, Nam SJ1

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**Aims** N-acetylcysteine (NAC) is a mucolytic agent, and NAC solution has been used to improve visibility during upper gastrointestinal (UGI) endoscopy. On the other hand, NAC capsule may leave a residue in the esophagus and interfere clear mucosal visualization. This study aimed to assess the frequency of esophageal retention of residue from NAC capsule during UGI endoscopy.

**Methods** From January 2017 to December 2017, a total of 153 patients had 156 UGI endoscopy performed while taking NAC capsules. The endoscopic findings were reviewed retrospectively.

**Results** Esophageal retention of NAC capsule residue was observed in seven cases (4.5%). The mean age of patients was 66.0 ± 23.2 years old and four patients were female (57.1%). A patient underwent three endoscopic examinations during the study period, and the residue was observed only when the patient took the NAC capsule. Primary endoscopic diagnoses were sloughing esophagitis in 3 cases (42.9%) and only one case was correctly diagnosed as residue from NAC capsule (14.3%).

**Conclusions** Residue from NAC capsule, which may stay in the esophagus, interferes clear mucosal visualization and it can be misdiagnosed as esophagitis.

**eP5 FOCAL MYOSITIS AFTER ENDOSCOPIC MUCOSAL RESECTION OF COLON LST**

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**Aims** Gastrointestinal endoscopic mucosal resection (EMR) is a procedure to remove early-stage cancer and precancerous growths from the lining of the digestive tract. Post-polypectomy coagulation syndrome, thermal injury, bleeding, perforation, peritonitis, appendicitis could happen after EMR. Myositis following EMR was focused on this study.

**Methods** 58-year-old male was diagnosed with 2 cm-sized cecal LST (laterally spreading tumor). He was referred to our hospital and admitted for treatment. He had a history of surgery for left colon cancer and ampulla of vater cancer. EMR was performed, and 8 h after the procedure, the patient experienced severe right inguinal pain with fever of 38.2°C. Laboratory test revealed a WBC count of 33910/mm³, neutrophil count for 26720/mm³, CRP level of 10.6 independently leading to inflammatory response. Whole abdomen CT was performed, and there was an abnormally swelling of right iliac muscle with perimysicular fluid collection. Notably, there was no abnormality in the right colon at the site where EMR was performed on CT. Myositis of the right iliac muscle was diagnosed. Intravenous antibiotics (piperacillin/tazobactam) was initiated on the next day after EMR, and massive fluid therapy with crystalloid was performed. After administering antibiotics for 3 days, there was no longer fever and laboratory test revealed a WBC count of 14470/mm³ and CRP level of 5.12. The patient got improved and discharged on 8th post-polypectomy day. Pathological analysis revealed a cecal tubular adenoma with moderate dysplasia.

**Results** Several predictable causes can exist such as post-polypectomy coagulation syndrome (PPCS), transmural burn syndrome, infection after submucosal saline injection. Also, it is possible that more than one mechanism contributes to the inflammatory process.

**Conclusions** Here, we reported a case of focal myositis following EMR of a cecal LST, which was successfully treated with antibiotics. Myositis of the iliacus muscle following EMR is extremely rare and cecal EMR may be rare cause of myositis.

**eP6 INFLUENCE OF ENDOSCOPIST EXPERIENCE, COMORBIDITIES AND PATIENTS AGE ON THE COMPLICATIONS AND DOSE OF SEDATION ON ENDOSCOPIC ULTRASOUND**

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**Aims** To investigate the influence of endoscopist experience and patient related factors on the complications and dose of sedation by EUS.

**Methods** Our retrospective study included EUS investigations performed between 01/2015 – 10/2018. An experienced endosonographer has performed at least 150 EUS examinations including 50 interventions. Sedation related complications were defined as cardiorespiratory instability with oxygen saturation drop below 85% and/or prolonged hypotonia.

**Results** 469 EUS were analyzed (39.3% interventional). The median dose of Propofol and Midazolam were: 140 (30 – 540) mg and (1 – 7) mg, respectively. Sedation related complications were documented in 1.5% of cases. All patients had a transient, no fatatal respiratory insufficiency.57.2% of the patients who developed complications were >75years. Cardiac and/or pulmonary comorbidities were present in 85.7% of patients with complications. The endosonographer experience did not influence the complications rate (57.1% vs.42.9%, p = 0.99). The Propofol dose was significantly higher in interventional vs. diagnostic EUS:200 (30 – 480) mg vs.120 (30 – 540) mg, p < 0.0001. The Midazolam dose was similar: 3 (1 – 7) mg vs. 3 (2 – 7) mg, p = 0.06. In both diagnostic and interventional EUS, patients with comorbidities and older age received significant less sedation. Experienced endosonographers used less sedation than trainees (Table1).

**Tab. 1 Factors influencing dose of sedation by EUS**

<table>
<thead>
<tr>
<th>Factor</th>
<th>EUS-Diagnostic Propofol (mg)</th>
<th>EUS-Interventional Propofol (mg)</th>
<th>EUS-Diagnostic Midazolam (mg)</th>
<th>EUS-Interventional Midazolam (mg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A: Male, B: Female</td>
<td>A:120 (30 – 540)</td>
<td>B:110 (30 – 400)</td>
<td>p = 0.52</td>
<td>A:185 (30 – 420)</td>
</tr>
<tr>
<td>A: 3 (1 – 7) B: 2</td>
<td>A:3 (1 – 7) B: 2</td>
<td>A:3 (1 – 7) B: 2</td>
<td>A:3 (1 – 7) B: 2</td>
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**Conclusions** Sedation-related complications occurred only in 1.5% of cases.
eP7 PROPOFOL SEDATION IN COLONOSCOPY: FROM SATISFIED PATIENTS TO IMPROVED QUALITY INDICATORS

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Aims Propofol mediated sedation (PMS) is safe and is clearly associated with increased patient satisfaction. However, whether it results in a favourable effect on colonoscopy outcomes and performance compared to standard sedation with benzodiazepines/opiates remains unclear. This current study aims to determine the effect of PMS on colonoscopy quality measures compared to traditional sedation.

Methods A large cohort of 44,794 patients who underwent sedated colonoscopies over a 15-year period were included. Colonoscopy quality indicators including polyp detection rate (PDR), cecal intubation rate (CIR) as well as terminal ileum intubation rate (TIR) were examined in benzodiazepines/opiates sedated patients and compared with PMS group. Within PMS group a dose-dependent effect was assessed, and outcome of endoscopist directed PMS procedures were compared with anaesthesia provider PMS groups. Adjustments for potential confounders such as age, sex, quality of bowel preparation, procedural setting and indication was performed.

Results Patients who received PMS were more likely to have an enhanced PDR (22.8% vs. 20.9%; P < 0.001), as well as CIR (90.4% vs. 87.3%; P < 0.001), and TIR (6.4% vs. 1.6%; P < 0.001). In multivariate analysis, these findings were maintained, as PMS use was significantly associated with improved PDR (OR = 1.08, 95% CI = 1.03 – 1.13; P = 0.029), CIR (OR = 1.33, 95% CI = 1.25 – 1.42; P < 0.001) and TIR (OR = 4.72, 95% CI = 4.19 – 5.31; P < 0.0001). In the PMS group, a clear dose dependent effect was demonstrated. In the same group anaesthesia-provider administered PMS was associated with an increased PDR (26.3% vs. 22.5%; P < 0.01), but not with an improved CIR (84.1% vs. 91%; P < 0.001) or TIR (6.6% vs. 3.8%; P < 0.01).

Conclusions Propofol mediated sedation during colonoscopy is associated, in a dose-dependent manner, with a better examination performance and improved outcomes. Further prospective or randomised trials to support these findings are warranted.

eP8 USE OF MOBILE PORTABLE ENDOSCOPIST UNIT FOR GASTRO-INTESTINAL DISEASES IN RESOURCE LIMITED RURAL REGION OF INDIA: WHAT WERE THE OUTCOMES?

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DOI 10.1055/s-0039-1681760

Aims The aim of this study was to evaluate the role of mobile portable endoscopy unit in patients with gastro-intestinal diseases in resource limited areas of rural India.

Methods The current study is a retrospective cohort study which included patients from rural areas of central part of two states from four centers during period of May 2017 to September 2018. Endoscopic procedures were performed in patients with gastrointestinal complaints either for outpatients or admitted inpatients, using portable mobile endoscopy unit (TELE PACK X GI by Karl Storz Endoskope, Germany).

Results Total 256 endoscopic procedures were performed in 248 patients. Endoscopic procedures were performed for both inpatients and out patients were 22.3% (57/256) and 77.7% (199/256) respectively. Of the 256 procedures, 162 were males, and 86 were females. Upper GI endoscopy (UGE) was performed in 184 and Colonoscopy in 72 patients. Dyspepsia (27%) and altered bowel habits (20.6%) was the most common symptom for performing upper GI endoscopy and colonoscopy. Reflux esophagitis (44.6%) was the most common finding in UGE performed. The incidence of esophageal varices – 22.8%, hiatus hernia and gastric varices – 9.8%, the incidence of carcinoma esophagus was more than carcinoma that is, 2.1% and 1.1% respectively. Incidence of colonic polyp was 7.2%. Therapeutic procedures during UGE 28.3% (52/184) and colonoscopy 11.1% (08/72) were also performed under propofol sedation and monitored by trained anesthesiologist. No procedure or sedation related complications occurred. Endoscopic variceal band ligation and polypectomy were the most common therapeutic procedures performed in 56.6% and 11.6 respectively.

Conclusions Reflux esophagitis was the most common finding in diagnostic study and variceal band ligation was most common therapeutic procedure performed. Performing both diagnostic and therapeutic endoscopy using mobile portable endoscopy unit is safe and carries significant positive health impact on population in resource limited rural areas.

eP9 ENDOSCOPY FOR PATIENTS PRESENTING WITH ACUTE UPPER GASTROINTESTINAL BLEEDING ON A DEDICATED SATURDAY IN-PATIENT LIST

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Aims We aimed to investigate patients’ outcomes and the impact on services following establishment of a Saturday in-patient endoscopy list in our center.

Methods We retrospectively reviewed and analysed upper Gastro-Intestinal (UGI) endoscopy reports for all patients presenting with UGI bleeding patients who were scoped on Saturday in-patient list between 01/07/2017 & 21/04/2018. We assessed patients’ demographics, time interval between referral & text, length of stay (LOS) post procedure, 4 weeks post procedure morbidity/mortality and the use of therapeutic interventions among the patients.

Results 72 gastroscopies were done for AUGIB within the selected period. 7 patients (10.6%) needed repeat gastroscopy within 4 weeks after the initial procedure (6 patients due to suspected re-AUGIB), while 5 patients (8%) died within 4 weeks. 1 patient’s death was related to AUGIB. Two patients died after 4 weeks secondary to non AUGIB related cause. 7 patients were then excluded due to prolonged hospital stay post gastroduodenoscopy because of non AUGIB reasons. A subgroup consisting of the remaining 58 patients who were discharged was further analysed. Mean age is 65.9 +/- 18.4 years. The mean time interval between referral and having the test was 1.05 +/- 0.83 days. The median LOS post procedure was 3 days (IQR: 25% = 2, 75% = 5.25). Mortality rate & number of patients requiring endoscopic therapy was higher among the group who had the test within 24 hours of referral compared to other patients; (9.1% Vs 0.00%, p Value = 0.33) & (24.4% Vs 11.8%, p Value = 0.48) respectively. 13 patients (22%) were discharged over the weekend.

Conclusions Establishing a dedicated elective Saturday in-patient endoscopy list is safe, feasible and beneficial. It has shortened the hospital stay for a good portion of patients. AUGIB patients who get scoped within 24 hours of presentation will likely need therapeutic intervention.

eP10 CLINICAL AND ENDOSCOPIC ASPECTS OF METASTASES TO THE GASTROINTESTINAL TRACT

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Aims Characterize the endoscopic aspects of metastases to the gastrointestinal tract and analyze the survival rate of this patients.

Methods A retrospective, single-center, observational study, between January 2009 to December 2017. All patients with metastatic lesions to the GI tract with histological confirmation were included. Hematologic cancers, Kaposi sarcoma and tumors with direct invasion were excluded.

Results In this period, 54,478 endoscopic exams were performed and 95 patients had diagnosis of GI metastasis (GIMs). There were 49 men and 46 women, with a mean age of 58.9 years. The principle indication for endoscopy was abdominal pain (31.6%) and the most common primary malignancy was melanoma (25.3%), followed by lung (15.8%) and breast cancer (14.7%).

Conclusions Melanoma, breast and lung cancer were the most common metastasis to the GIT. The stomach was the main site of the metastatic lesions.

eP11 ERCP WITH THE PENTAX ED 34-I10T2 WITH DISPOSABLE ELEVATOR CAP VERSUS STANDARD DUODENOSCOPE

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Aims The germ-free processing of endoscopes is a central issue regarding patient safety in endoscopy. Especially duodenoscopes with the additional mechanism of the albarran lever are critical. With the ED 34-I10T2 Pentax Medical introduced a new duodenoscope. It is almost identical to the standard duodenoscope but it contains a disposable elevator cap which has to be changed after every use.

Methods We investigated the ED 34-I10T2 in routine clinical practice and compared it to the standard duodenoscope regarding time to the papilla duodeni, time until intubation of the common bile duct and time for the manual pre-cleaning of the endoscope. Furthermore the examiner and the endoscopic nurse were questioned about the subjective handling during endoscopy and the cleaning of the endoscope. Complications were recorded.

Results We did 37 ERCPs with the standard duodenoscope and 34 ERCPs with the ED 34-I10T2. The average time to the papilla duodeni was similar with 73.5 vs. 81.2 seconds. The time until intubation of the common bile duct was on average 745.7 seconds vs. 391.3 seconds. The mean time for the manual pre-cleaning was 305 seconds vs. 324.9 seconds. Because of heterogeneous individual values there was no statistical significance. With the standard duodenoscope there was one bleeding after papillotomy and two patients with a post-ERCP pancreatitis. With the ED 34-I10T2 there was one bleeding and one post-ERCP pancreatitis.

Conclusions In summary there was no significant difference between the new ED 34-I10T2 with the disposable elevator cap and the standard duodenoscope regarding handling, complications and time for the examination or cleaning in clinical practice.

The risk of cross-contamination with potential infectious germs could be reduced.

eP12 WHO SHOULD ADMINISTER SEDATION DURING ERCP – ANESTHESIOLOGIST, INTENSIVIST OR ENDOSCOPIST? A COMPARATIVE PROSPECTIVE STUDY

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Aims To compare safety and effectiveness of sedation during ERCP (sERCP) regarding which medical doctor directs it.

Methods A comparative prospective non-randomized study done in daily practice. Consecutive patients who underwent to ERCP were collected at two centers. January 2017-May 2018. Sedation was directed either by an endoscopist (endoscopist-directed propofol: EDP), on Monday or by an intensivist (intensivist-administered propofol: IAP), on Wednesday or by an anesthesiologist (monitored anesthesia care: MAC), on Thursday. The safety was measured by the appearance of serious adverse events (SAE) and the effectiveness, by the cancelled ERCP rate, sedation time and patient position that determined ease of ERCP and quality of radiologic images.

Results 454 patients (Age: 72.7 ± 15.7y; women: 54.63%): 147 into EDP group, 137, IAP group and 170, MAC group. The endoscopist had the largest experience in sERCP (>100 procedures): 98%, p = 0.000 and he administered only propofol in 81.9%, the intensivist administered propofol plus midazolam in 78.7% and anesthesiologist, propofol plus other agents (i.e. opioids, ketamine) in 86.2%, p = 0.000. The sedation was deepest in MAC, Observer’s (OAAS): 5.19 ± 0.6, p = 0.000. The SAE rate was 8.6%, lowest in EDP: 4.8%, p = 0.042. The SpO2 < 70% was the most frequent SAE: 4.5%, highest in MAC: 6.1%, p = 0.085 and it had required more respiratory resuscitation measures (chin-lift maneuver, increasing of FIO2 or Guedel airway insertion) in MAC and IAP than EDP, p = 0.003. The tracheal intubation was most frequent in MAC: 1.8%, p = 0.074. Concerning effectiveness, the highest cancelled ERCP rate was observed in MAC: 2.9%, p = 0.015. Similarly, in this group the lateral decubitus position was most frequent (31.6%, p = 0.000), which determined the worst radiologic image (17.8%, p = 0.000). The sedation time was shortest in IAP: 44.4 ± 1.8 min, p = 0.023.

Conclusions Our data suggest that sERCP is safer and more effective when is administered by an expert nursing team directed by an endoscopist.
transfusion of one unit of blood, endoscopy was performed under general anesthesia.

**Results** The stomach was filled coffee ground material and food rests. Reaching the migrating Endobarrier was impossible with a gastroscope. Thus a colonoscope was used. The metallic barbs were seen but they were anchored against the mucosa, causing lacerations and bleeding. Therefore, the scope was removed and a "colon" overtube (US Endoscopy) with a pediatric colonoscope was inserted into the stomach. The third duodenum was reached. Fluoroscopy assistance was necessary to locate the overtube, scope and also the metal barbs of the Endobarrier. Once the anchor site was reached we were able to collapse the anchor using the grasper and always under Fluoroscopy for visualization. The barbs were slowly but steadily pulled into the overtube and the device was detached from its embedded site and gradually brought into the stomach (Figure, Video). Once in the stomach we continued to pull the whole anchor into the overtube. We checked with both endoscopic and fluoroscopic views to ensure everything was safely in the tube and fully removed the device out of the esophagus. Relook endoscopy showed no active bleeding. A through-the-scope water-soluble contrast enterography demonstrated luminal integrity without leaks or perforation. The patient's clinical status improved and he was discharged home two days later.

**Conclusions** This case demonstrates a severe complication of endoscopic duodenojejunal bypass device (Endobarrier) and its endoscopic resolution using techniques and measures from the "extreme endoscopy toolbox".

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**eP15  RISK STRATIFICATION AT THE FRONT DOOR FOR NON-VARICEAL GI BLEEDS AND ITS EFFECT ON GI REFERRAL AND ENDOSCOPIC ASSESSMENT**

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**DOI** 10.1055/s-0039-1681766

**Aims** Upper gastrointestinal bleeding (UGIB) has high inpatient mortality and so early risk-stratification is essential. We seek to establish the impact of non-specialist risk stratification with Glasgow-Blatchford score (GBS) on timing of specialist referral and endoscopy. An electronic proforma had been introduced to the emergency and medical departments to improve this process.

**Methods** 40 patients admitted to a university hospital between January and July 2018 with non-variceal UGIB were identified. The following information was collected: the score (or retrospectively calculated score if not done by the admitting clinician), time to referral to specialty, time to endoscopy.

**Results** GBS was documented in 25%. Those with GBS of 0–1 were discharged without referral to specialty or inpatient investigations more often. 67% of low risk patients were referred within 24h if GBS was not calculated. When GBS was not calculated, 33% with scores 0–1 had a next day endoscopy. When GBS was calculated 0% with score 0–1 underwent endoscopy.

**Conclusions** The electronic tool was practically not used and only a quarter of patients on admission were risk-stratified using a GBS score. There seems to be excess referrals for specialty assessment for low risk patients when there is no subjective risk assessment. Whether GBS was calculated or not, the referral time to the GI team does not seem to correlate with the score. This implies that the application of GBS may not be well understood among non-specialist clinicians. There might be factors such as time of the assessment (in- vs. out-of-hours when the GI team are not on site), comorbidities (e.g. ongoing sepsis or the patient is too frail for endoscopy) and subjective assessment of the risk instead of an objective one that guide the admitting clinician to the referral and need for a scope.

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**eP16  KEEPING UP WITH THE TIMES: USE OF ADJUVANT TECHNOLOGY BY IRISH GASTROENTEROLOGY TRAINEES**

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**DOI** 10.1055/s-0039-1681767

**Aims** Use of accessory devices and additional techniques in upper and lower endoscopy is always evolving. Incorporating this equipment into routine practice requires initiative often depending on the budget of the unit and the endoscopy department itself.

The aim was to establish the availability and use of specialised equipment and accessory devices readily available to trainees in Ireland.

**Methods** A survey was distributed to gastroenterology trainees working in Ireland over a four week period. Use of foot pump, scope guide, CO2, sime- ticone, endocuff, cap, NBI, and chrono-endoscopy was explored in addition to patient repositioning.

**Results** There were 31 respondents; 29 were included for analysis. Responses were identified from 10 hospital sites. Only 48% of trainees have a formal training list and 52% have been scop- ing for 4 years or more. Typically 39% of trainees use a foot pump and 38% use a scope guide for colonoscopy. Lack of availability (82%, 47% respectively) was frequently cited among non-users. Only 38% typically use CO2 during colonoscopies while just 10% use simeticone. 78% reported CO2 wasn’t always available to them, whereas trainees don’t find simeticone useful (35%). To aid polyp detection 68% typically re- position the patient. Trainees that don’t report they don’t find repositioning useful (56%). Almost two thirds of trainees typically use NBI. Those who don’t report lack of confidence (33%). Only 18% typically use a cap for polypcystery. Among non-users, 35% haven’t been taught how to use it. Only 11% typically use endocuff. Among non-users, 36% said it wasn’t readily available to them. Only 26% typically use histo-endoscopy (methylen blue/acetic acid).

**Conclusions** Many newer accessory devices and technology are not utilised amongst trainees mainly due to lack of availability or training. Addressing these issues may improve quality of endoscopy training in Ireland.
dardised reporting scores. Among non-users 67% report that they forget to use them and 33% report it takes too much time. The majority at 96% always use the Prague Classification to describe Barrett’s.

**Conclusions** Frequently trainees don’t utilise endoscopic classifications. Improved education and awareness will help improve current practice.

**eP18 USE OF REPORTING DATABASE FOR QUALITY ASSURANCE**

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**DOI** 10.1055/s-0039-1681769

**Aims** Quality assurance is been a major priority in endoscopy of late. The endoscopy reports databases that we use are capable of asserting most of the quality performance measures proposed by ESGE. We aimed to set the database so the key performance measures from the 2017 ESGE guidelines could be obtained automatically.

**Methods** After setting the database we obtained the key performance measures from all the colonoscopies from January 1st 2018 to October 31st 2018.

**Results** We evaluated 1054 colonoscopies. Overall, the rate of adequate bowel preparation 95.4%, the cecal intubation rate was 97.3%, the adenoma detection rate was 44.6%, the appropriate polypectomy technique was 99.9%, complication rate was 0.1% and patient experience was good or excellent in 90% of patients. We could not assess the appropriate post-polypectomy surveillance recommendations.

**Conclusions** Once the report database is correctly set, the obtention of the key quality performance measure is easy and fast. This can help endoscopy units and endoscopist obtain accreditation.

**eP19 INFLUENCE FACTORS ON CECAL INTUBATION RATE AS A QUALITY AND PERFORMANCE MEASUREMENT IN COLONOSCOPY**

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**DOI** 10.1055/s-0039-1681770

**Aims** Colonoscopy is a common performed procedure in Gastroenterology, and it’s widely used for diagnosis, treatment and surveillance of a wide range of conditions and symptoms. Properly performed, it’s generally safe, more accurate than a virtual colonoscopy and well-tolerated by patients. The completion of a colonoscopy is defined by cecal intubation with the visualization of colonic mucosa and distal terminal ileum when it’s possible.

**Methods** We reviewed retrospectively all consecutives endoscopies database of the lower digestive tract, done over a period from 2014 – 2017 in our clinic. The recommended completion based on the latest guidelines range from 90 – 95% completion rate according to the indication.

**Results** 11214 consecutive colonoscopies were done. Overall cecal intubation was successful in 9456 procedures(87.3%). If we exclude the interventionnal procedures (414 procedures), where cecal intubation was not necessary, the main reasons of non-intubation were due to intolerance of the patients (388 patients), followed on the second place by patients with obstructive cancer (299 patients). The presence of diverticulosis, poor preparation for colonoscopy and post- surgical adhesions were significant findings in non-successful procedures.

**Conclusions** In normal daily practice, colonoscopy is completed in 88.01% of the procedures but we think that this result will stimulate the efforts to incorporate more quality measures and time in our endoscopy laboratory, by applying Quality Improvement Measures.

**eP20 EVALUATION OF DOSE RADIATION IN ENDOSCOPIC UNIT**

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**DOI** 10.1055/s-0039-1681771

**Aims** To evaluate our mean radiation exposure during endoscopic procedures.

**Methods** We randomized between september 2017 and june 2018, 255 endoscopic procedures realized under fluoroscopy. 5 experienced endoscopist work in 2 rooms (one with GE system, the other with Siemens system). The Kerma-area product (KAP) was retrospectively evaluated and classified according to the type of procedure.

**Results** Our global mean KAP differs between the two rooms (13 vs. 21 Gy-cm²). We independently analyzed the results for each type of procedures: for difficult ERCP procedure the difference persists (14 vs. 27) when the mean KAP was the same in the 2 rooms for bile duct stone removal (12 Gy-cm²). The mean KAP was the same for the two rooms for prosthesis removal (6 Gy-cm²), and evaluated only in room 1 for dilation (7 Gy-cm²), and digestive prosthesis (9 Gy-cm²).

**Conclusions** Our mean KAP were globally close to the more recent dose level reference. It differs between two rooms and the difference may be explained by different procedures in the both rooms. Usually the dose level reference are pooling in “therapeutic ERCP” which may induce different results depending on kind of procedures realized in the center. We propose a more precise mean value dose level reference to evaluated (taking into account also a standard situation especially results given for patients of 70 – 75 kg). In our center, this evaluation was done before a training in radiation exposure and will be repeated each year to verify the continuation of optimization.
ep22 THE GASTROPACK SYSTEM, A NOVEL METHOD TO ACCESS TO GASTROENTEROLOGICAL CARE: RESULTS OF THE UPPER GASTROINTESTINAL SYMPTOM POPULATION

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Aims Open-access system allows General Practitioners (GP) to directly schedule endoscopic procedures for their patients. A previous Italian multicentric study showed a rate of inappropriate EGD of 22.9% (29.4% with prescriptions from GP and 12.9% from specialists). This study aims to evaluate if the GASTROPACK SYSTEM (GS) may reduce not appropriate EGD.

Methods In GS, patient’s diagnostic work-up, including clinical consultations and/or abdominal ultrasound and/or endoscopic procedures, is scheduled on the basis of a multidisciplinary agreement between GP and gastroenterologists during a preliminary contact. GS has been implemented in a Hospital of a mountain area of Bologna AUSL, with 57,156 inhabitants, where open-access system was previously used. Patients (pts) characteristics, diagnostic work-up, time to first access and time to diagnosis were recorded. Prospective data of upper GI symptoms were analyzed in this study and compared with the open-access literature.

Results 1817 pts (M:F = 752:1065, mean age 61 ± 15.8) with upper GI symptoms were admitted to GS. Among them, 255 (M:F = 99:156, mean age 33 ± 8.7) were young (<45 years) and 1562 (M:F = 633:909, mean age 65.8 ± 11.6) were old (>45years), 68% (173/255) of young and 56% (877/1562) of old pts had EGD. According to ASGE criteria, we observed a rate of inappropriate EGD of 6.6% (70/1050): 18% (32/173) in young and 4% (38/877) in old pts. 37% (12/32) of inappropriate EGD in young and 50% (19/38) in old pts had a clinical significant endoscopic finding (CSF), with an overall rate of 44% (31/70) CSF. Mean time to diagnosis for CSF was 29 ± 35 days, while for cancer was 7 ± 14 days. Overall waiting time to first access was 25 ± 21 days for CSF, while for cancer was 17 ± 16 days.

Conclusions GS could reduce the rate of not appropriate EGD compared to previous data of open-access studies, increasing the prescriptive appropriateness of both GP and gastroenterologists.

ep24 ENDOSCOPIC MANAGEMENT OF POUCH STRICTURES AFTER ILEO-ANAL POUCH ANASTOMOSIS (IPAA)

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Aims Strictures are one of the most common complications after IPAA (3–17%). There may be at the site of ileo-anal anastomosis or at the pouch inlet due to fibrosis or local ischemia. They may result in evacuation problems, pouch dilatation and bacterial overgrowth. Most of them are webs that can be treated by finger dilatation or the use of dilators.

Methods We present clinical outcome and treatment strategy of patients with IPAA who developed post surgery pouch strictures of variable severity. In a total series of 670 patients with IPAA we investigated 65 patients with anastomotic strictures (9, 7%) and 6 patients with pouch inlet strictures (1.08%). Based on patients symptoms and digital examination we ordered pouchography, pouchoscopy and in selected cases CT/MRI enterography. Finally, different treatment modalities were applied.

Results 65 patients with anastomotic strictures presented with symptoms like increased frequency (95%), incontinence (84%), urgency (73%) and perianal irritation (58%). 55 were treated with digital dilatation under endoscopic view (mean 2.1 times). In 10 patients hegar/savary dilators were applied (mean 3.2 times) to achieve satisfactory dilatation. In 2 tight stricture cases cortical injection and knife knife cutting of circular fibrotic tissue was used and in 2 other cases endoscopic dilatation was possible after intubation of the efferent loop (rendez-vous). In most cases there was no need of hospitalization or systemic use of major analgesics. 6 patients with pouch inlet stricture presented mainly with abdominal pain (80%) and increased frequency (22%). All were treated surgically by local excision and anastomosis or by stricture bypass. Crohn’s disease was diagnosed in 2 patients.

Conclusions Anastomotic strictures after IPAA are relatively common but usually can be treated safely endoscopically by digital dilatation on ambulatory basis. Rarely, when pouch inlet strictures are developed surgical treatment is applied.

ep25 PREDICTIVE MODEL TO DETERMINE THE NEED OF REPEATING ERCP AFTER ENDOSCOPIC TREATMENT OF BILIARY LEAKS

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Aims Endoscopic retrograde cholangiopancreatography (ERCP) is the first-line procedure to iatrogenic biliary leaks approach. In patients who have undergone biliary stenting, the timing and optimal method of stent removal (ERCP/ esophagogastroduodenoscopy) is controversial. The present study aims to evaluate ERCP efficacy in biliary leaks treatment and identify patients in whom repetition of ERCP may be unnecessary.

Methods Retrospective, unicentric analysis of patients who underwent ERCP with sphincterotomy and biliary stent placement between 2008 – 2017 due to iatrogenic biliary leaks. All patients were repeated ERCP with removal of the stent(s). Factors associated with the outcome, resolution of the biliary leak and absence of another pathology in reevaluation ERCP, were identified.

Results 43 patients were included, 62.8% (n = 27) female, mean age 58.2 ± 17.2years. Most common etiology of biliary leaks was laparoscopic cholecystectomy (56.8%) and the most common location the cystic duct stump (53.5%). Technical success was 93.3%, with resolution of the biliary leak in 92.9%. On multivariate analysis, elective iatrogenic procedure (OR = 209.1, 95% CI 2.18–2050.8), normal total bilirubin (OR = 138.9, 95% CI 1.19–1627.2), ERCP performed in ≤ 7 days (OR = 32.9, 95% CI 1.08–1004.8) and removal of the stent in ≤ 12 weeks (OR = 40.7, 95% CI 1.11–1634.9) were independently associated with resolution of the biliary leak and absence of another pathology (p < 0.05 r² = 0.71). The area under the ROC curve of these criteria for outcome prediction was 0.93 (p < 0.001). When ≥ 3 criteria were present (42.9%), the model presented specificity of 100%, sensitivity of 58.1%, positive predictive value of 100% and negative predictive value of 45.8% in outcome prediction.

Conclusions We identified criteria that allow selection of 43% of patients in whom repetition of ERCP may be unnecessary. Biliary stents can be removed.
by esophagogastroduodenoscopy, increasing safety and efficiency of healthcare resources utilization.

**eP26 ENDOSCOPIC FINDINGS IN PATIENTS WITH BOWEL WALL THICKENING ON EMERGENCY ROOM CT SCANS**

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**DOI** 10.1055/s-0039-1681776

**Aims** Patients presenting to the Emergency Room with abdominal pain, fever or blood in stools often undergo an urgent CT scan, often revealing bowel wall thickening (BWT). The aim of the current study is to evaluate the significance of such BWT and assess predictors of significant pathology.

**Methods** Patients referred to gastroenterology service from the emergency department at Hamad Medical Corporation, Qatar between July 2015–July 2017 with BWT were retrospectively analyzed. Apart from the CT features, the correlation of endoscopic findings to the clinical presentation, inflammatory markers and histopathology were studied. Patients with known GI pathology, evidence of luminal obstruction, strictures and luminal mass on CT were excluded.

**Results** 109 of 160 patients referred were enrolled in the data analysis. Endoscopic appearance was normal in 37/109 (33.9%) of patients. 41/109 patients (37.6%) had significant chronic pathology – 21 IBD (19.1%) of which 13 CD (11.9%), 8 UC (7.3%), 9 TB (8.3%). 11 Malignancy (10.1%). 31/109 (28.4%) had mucosal abnormalities but normal or acute inflammation on histopathology.

Symptoms of diarrhea or pain > 2 weeks were the strongest predictor of significant findings on endoscopy. Other features such as blood in stool, fever and weight loss were also associated with having significant pathology. Laboratory parameters such as mean WBC, Hb, ESR, Albumin and CRP do not differ significantly. Mean Calprotectin was significantly higher in patients with IBD and TB (199.5 ± 299.8 vs. 809.8 ± 540.8; P < 0.001).

**Conclusions** One Third of the patients in the study had significant pathology (IBD/TB/Malignancy). Patients with upper GI BWT have low likelihood of significant pathology compared to lower GI BWT. Until further prospective data becomes available, endoscopic assessment may be warranted in most patients with bowel wall thickening on CT scans.

**eP27V ENDOSCOPIC VACUUM THERAPY FOR AN ESOPHAGEAL PERFORATION AFTER FOREIGN BODY INGESTION: RESOLUTION AFTER A SINGLE SESSION**

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A 70-year old man was admitted to the Emergency Department due to persistent chest pain after foreign body ingestion (chicken bone) five days before. He referred fever but denied dyspnea or other symptoms. Chest computed tomography revealed in the thoracic esophagus, in the same plane of the left cardiac atrium, a linear and dense formation with 30 mm, with esophageal perforation and presence of an adjacent collection (23 × 31 × 61 mm). After multidisciplinary discussion it was decided to try to remove the foreign body and close the esophageal defect endoscopically. Upper endoscopy was performed and revealed presence of a foreign body penetrated in the esophageal wall. The adjacent mucosa was congestive and purulent drainage was noticed. Foreign body was removed with forceps and a luminal defect with 5 mm was observed, compatible with esophageal perforation. Considering the associated presence of an adjacent collection it was decided to perform endoscopic vacuum therapy (EVT) to try to close the defect and treat the collection simultaneously. The sponge was placed in the lumen with an overtube. The patient was admitted on total parenteral nutrition, antibiotics and antifungal. Five days after, upper endoscopy was repeated with removal of the sponge.

On inspection, it was observed granulation tissue on the previous location of the defect, with apparent resolution of the perforation. Chest CT was repeated, with no contrast extravasation and significant improvement of the collection dimensions (27 × 17 mm). The patient completed antibiotic course, initiated oral diet and was discharged. He remains well in the follow-up. EVT is a promising approach for treatment of esophageal perforations. In this case only one session was necessary, with no need for sponge replacement, highlighting the efficacy and potential role of this technique for treating esophageal defects with associated collections.

**eP28 UTILITY OF GASTROSCOPY AT THE TIME OF COLONOSCOPY IN PATIENTS WITH IRON-DEFICIENCY ANEMIA REFERRED TO A COLORECTAL CANCER DETECTION PROGRAM**

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**Aims** Gastrointestinal lesions are present in 40% of patients with iron deficiency anemia (IDA). The utility of upper endoscopy and its timing are not well defined in guidelines. We aimed to assess the usefulness of a gastroscopy at the moment of colonoscopy in patients with IDA.

**Methods** Retrospective review of patients with IDA referred to our department in a colorectal cancer detection program from January to December 2015.

**Results** We evaluated 97 patients (50.5% men, age 74 ± 12, hemoglobin 104 ± 18 g/l). Colonoscopy alone was performed in 36 (37.1%), gastroscopy alone in 1 (1%), and both in 60 (61.9%). Gastroscopy preceded colonoscopy in 51, and was delayed in 9. The etiology of anemia was diagnosed in 55.7%. Colonoscopy detected lesions in 43 (44.8%) and gastroscopy in 12 (19.7%). Colorectal cancer was detected in 30 (31.1%). Gastric cancer was detected in 4 (6.6%). Gastroscopy was useful in 33.3% of patients without lesions detected by colonoscopy, but only in 7.4% of patients with lesions (p = 0.03). In patients with colorectal cancer gastroscopy was not useful in any case. Biopsies were obtained only in 13 (21.3%) gastroscopies (12 gastric; 4 duodenal). Helicobacter Pylori were detected in 6. No case of celiac disease was diagnosed. Biopsies were taken in 33.3% of the delayed gastroscopies and in 19.2% when performed before colonoscopy (p = 0.34).

**Conclusions** The combination of colonoscopy and gastroscopy was diagnostic in 54.6% of patients with IDA referred to a colorectal cancer detection program. Gastroscopy was not useful in patients diagnosed with colorectal cancer and its usefulness was low if other possible causes of IDA were detected at the time of colonoscopy. A negative colonoscopy for lesions related to IDA could encourage the endoscopist to perform systematic upper biopsies. In consequence, we suggest the colonoscopy should precede the gastroscopy.

**eP29 DIAGNOSTIC YIELD OF ENDOSCOPY FOR PREDICTION OF ACUTE GRAFT VERSUS HOST DISEASE IN THE UPPER GASTROINTESTINAL TRACT**

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**Aims** Intestinal graft-versus-host disease (GVHD) is a frequent complication after hematopoietic progenitor cell transplantation (HSCT) and biopsies are recommended for diagnosis. However, the best biopsy sites have yet not been...
clearly established and final histology results are often delayed as specific staining is required. We aimed to assess the diagnostic yield of endoscopy for prediction of GvHD of the upper gastrointestinal tract. In addition, we aimed to determine the best sites for obtaining biopsies for diagnosis of GvHD.

Methods A large scale retrospective cohort study was conducted. Patients diagnosed with acute GvHD in the upper gastrointestinal tract were included. Details included symptoms at time of referral for endoscopy, type of procedure performed, macroscopic findings on endoscopy, and histologic findings of biopsies obtained. Biopsies were graded with the Lerner score. Sensitivity, specificity, positive predictive value (PPV), and negative predictive values (NPV) were calculated.

Results A total of 101 patients (mean age 50.24, 44% female) underwent upper endoscopy and were diagnosed with intestinal GvHD. Mean Lerner score was 2.0, 1.5, 1.5, and 1.8 for the esophagus, antrum, corpus and duodenum, respectively. Sensitivity, specificity, PPV and NPV for endoscopic prediction of GvHD were inconclusive and not significantly (P > 0.05) different between the esophagus (Sensitivity = 54%, Specificity = 62%, PPV = 45%, NPV = 70%), antrum (Sensitivity = 53%, Specificity = 66%, PPV = 42%, NPV = 75%), corpus (Sensitivity = 50%, Specificity = 54%, PPV = 40%, NPV = 64%) and duodenum (Sensitivity = 58%, Specificity = 83%, PPV = 83%, NPV = 58%).

Conclusions The diagnostic yield of endoscopy for prediction of acute GvHD in the upper gastrointestinal tract is considerable low and cannot replace histopathological evaluation. No specific biopsy side showed superior prediction of GvHD. Therefore, we recommend a stepwise biopsy-protocol for patients undergoing upper endoscopy for diagnosis of GvHD.

eP30V ENDOSCOPIC TREATMENT OF BOERHAAVE’S SYNDROME IN A PATIENT WITH PREVIOUS HELLER’S MIOTOMY AND GASTRIC BYPASS: “CHICKEN SOUP IS NOT GOOD FOR THE HEART”

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Aims Boerhaave’s Syndrome or spontaneous rupture of the esophagus is a critical event with high mortality if untreated in the first 24 hours. Endoscopic management has been described.

Methods We present a case of a 66 year old male patient who had Heller’s Myotomy for Achalasia 15 years ago and gastric bypass for morbidity obesity 1 year before the current event. After an episode of overindulgence in food (Chiken soup) presented vomiting followed by dyspnea, retrosternal chest pain and diaphoresis. Was admitted in poor clinical conditions with pulmonary edema, large left Pleural effusion, mediastinal collection and contrast leak at distal esophagus in CT Scan. Under general anesthesia and endotracheal intubation, CO2 Upper Endoscopy was performed using a 9.8 mm gastroscope. An orifice greater than 1 cm was identified communicating to the mediastinum. The endoscope was advanced through it and endoscopic drainage completed (450 ml of chicken soup and rest of solids). Ribs, collapsed lung and heart were fully recognized and flushed with saline to complete cleansing of the area. In the mean time the thoracic surgeon placed a chest tube. Double pig-tail 10 Fr stents were placed between mediastinum and gastric pouch. A 12 cms partially covered Self-expanding esophageal metal stent was placed from distal esophagus to the gastric pouch. A naso-jejunal feeding tube was advanced.

Results Immediate adequate clinical response was observed. Naso-jejunal feeding tube was removed at 7 days. Chest tube was removed at 9 days and discharge from hospital was decided after 11 days. Upper endoscopy allowed pig-tail stents removal at 3 weeks and SEMS removal at 6 weeks achieving complete healing of the perforation. The patient has been followed up for two years and remains asymptomatic.

Conclusion Endoscopic drainage combined with self-expanding stent and adequate thoracic drainage is and alternative for Boehrhaave’s Syndrome.

eP31V ENDOSCOPIC MANAGEMENT OF COMPLICATIONS AFTER ESOPHAGECTOMY AND GASTRIC TRANSPOSITION

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Aims Esophagectomy with gastric transposition or gastric pulled-up is indicated in some cases of esophageal carcinoma, and severe caustic esophagitis. Serious complications include necrosis, torsion, delayed emptying of the gastric tube and leakage of anastomosis. Surgical reoperation is complex (35% mortality for leaks and 90% in necrosis.). Endoscopic management in selected cases could be an alternative.

Methods A series of 7 complicated patients managed endoscopically between 2009 and 2015 is presented. In 2 patients with gastric necrosis endoscopic necrosectomy was performed and covered stents were placed for 2 months. Two patients with torsion of the gastric tube were treated with covered stents for 3 months. Two patients with esophagogastric anastomosis leak were treated with partially covered stents for 6 weeks. In one of them the thorax was approached endoscopically by the leak allowing collection drainage and partial pulmonary decortication. In 1 patient with vaginal lesion and delayed gastric emptying GPOEM was performed.

Results The 2 patients with gastric necrosis developed refractory stenosis after the Stent, managed with dilatation, mitomycin and additional Stents for 9 and 6 months,. The first patient (cardiac carcinoma) remains asymptomatic 3 years after the second stent. The second patients with severe caustic injury presented rupture of the trachea due to erosion of the SEMS and fatal outcome due to sepsis. The 2 patients with twisted gastric conduit were asymptomatic post Stent (follow-up 6 months and 1 year). The rest of the patients evolved satisfactorily.

Conclusions In severe Complications post esophagostomy and gastric transposition, endoscopic management is possible. However, devastating adverse events related to endoscopic intervention are not ruled out.

Friday, April 5, 2019 09:00 – 17:00 Colon and rectum ePosters

eP32 CLINICAL AND ENDOSCOPIC FINDINGS ASSOCIATED WITH DYSPLASIA IN SESSILE SERRATED ADENOMA/POLYP

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Aims Sessile serrated adenoma/polyp (SSA/P) are considered to develop dysplasia by the serrated neoplasia pathway. Dysplastic portions in SSA/P can be difficult to detect and are often incompletely resected. We aimed to evaluate the clinical and endoscopic findings associated with dysplasia in SSA/P.

Methods Among patients with endoscopic resection from 2015 to 2018 in PNUYH, patients with SSA/P in pathologic diagnosis and ≥ 10 mm in size were enrolled. We retrospectively evaluated clinical and endoscopic findings, pathologic diagnosis in these patients.

Results A total of 59 SSA/Ps were assessed in 51 patients. Median size was 15.0 mm (interquartile range 10 – 25), and 7% were in the right side of the colon. Thirty of 59 SSA/Ps (50.9%) had dysplasia at histopathology (21 low grades, 8 high-grades, 1 carcinoma in situ). SSA/P with dysplasia was significantly different in age (p < 0.0001), size (p < 0.0001), NICE type (p < 0.0001)
and Kudo pit pattern (p < 0.0001), but not location, morphology, surface patterns and ≥ 2 WASP criteria compared to SSA/P without dysplasia. In multivariate analysis, dysplasia was significantly associated with age (OR 1.123, p < 0.005), size (OR 1.188, p < 0.008) and shape (OR 1.038, p < 0.05).

Conclusions Dysplasia in SSA/P was frequently combined, especially old age and large size, and SSA/P with lllb morphology was inversely correlated with dysplasia. Therefore, SSA/P with these clinical and endoscopic findings should be completely resected for the prevention of local recurrence and interval cancer.

**eP33 LEARNING CURVE FOR COLORECTAL ESD**

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Aims To analyze the learning curve of endoscopic submucosal dissections (ESD) for colorectal tumors.

Methods The results of the first 170 ESD for colorectal tumors from 09.2007 till 09.2018 have been analyzed. ESD speed, number of complications, rate of en-block resections and snare assistance have been evaluated. All patients were divided into two groups (85 patients each). Age – 61.8 ± 0.73 years, (F – 94, M – 76).

Results Rectum – 76 lesions, 55 – in the left colon and 39 – in the right colon. 108 were benign, 62 – malignant (13 of them with submucosal invasion). Tumors were polypoid in 35, non-polypoid in 135 cases (LST-G 108 were benign, 62 malignant (13 of them with submucosal invasion). The mean tumor size was 14.9 ± 1.7 cm2. En-block resection was achieved in 149 cases (87.6%). Average ESD speed was 12.7 mm2/min (average time for 1 cm2 was 12.9 min). There were 30 cases with snare assistance (17.6%), 20 perforations (11.7%) and 3 cases of delayed bleeding (1.7%). In the first 85 ESD group there were more rectal and less right-sided tumors than in the second 85 ESD group (45 vs. 31, p = 0.03, and 14 vs. 25, p = 0.04). Tumor size did not significantly differ (12.3 cm2 vs. 17.5 cm2, p = 0.14). En-block resections and perforation rates were similar in both groups (71 vs. 78, p = 0.16 and 6 vs. 14, p = 0.09). There were less cases of snare assistance in the second group (20 vs. 10, p = 0.04). ESD was faster in the second group: mean time of ESD for 1 cm2 was 14.7 min vs. 11.4 min (p = 0.04); mean ESD speed was 11 mm2/min vs. 14.6 mm2/min (p = 0.01).

Conclusions ESD speed significantly improved after 85 operations. Snare assisted ESD were less often in the second group. Absence of significant difference in perforation rate can be explained by significant increase of right-sided tumors in the second group.

**eP35 MORE LESIONS PER PATIENT DETECTED WITH HIGH-QUALITY VERSUS ADEQUATE CLEANSING: A POST HOC ANALYSIS OF UNIFORM SEGMENTAL CLEANSING SCORES USING THE BOSTON BOWEL PREPARATION SCALE**

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Aims Effective colonoscopy requires colon cleansing success which is usually based on the least clean colon segment; one poorly cleansed segment triggers an overall failure. This complicates the analysis of cleansing quality vs. lesion detection. We therefore analysed the relative lesion detection in patients who had the same cleansing score in all three colon segments.

Methods Three similar phase 3 randomised clinical trials assessed the colon cleansing efficacy and safety of 1L NER1006 (PLENVU) versus standard bowel preparations. Cleansing quality was assessed by treatment-blinded central readers using colonoscopy videos and the validated Boston Bowel Preparation Scale (BBPS). Trial results were pooled for this post hoc analysis, which excluded patients without fully documented segmental cleansing scores and lesion counts. The mean number of polyps (MPP) and adenomas (MAP) per patient were calculated in patients with uniform segmental scores ranging from zero (failure) to three (high-quality). One-sided t-tests assuming equal variance assessed MPP and MAP of BBPS 3+3+3 versus lower score groups.

Results Among 1749 patients included in this analysis, 1178 had uniform segmental BBPS scores (Table). BBPS 3+3+3 demonstrated a higher MPP vs. BBPS 2+2+2 (1.67 vs. 1.03; P < 0.001). MAP was improved with BBPS 3+3+3 vs. BBPS 2+2+2 (0.86 vs. 0.53; P = 0.001) or BBPS 1+1+1 (0.86 vs. 0.50; P = 0.041). Only 8 patients had uniform BBPS scores of zero.

Conclusions Despite variable sample sizes, higher MPP and MAP were demonstrated for high-quality versus adequate cleansing success and a consistent trend was observed towards improved lesion detection with higher cleansing quality.

**eP36 PREVALENCE OF INFLAMMATORY BOWEL DISEASE (IBD) IN A COLORECTAL CANCER POPULATION SCREENING PROGRAM**

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Aims IBD are diagnosed in subjects with gastrointestinal symptoms and a diagnostic delay is often observed. IBD may also be present in asymptomatic subjects. In these cases, diagnosis may be further delayed or missed.

Methods We analyzed an electronic database of a regional colorectal cancer screening program offered to subjects from 50 to 70 years old. From September 2013 to August 2018, among subjects who underwent colonoscopy in a single hospital, we identified subjects with endoscopic findings suggestive of IBD. We retrieved histological findings and information on other examinations and possible therapeutic decisions.

Results 2062 subjects undergoing to colonoscopy were enrolled. In 33 (1.6%) subjects (18 men, mean age ± SD 60.8 ± 7.4 years) endoscopic findings suggestive of IBD were present: 23 of CD and 10 of UC; none of these subjects were taking oral anticoagulants or NSAIDs and reported gastrointestinal symptoms. After a median follow-up of 13 months (range 2–59), a definitive diagnosis of IBD was done in 10 subjects (0.5%). 3 already underwent to colonoscopy in the context of the same program and 1 showed familiarity for IBD. 7 were diagnosed with CD (6 men, 61.3 ± 7.1 years) and 3 with UC (2 men, 55.8 ± 3.0 years). In CD population, 4 patients showed colonic, 3 ileal and 1ileo-colonic location; 1 was treated with steroids and then with vedolizumab, 1 with steroids and then with azathioprine, 1 with 5-ASA while 4 did not receive any therapy. In UC population, 2 patients showed extension limited to rectum and 1 to rectum and sigmoid colon; all patients started therapy with 5-ASA.
Conclusions Prevalence of IBD in a colorectal cancer population screening program is 0.5%. IBD diagnosis can be missed but only 1 out of 3 subjects with endoscopic findings suggestive of IBD is eventually diagnosed as affected by CD or UC.

eP37 A QUANTITATIVE INSIGHT ON PRECLINICAL AND CLINICAL YEAR LEBANESE MEDICAL STUDENTS’ KNOWLEDGE AND ATTITUDE TOWARDS COLORECTAL CANCER SCREENING

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Aims Colorectal cancer is one of the leading cancers worldwide, with early screening leading to a large reduction in mortality and morbidity; yet screening efforts in Lebanon remain inadequate and a large number of cases present in advanced stages. Health care providers in training, such as medical students, play an important role in raising awareness and educating the public on the importance of CRC screening. Assessing these students’ knowledge and attitudes is the aim of this study.

Methods A total of 189 medical students (41.8% preclinical and 58.2% clinical) participated in a cross-sectional survey. Data was collected using self-administered questionnaires.

Results 94.7% of participants had a positive attitude towards CRC screening. Participants were most knowledgeable about how colonoscopy is done (90% and 98% of preclinical and clinical students respectively). 77.5% of clinical students knew at what age CRC screening is recommended versus 31.8% of preclinical students with a p-value of <0.01. Additionally, only 37.3% of preclinical students knew the frequency of colonoscopy for CRC screening in eligible patients versus 74.7% of clinical students with a p-value of <0.01. There was a significant difference in knowledge concerning possible signs and symptoms of colorectal cancer, between clinical and preclinical students with a p-value of <0.01. Even with clinical students’ superior knowledge, the percentage of correct answers given by clinical students was still inadequate.

Conclusions The inadequate knowledge levels among preclinical and clinical students may be one of the barriers affecting CRC screening. Enhancing medical students’ knowledge about CRC screening through curricular modification and constant general health education should be considered as primary tools to try and promote CRC screening and prevention.

eP38V INTRAMURAL COLONIC HEMATOMA: A RARE COMPLICATION OF ENDOSCOPIC SUBMUCOSAL DISSECTION

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Intramural colonic hematoma represents a rare complication, following blunt trauma, therapeutic intervention or accompanying diseases with bleeding diathesis. Here we report the case of a 50-year-old man referred to our unit to perform endoscopic resection of a 35 mm non-polypoid lesion (non-granular lateral spreading tumor 0-Ia, according to Paris classification) of the descending colon, because of previous positive hemoccult test for colorectal cancer screening. The patient didn’t refer any comorbidities and an endoscopic submucosal dissection (ESD) was scheduled according to the ESGE guidelines [Endoscopic submucosal dissection: European Society of Gastrointestinal Endoscopy (ESGE) Guideline; Endoscopy 2015; 47 (09): 829 – 854]. ESD was challenging due to persistent bleeding trend, from many submucosal vessels, treated using coagulation with knife (Hybrid-knife T-type, ERBE Gmbh), through-the-scope (TTS) clips, epinephrine injection, hemostatic monopolar forceps and finally with hemostatic ideogel (Purastat).

Three hours after the procedure, the patient became hemodynamically unstable, with copious enterorrhagia. So, after initial resuscitation, urgent colonoscopy was performed, showing arterial bleeding from resection bed, stopped by TTS clips deployment. However, a voluminous 8 cm intramural hematoma has been developed; so, an urgent surgical intervention was required.

Laparotomy confirmed intramural hematoma along the descending colon and sigma, starting distal to the resection bed, with hemoperitoneum from colon fissuration. Surgical resection was performed and the patient was discharged home one week later. However, during surgical intervention, a hemorrhagic trend was observed. Further analysis revealed deficit factor V Leiden.

In conclusion, intramural hematoma is a rare but potentially life-threatening complication after endoscopic resections, especially in high-risk procedures (ESD) or patients (i.e. patients with bleeding diathesis or with ongoing antithrombotic therapies). Before therapeutic procedures, we advise to accurately investigate any possible signs of bleeding diathesis (i.e. frequent epistaxis).

eP39 A PREDICTIVE MODEL IDENTIFIES PATIENTS LESS LIKELY TO HAVE ADENOMAS AFTER A COLON CANCER

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Aims Patients with prior colorectal cancer (CRC) are at slightly increased risk of metachronous colorectal neoplasms, therefore endoscopic surveillance is indicated. Current recommendations of repeating examinations at 1, 3 and 5 years after surgery, are not tailored according to risk stratification. Our aim was to find predictive factors of colorectal neoplasms to build a predictive model, to spare colonoscopies for low-risk patients.

Tab. 1 Predictive model for developing metachronous colorectal adenomas at 2nd surveillance colonoscopy

<table>
<thead>
<tr>
<th>Variable</th>
<th>Beta coefficient</th>
<th>Adjusted OR (95% CI)</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age &gt;65 y.o.</td>
<td>0.44</td>
<td>1.56 (0.99 – 2.47)</td>
<td>0.056</td>
</tr>
<tr>
<td>≥ 1 advanced adenoma at index colonoscopy</td>
<td>0.74</td>
<td>2.01 (1.23 – 3.27)</td>
<td>0.01</td>
</tr>
<tr>
<td>≥ 1 adenoma at 1st surveillance colonoscopy</td>
<td>0.94</td>
<td>2.56 (1.60 – 4.09)</td>
<td>&lt;0.01</td>
</tr>
</tbody>
</table>

Methods Multicenter retrospective study including patients with colon carcinoma surgically resected from 2001 to 2008 (training cohort) and from 2009 to 2013 (validation cohort). A predictive model for neoplasms occurrence at second surveillance colonoscopy was developed and externally validated.
Results 396 and 131 patients were included in training and validation cohort, respectively. Patients with ≥1 adenoma at 2nd surveillance colonoscopy were 113/396 (28.5%) and 21/131 (16.5%) in the two groups. In validation cohort, 3 cancers were found.

Four variables identified the low-risk patient’s profile of developing metachronous colorectal adenomas: age ≤65 years old, right colectomy, no advanced adenoma at basal colonoscopy and no adenoma at first surveillance colonoscopy. The predictive model showed fair discrimination, with an area under the ROC curve of 0.69 and 0.64, in training and validation cohort.

In validation group, if patients with a low-risk profile skip the 2nd surveillance colonoscopy, 25/131 (19.1%) exams would be saved while missing 2/21 (9.5%) patients with ≥1 adenoma; no advanced adenoma nor cancer would be missed.

Conclusions We provided a risk-stratification tool for adenoma occurrence after colon surgery, which could prove cost-effective to select patients who could skip the second surveillance colonoscopy.

eP40 COLORECTAL CANCERS DETECTED FOLLOWING SURGERY AT ANASTOMOSES OR OTHER COLORECTAL LOCATIONS DURING COLONOSCOPY SURVEILLANCE: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Aims Outcomes of endoscopic surveillance following surgery for colorectal cancer (CRC) vary with the incidence and timing of CRC detection, at anastomosis or elsewhere in the colorectum. We performed systematic review and meta-analysis to evaluate the incidence of CRCs identified during surveillance colonoscopies of patients with previous CRC surgery.

Methods We searched PubMed, EMBASE, SCOPUS, and the Cochrane Central Register through January 1, 2018 to identify studies investigating rates of CRCs at anastomoses or other colorectal locations after curative surgery for primary CRC. We collected data from randomized controlled, prospective, and retrospective cohort studies. Data were analyzed by multivariate meta-analytic models.

Results From 2,373 citations, we selected 27 studies with 15,803 index CRCs (89% stage I-II CRCs). Overall, 296 CRCs at non-anastomotic locations were reported over time periods of more than 16 years (cumulative incidence, 2.2% of CRCs; 95% CI, 1.8%-2.9%).

The risk of non-anastomotic CRC significantly decreased after 36 months or more from resection, compared with that before this timepoint (odds ratio for non-anastomotic CRCs at 36–48 months vs. 6–12 months after surgery, 0.61; 95% CI, 0.37–0.98; P = 0.031); 53.7% of all non-anastomotic CRCs were detected within 36 months from surgery.

One hundred fifty-eight anastomotic CRCs were detected over more than 16 years follow-up (cumulative incidence of 2.7%; 95% CI, 1.9%-3.9%). The risk of anastomotic CRCs was significantly lower after 24 months or more from resection than before (odds ratio for CRCs at anastomoses at 25 – 36 months after surgery vs. 6 – 12 months, 0.56; 95% CI, 0.32 – 0.98; P = 0.036); 90.8% of anastomotic CRCs were detected within 36 months from surgery.

Conclusions After surgery for CRC, the highest risk of anastomotic and non-anastomotic CRCs is highest during 36 months after surgery – risk decreases thereafter. Patients who have undergone CRC resection should be evaluated by colonoscopy more closely during this time period. Longer intervals may be considered thereafter.

eP42V AN UNCOMMON CAUSE OF PERSISTENT DIARRHEA

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Persistent Diarrhea (duration > 14 days) can have an etiology different than those seen in acute illness. We present the case of a 36-year-old female with no significant medical history. She had traveled 4 weeks prior to Marrakech, Morocco presenting during the trip acute initially non-bloody diarrhea with a low-grade fever then the presence of mucus and bright red blood. On arrival to Spain, she was reviewed by her GP with stool culture and study for parasite done that were negative. A week afterward she presented bilateral conjunctivitis that resolved with symptomatic therapy and 3 days prior to admission presented with pain in her left knee with swelling and lower back pain. She presented to the emergency department where orthopedic surgeon reviewed her knee and performed arthrodesis with the extraction of inflammatory culture and gram-negative fluid without birefringent crystal under the polarized microscope. Laboratory test showed a slight leukocytosis with normal x-rays of the lumbosacral region and knee.

Colonoscopy showed multiple erosions of < 5 mm, some with an erythema-tous holo and general mucosal erythema of the left colon. Biopsy showed a chronic colitis suggestive of an infectious process. Stool cultures were positive for Shigella Flexneri and antibiotic therapy was started with ciprofloxacin. A lumbosacral MRI performed with arthritis of the right inter-joint articulations of L4-S1. The right knee was infiltrated with corticoids and NSAIIDs started for pain control of lower back pain. She was diagnosed with enterocolitis due to Shigella with reactive arthritis. The patient presented clinical improvement and was discharged home.

Reiter’s syndrome is a triad of arthritis, conjunctivitis/iritis and urethritis. Extra-articular infections that cause Reiter’s syndrome have been identified, sexually transmitted diseases, found primarily in males and a post-dysentery form that often affects women, children, and the elderly as seen in our patients.
**eP43  ENDOSCOPIC MUCOSAL RESECTION OF LARGE COLORECTAL LESIONS BY LOW-VOLUME ENDSKOPSIT: A RETROSPECTIVE STUDY**

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**DOI**  10.1055/s-0039-1681791

**Aims**  In expert hands, endoscopic mucosal resection (EMR) is a safe and effective method for managing superficial neoplastic lesions of the lower GI tract. We aimed to evaluate the technical outcome and safety of colon EMR performed by endoscopists with limited experience in advanced resection techniques.

**Methods**  We conducted a single center, retrospective analysis of data collected from patients with sessile/flat polyps, treated over a 24 month period in our unit. We reviewed data regarding the size, localization and morphological characteristics of the lesions, en bloc resection rates, complications and local recurrence during follow-up.

**Results**  47 lesions were resected in 41 patients with a mean age of 65±19.3 years. The median size of the lesion was 20 mm. Most lesions had Paris II morphology (48.9%). High grade dysplasia was reported in 6/47 (12.8%) of cases – all males, and advanced neoplasia (TIS and invasive carcinoma) was detected in an additional 6/47 (12.8%) of cases – 5 lesions having mixed morphology (TIS). Complete resection of all visible tissue was achieved in 45/47 (95.7%) of cases, but only 9/47 (19.1%) of resections were en-bloc.

In 2 cases, plasma argon coagulation for ablation of residual adenomatous tissue was performed in the same session, following piecemeal EMR. 9 patients required a second intervention for recurrent adenoma at follow-up endoscopy, with 6 cases undergoing repeat EMR and 1 patient referred for surgical resection of invasive carcinoma. There were a total of 5 reported adverse events (10.6%) – 3 intra-procedural bleedings, 1 delayed bleeding and 1 perforation, all managed successfully by endoscopy.

**Conclusions**  Our study showed that high technical success rates for colon EMR are achievable even by endoscopists with limited initial experience in resection techniques, with low rates of procedure-related adverse events, comparable to those cited in expert centers.

**eP44V  ENDOscopic EN BLOC MUCOSAL RESECTION OF LARGE FLAT CAECAL ADENOMA**

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**DOI**  10.1055/s-0039-1681792

**Aim**  Videocase describes a 61-year-old woman with granular homogenous laterally spreading caecal tumor (LST-GH), size 40 × 30 mm, which was curatively treated by en bloc endoscopic mucosal resection (EMR) technique. Is not primarily designed technique for such large lesions.

**Methods**  Colonoscope CF-HQ190L (Olympus Europe, Hamburg, Germany) was used. The patient underwent a standard preparation (Vistaprep, Tillotts Pharma) in split dosing. Procedure was performed in anosedation. White light and narrow band imaging (NBI) were used to evaluate the lesion, which belonged to the NICE type 2 (NBI-International-Colorectal-Endoscopic) classification. The en bloc EMR was performed by the lift and cut technique. A solution of patent blue diluted with adrenaline (1:20.000) was used for the submucosal injection. The lesion was removed with a SnareMaster SD-230U polypectomy snare by using an ESG-100 electrocoagulation unit (Olympus) in the Pulse Cut Slow Level 120 W.

**Results**  We performed an en bloc endoscopic mucosal resection of large LST (40 × 30 mm). Resulting histology was the adenoma with low grade intraepithelial neoplasia (LGIN). Despite of its size, the lesion was resected curatively (R0 resection) without peri- or postprocedural complication and without local residual neoplasia 3 moths after the procedure.

**Conclusion**  It is generally assumed that flat lesions ≤20 mm should be removed en bloc by endoscopic mucosal resection technique. For lesions >20 mm, piecemeal EMR (EPMR) or endoscopic submucosal dissection (ESD) is recommended. However, our case shows that even lesions of 40 mm size can be also curatively resected en bloc. After using methylene blue and diluted adrenaline for injection the lesion becomes blue. Adrenaline causes fading of surrounding tissue and the edges of the lesion are much better visible than without adrenaline. Mucosal fading is more appropriate than fading of surrounding tissue and the edges of the lesion are much better captured inside the snare.

**eP45  INCIDENCE AND CHARACTERISTICS OF INTERVAL COLORECTAL CANCER. IDENTIFICATION OF IMPROVEMENT AREAS**

**Authors**  Pérez Citores L1, Bonoso Criado R1, Montero Moretón Á1, Cimavilla M1, De Gracia Villanueva Arias M2, Moreira Da Silva B1, Santos Santamarta F1, Maestro Antolin S1, Curieses M1, Peñas I1, Pérez Millán A1, Barcenilla Laguna J1

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**DOI**  10.1055/s-0039-1681793

**Aims**  Interval cancer is a major cause of concern. It is conditioned by multiple reasons such as colonic preparation, exploration time and adequate polyps resection. The primary aim was assessing the incidence and characteristics of interval cancers in our health area.

**Methods**  Colorectal cancers diagnosed between 2016 and 2017 were collected. It was verified the number of these patients who had a previous colonoscopy and 5 years before. The results of this colonoscopy were collected to identify the possible causes.

**Results**  374 cases of colorectal cancer were diagnosed, 18 (4.8%) had a previous colonoscopy in less than 5 years. In 5 (27.7%), cancer was located on the area of a previously resected polyp. In the rest of patients no lesion was identified in previous colonoscopy, colonic preparation was considered inadequate in 5 (38.4%) and good in the rest (62.6%). The characteristics regarding sex, staging and location are shown in the table.

<table>
<thead>
<tr>
<th>Tab. 1</th>
<th>Sex</th>
<th>12 men (66.6%)</th>
<th>6 women (33.3%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staging</td>
<td>5 T1 (27.7%)</td>
<td>3 T4 a M1 (18.6%)</td>
<td></td>
</tr>
<tr>
<td>Location</td>
<td>8 right colon (44.4%)</td>
<td>6 left colon (33.3%)</td>
<td>4 rectum (22.2%)</td>
</tr>
</tbody>
</table>

If we only consider patients with colonoscopy in the previous 3 years, there were 8 cases (2.1%) (3 in right colon, 3 in left and 2 in rectum), 4 (50%) cancers settled in areas of previously resected polyps.

**Conclusions**  Incidence of interval colorectal caner is low in our health area. Inadequate preparation remains a major cause of unseen lesions, followed by incomplete polyp resection. Proper colonic preparation is highly important and colonoscopy must be repeated when it is inadequate. Careful polyp resection must be performed, as well as careful revaluation of the scar after peace-meal resection.

**eP46  LONG TERM FOLLOW UP AFTER ENDOscopic MUCOSAL RESSECTION FOR LARGE AND CHALLENGING SUPERFICIAL RECTAL TUMOURS**

**Authors**  Alam A1, Rahim G1, Peredo G1, Khater S1, Benosman H1, Cellier C1

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**DOI**  10.1055/s-0039-1681794

**Conclusion**  It is generally assumed that flat lesions ≤20 mm should be removed en bloc by endoscopic mucosal resection technique. For lesions >20 mm, piecemeal EMR (EPMR) or endoscopic submucosal dissection (ESD) is recommended. However, our case shows that even lesions of 40 mm size can be also curatively resected en bloc. After using methylene blue and diluted adrenaline for injection the lesion becomes blue. Adrenaline causes fading of surrounding tissue and the edges of the lesion are much better visible than without adrenaline. Mucosal fading is more appropriate than fading of surrounding tissue and the edges of the lesion are much better captured inside the snare.

This document was downloaded for personal use only. Unauthorized distribution is strictly prohibited.
Aims Endoscopic mucosal resection (EMR) is a commonly used technique to remove colorectal polyps. In this study, we aimed to evaluate the success, complications and recurrence rate of EMR for large superficial rectal tumours. Methods From January 2010 to January 2018, all patients treated by EMR for rectal superficial tumours larger than 20 mm, at our centre, were retrospectively included. Clinical, endoscopic and histological data were collected. We defined “challenging” polyps as polyps presenting at least one of these features: size ≥ 4 cm, macronodules ≥ 10 mm, contact with pectinate line or rectosigmoid junction and invasive carcinoma”. Patients who had a surveillance colonoscopy within the year following EMR were assessed for recurrence rate. Results A total of 81 patients were included (mean age 70.67, 55.6% men). The median polyp size was 28 (20; 60) mm. Histological analysis revealed low-grade dysplasia in 45.67%, high-grade dysplasia in 18.51%, intramucosal carcinoma in 4.93% and invasive carcinoma in 3.7%. The 4 cases of invasive carcinoma were referred to surgery. 53 patients (65.43%) only received a surveillance colonoscopy within the year with median follow-up of 4.34 (3; 11) months. The local recurrence rate was 9.43%. After logistic regression analysis, no significant correlation was identified for size, location, Paris classification or piecemeal resection. Among “challenging” polyps (60.49% (49/81)), only 42% (34/81) were followed. Recurrence rate of these polyps were 14.70% versus 9.52% for non-challenging polyps; p > 0.05. Intraoperative bleeding occurred in 14.8% of the cases, delayed bleeding in 4.9% and perforation in 3.7%. All complications were treated medically. Conclusions Our study shows that EMR is an effective and safe technique for resection of large rectal polyps, with an overall recurrence rate of about 9.43%. EMR of challenging polyps may be associated with higher recurrence rate, but this data should be confirmed in large scale prospective study.

eP48 PREDICTIVE FACTORS FOR AN ADEQUATE BOWEL PREPARATION. A PROSPECTIVE ANALYSIS

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Aims To determine predictive factors to achieve an adequate bowel preparation. Methods Prospective register of consecutive colonoscopies. February 2014 - July 2018. Variables: demographic data, indication for colonoscopy, type of bowel cleansing solution and administration regimen, colon length and Boston bowel preparation scale (BBPs). Patients with colon resection and incomplete colonoscopies were excluded. Results We included 7795 patients. Age: 58.8 ± 13.3y; 51.6% women. The diagnostic colonoscopies were more frequent: 66.9%. The 95.4% of patients fulfilled the administration regimen, 64.1% with sodium-picosulfate (SP/MC) and 39.5% with PEG3350/ascorbic acid. The most of patient drank cleansing solution at the same day using “split dose”: 87.1%. We defined as a long colon the 11.8% of colonoscopies and according to BBPs (score ≥ 2 in each segment), the 86.7% were adequately prepared. In a multivariate analysis the fulfillment of the administration regimen: OR = 3.57; 95% IC: 2.47–5.15, age < 60y: OR = 1.91; 95% IC: 1.64–2.24, the intake of cleansing solution at the same day using “split dose”: OR = 1.84; 95% IC: 1.45–2.32, the female gender: OR = 1.33; 95% IC: 1.14–1.55, the split/SMP use: OR = 1.33; 95% IC: 1.14–1.56 and the screening colonoscopy: OR = 1.26; 95% IC: 1.07–1.47 were associated to adequate bowel preparation. Conclusions Female < 60 years old who intake SP/MC solution at the same day in “split dose” in whom the indication for colonoscopy was CRC screening achieve an adequate bowel preparation. Therefore in those patients in whom these features are not identified we recommend a more intensive preparation strategy.

Endoscopy 2019; 51: S1–S273
Conclusions NAFLD with advanced fibrosis is an independent risk factor for colorectal adenoma compared with NAFLD without advanced fibrosis.

**eP50** FACTORS OF PREOPERATIVE COLONOSCOPY THAT AFFECT THE DETECTION OF SYNCHRONOUS ADENOMA IN COLORECTAL CANCER PATIENTS

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**DOI** 10.1055/s-0039-1681798

**Aims** Despite thorough preoperative screening, approximately 19–30% of synchronous polyps are detected after colon cancer surgery. Remnant synchronous lesions might require additional colonoscopy procedure or surgery. The purpose of this study was to investigate the factors of preoperative colonoscopy that can affect the detection of synchronous lesions in the colon in patients who have undergone surgery for colorectal cancer.

**Methods** From January 1, 2012 to December 31, 2016, we retrospectively analyzed 1147 colorectal cancer patients, who underwent colectomy and colonoscopy. In all, 518 patients underwent colonoscopy before and after surgery. Index colonoscopy was defined as the last endoscopy performed before surgery. Follow up colonoscopy was performed one year after surgery. The effects of bowel preparation, index colonoscopy, adenoma, and physician and patient factors on postoperative PMR, AMR and AAMR were analyzed. An Arochick scale ‘Excellent’ or ‘good’ was defined as optimal bowel preparation.

**Results** The overall rate of missed adenomas was 25.7% (95% confidence interval, 22.2–29.8%). On comparing the optimal and non-optimal groups, the post-operative PMR, AMR (11% vs. 49%, and 5.9% vs. 35.2%, p < 0.01), AAMR (3.0% vs. 4.6%, p = 0.272), and size of the polyps (3.2 ± 0.55 vs. 4.9 ± 0.23 mm, p = 0.017) were higher in the non-optimal bowel preparation group. Based on the optimal group, we found more number of synchronous adenomas in the fair group (OR 5.72) and poor group (OR 11.39). On univariate analysis, the patients’ age and withdrawal time (<0.01) also influenced AMR. Physicians with more than 10 years’ experience in colonoscopy had lower post-operative ADR than those with less experience, but there was no statistically significant difference. Multivariate analysis showed that age and preoperative bowel preparation influenced postoperative AMR.

**Conclusions** Higher age of the patient and non-optimal bowel preparation at index colonoscopy, have a negative effect on lowering the postoperative AMR.

**eP51** YIELD OF FLEXIBLE SIGMOIDOSCOPY-BASED SCREENING FOR COLORECTAL NEOPLASIA IN GREEK AVERAGE-RISK INDIVIDUALS: IMPACT OF SERRATED POLYPS

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**DOI** 10.1055/s-0039-1681799

**Aims** Flexible sigmoidoscopy (FS) is an attractive screening modality, being less invasive and costly compared to full colonoscopy. We investigated the yield of FS with respect to advanced colorectal neoplasia (ACN) detection and identified factors correlating with ACN missed by FS-based screening.

**Methods** Retrospective cross-sectional study of data from 2005 patients aged ≥50 years (57.2% female, 61.8 ± 8.2 years) who underwent an average-risk screening colonoscopy between 1/2014–6/2018. ACN was defined as conventional adenoma ≥10 mm, villous histology, high-grade dysplasia, sessile serrated adenoma/polyp (SSA/P) ≥10 mm, SSA/P with cytologic dysplasia, traditional serrated adenoma, or cancer. The additional yield resulting from conversion to full colonoscopy in patients with pre-established distal findings (≥3 conventional adenomas, ≥10 mm, villous, or high-grade dysplasia) was also evaluated. Two definitions of FS up to the sigmoid-descending junction (FS-1) or splenic flexure (FS-2) were analyzed.

**Results** Colonoscopy revealed 419 conventional adenomas in 293 (14.6%) patients, 54 SSA/Ps in 35 (1.7%) patients and 114 ACNs in 102 (5.1%) patients. FS alone would have led to the detection of 40.4% (46/114; FS-1) and 53.5% (61/114; FS-2) cases of ACN. Forty-two (2.1%; FS-1) and 56 (2.8%; FS-2) patients with pathological distal findings would have undergone full colonoscopy, resulting in the additional detection of 8 (7%) and 7 (6.1%) ACNs, respectively. Overall, the implementation of FS-based screening would have led to the identification of 47.4% (54/114; FS-1) and 59.6% (68/114; FS-2) cases of ACN. Individuals with at least one SSA/P of any size anywhere in the colon were more likely to have proximal ACN with no concurrent distal findings that would have led to full colonoscopy [age- and gender-adjusted RR: 32.6, 95% CI 15–70.6, P = 0.0001 (FS-1), 42.3, 95% CI 19.2–93.6, P = 0.0001 (FS-2)].

**Conclusions** In Greek average-risk individuals, 40–53% of cases of ACN would be missed by FS-based screening. In our setting, SSA/Ps were the only identifiable factor affecting negatively the yield of FS-based screening.

**eP52** ENDOSCOPIC AND CLINICAL OUTCOMES IN CD PATIENTS: RESULTS OF A PROSPECTIVE STUDY

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**Institute** ¹Colentina Clinical Hospital, Bucharest, Romania; 2 ‘Carol Davila’ University of Medicine and Pharmacy, Bucharest, Romania

**DOI** 10.1055/s-0039-1681800

**Aims** Our aim was to assess clinical and endoscopic outcomes in CD (Crohn’s disease) patients enrolled in an IBD prospective cohort and to identify predictors of persistent inflammatory activity at follow-up.

**Methods** CD patients prospectively enrolled in an IBD cohort from a tertiary care center in Bucharest were followed annually, collecting clinical (CDAI, SIBDQ), endoscopic (SES-CD), biologic (CRP) data at each study visit. Results Analysed data from 62 CD patients (visits 22 (ileal, 46% colonic, 29% ileo-colonic disease extension) were included, totalling 143 study visits. In the final analysis, at baseline 43% of patients had clinical activity, 82% had active endoscopic disease and reported a poor quality of life (median SIBDQ score 4.7). Enrolled patients had mild endoscopic activity (median SES-CD score 5) and a low prevalence of stenosis (median SES-CD stenosis subscore 0). SES-CD scores improved significantly at first follow up visit (median SES-CD 3, p = 0.013, Mann-Whitney U test), as well as quality of life scores (median SIBDQ score at baseline 4.7 vs. 5.5 at first follow-up visit, p = 0.001, Mann-Whitney U test) and clinical remission rates (43% at baseline vs. 28% at follow-up).
up, p = 0.04). In addition, we found a weak correlation for the SES-CD score with SIBDQ scores (r = -0.27, p = 0.019) and with CRP levels (r = 0.38, p < 0.01, Spearman's correlation).

**Conclusions** Under medical treatment, endoscopic and clinical parameters of CD patients improve at 12 months of follow-up. As there is no consensus regarding SES-CD cut-off scores for endoscopic remission it’s difficult to interpret the significance of SES-CD score improvement. However, according to some authors [1], we could consider that a significant percent of enrolled patients achieved endoscopic remission at one year of follow-up, with 58% having SESCD ≤ 3.


### eP53 COLORECTAL CANCER INCIDENCE AND THE PREVALENCE OF Precursor LESIONS IN YOUNGER ADULTS

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**Aims** In the USA, colorectal cancer (CRC) incidence and mortality decreases among the screening population. However more often younger (<50y) get diagnosed with CRC. Therefore, the American-Cancer-Society recommend to start screening colonoscopy (SC) at the age of 45. Aim of our study is to assess the CRC incidence in Austria within different age groups and compare it with the occurrence of precursor lesions.

**Methods** 266.592 screening colonoscopies were analyzed from 2008 – 2018 within the “Austrian-screening-program”. The incidence (per 100.000) of colorectal cancer with the data from Statist Austria and the prevalence of precursors within the Austria screening program were assessed within different age groups and compared among adults over and under 50 years.

**Results** 9341 (3.5%) patients were below the age of 50 and 257.251 (96.5%) were over 50 years old. CRC-incident under the age of 50 was 7,6 (6,6 – 8,6) in 1985; 7,5 (6,5 – 8,5) in 1995; 8,7 (7,7 – 9,7) in 2005 and 9,8 (8,8 – 10,8) in 2015. Incidences for patients over 50 was 192,7 (185,7 – 199,7) in 1985; 215,3 (208,3 – 222,3) in 1995; 212,3 (205,3 – 219,3) and 144,0 (137,0 – 151,0) in 2005 and 148,6 (141,6 – 155,6) & 95,3 (88,3 – 102,3) in 2015. The prevalence of advanced adenomas changed from 5,5% (7,0 – 4,0) in 2008 to 7,4% (7,0 – 7,8) in 2015 within patients under 50 and from 9,5% (7,0 – 6,0) to 6,9% (7,0 – 4,9) within those over 50 years.

The number needed to Screen (NNS) for an Adenoma was 5 within men aged 45 – 49, as well as among 50 – 54-years old. Within women NNS of 8 was also identical for both age groups.

**Conclusions** CRC incidence, as well as the occurrence of precursor advanced adenomas decreased within patients over 50 in the last years, while it is increasing among individuals under 50. The NNS for an adenoma is identical among patients aged 45 – 49 and 50 – 54. Therefore, the age for starting SC should be diminished to 45.

### eP54 COMPLICATIONS IN THE MANAGEMENT OF ACUTE LEFT COLORECTAL NEOPLASTIC OBSTRUCTION WITH CURATIVE INTENTION. DO ENDOSCOPIC STENTS HAVE A PROTECTIVE EFFECT?

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**Aims** To evaluate factors involved in medical and surgical complications in patients with acute colonic obstruction secondary to left colon cancer treated with curative intention. We specifically compared the influence of stents.

**Methods** We performed an observational and retrospective study of patients attended in a single center for acute left colonic obstruction caused by cancer between 2007 and 2014. There were only included patients with curative intention, without metastasis at the time of diagnosis and treated with surgery with R0 resection.

**Results** There were included 106 patients. It was placed a colonic stent as a bridge in 76 (71,7%), and the rest were operated in an emergency setting. Surgical complication rate was lower in women, OR 0,30 (0,09 – 0,97). In multivariate analysis Charlon score, men and resection larger than 30 cm were associated with a higher surgical complication rate. There were less medical complications in the postoperative period in patients with a colonic stent, OR 0,044 (0,00 – 0,37). In multivariate analysis, colonic stent and young age had fewer complications too.

**Conclusions** Colonic stents in patients with acute colonic obstruction secondary to left colon cancer treated with curative intention were associated in our study with a lower rate of medical complications and stoma but had no relationship with the presence of surgical complications.

### eP56 CLINICAL POTENTIAL OF CIRCULATING TUMOR CELLS IN COLORECTAL CANCER: A PROSPECTIVE STUDY

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**Aims** Identification of Circulating tumor cells (CTCs) in the peripheral blood has been suggested for an early diagnostic and prognostic marker in patient with colorectal cancer (CRC). However, only limited data exist on the diagnostic impact of CTCs in patients with CRC. In this study, we evaluate a newly developed CTCs detection systems based on the cell size to assess CTCs and its clinical potential with early diagnosis and prognostic biomarker in CRC patient.

**Methods** From 2014 to 2015, a total of 88 patients with newly diagnosed CRC (67 patients with colon cancer and 21 patients with rectal cancer) who were scheduled for surgery and 31 healthy volunteers were enrolled and followed-up in Pusan National University Hospital. CTCs were enriched using
a centrifugal microfluidic system with a new fluid-assisted separation technique (FAST) from peripheral blood and were detected by cytornorphological evaluation using fluorescence microscopy.

**Results** Two or more CTCs were detected using FAST in 74 patients and 3 healthy volunteers. The number of CTCs in the CRC group was significantly higher than that in the healthy volunteers (P < 0.001). When a receiver operating characteristic curve was created to differentiate CRC patients from healthy volunteers, the sensitivity and specificity were almost optimized when the critical CTC value was 5/7.5 mL of blood. When this value was used, the sensitivity and specificity in differentiating CRC patients from the healthy controls were 75% and 100%, respectively. In CRC patients with ≥5 CTCs, vascular invasion was frequently identified (P = 0.035). All patients with stage IV cancer were positive for CTCs.

**Conclusions** Our study demonstrated promising results with the use of FAST-based CTC detection for the early diagnosis.

**eP57 INCIDENCE AND RISK FACTORS FOR SESSILE SERRATED ADENOMAS AFTER CURATIVE SURGERY IN LEFT-SIDE COLON CANCER PATIENTS**

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**DOI** 10.1055/s-0039-1681804

**Aims** Sessile serrated adenomas (SSAs) are known to be precursors of colorectal cancer (CRC). However, data regarding detection rates of premalignant lesions during colonoscopy surveillance in patients with a history of left-sided colonic resection for cancer are lacking. In this study, we aimed to identify the incidence and risk factors for serrated adenoma in left-side colorectal cancer patients.

**Methods** We retrospectively reviewed the medical records of patients who underwent left-sided colonic surgery for colon and rectal cancer at Chungnam national university hospital (CNUH) between September 2009 and September 2016. We enumerated the SSAs in patients with left-side colectomy who received 1 or more follow-up colonoscopies. The patients' baseline and SSA characteristics and colonoscopy information were reviewed.

**Results** A total of 539 patients were enrolled in the study. During the first follow-up, 98 SSAs were identified in 539 patients (22.2%). At the second follow-up, 51 SSAs were identified in 212 patients (24.0%). The mean age of the patients was 62.2 years and 77.0% patients were men. The mean first follow-up duration was 11.5 months, and the mean second follow-up duration was 25.8 months. Multivariate analysis showed that alcohol intake (HR, 1.603; 95% CI, 1.033–2.411), bowel preparation (HR, 0.599; 95% CI, 0.301–1.039), and the use of transparent cap (HR, 1.702; 95% CI, 1.060–2.735) were associated with serrated adenoma incidence in the first surveillance colonoscopy. However, in the second surveillance, the body mass index significantly increased the risk of SSAs (HR, 1.602; 95% CI, 1.060–2.836).

**Conclusions** Several lifestyle factors are associated with metachronous SSAs risk. The findings of this study enhance our understanding of the mechanisms of SSAs development and indicate that the risk of serrated pathway colorectal neoplasms could be reduced through lifestyle changes.

**eP58 CAN SIGMOIDOSCOPY REPLACE COLONOSCOPY WHEN EVALUATING PATIENTS WITH ULCERATIVE COLITIS?**

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**DOI** 10.1055/s-0039-1681805

**Aims** Ulcerative colitis (UC) is a chronic inflammatory bowel disease of unknown etiology and is a lifelong disease repeating clinical improvement and aggravation. Endoscopic severity assessment is very important, because the severity assessment is related to the prognosis of the UC patient. Colonoscopy is able to identify the entire field, but is accompanied by complication and the preparation process is difficult. The aim of this study is to evaluate the endoscopic tool to assessing severity of ulcerative colitis during follow up UC patients.

**Methods** The subjects were 183 UC patients who were diagnosed and followed up at Chosun University Hospital from 2013 January to 2017 December. Among them, 101 patients with follow-up colonoscopy were enrolled and retrospectively evaluated for endoscopic severity. The severity is assessed by colonoscopy alone, inspector determines endoscopic severity of follow up UC patients from rectosigmoid and proximal colon. The scale of endoscopic severity is endoscopic mayo score and ulcerative colitis endoscopic index scale (UCEIS).

**Results** Of the 101 patients, 40 has lesions limited to the rectosigmoid colon. (39%) The average of endoscopic mayo score of entire colon is 1.21 and in case of rectosigmoid colon is 1.07. The average of UCEIS of entire colon is 2.24 and in case of rectosigmoid colon is 1.94. The agreement endoscopic mayo score between the each site is observed with a kappa value of 0.83 (p = 0.00), and agreement of UCEIS between the each site is observed with a kappa value of 0.840 (p = 0.00).

**Conclusions** There is a very high level of agreement between entire colon severity and rectosigmoid colon severity in followed UC patients. Sigmoidoscopy is a good modality for evaluating the endoscopic severity of followed UC patients, considering complication and high cost.

**eP59 DON’T FORGET TO PERFORM BIOPSIES IN NORMAL ILEOCOLONOSCOPY FOR CHRONIC DIARRHEA**

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**Aims** The aim of the present study is to better assess the prevalence of colitis with unremarkable endoscopic features, through clinical-pathological correlations.

**Methods** 150 patients (96 women. age 18 – 72 y) with chronic diarrhea were retrospectively evaluated, from 2008 to 2018. IBD, diverticular disease, HIV infection, parasites infestations, neoplasms were excluded. Every patient underwent a complete ileo-colonoscopy with a biopptic mapping from the terminal ileum to the rectum, providing from a minimum of two biopsies from each explored intestinal segment; biopsies were correctly oriented on acetate cellulose filters. The ileo-colonoscopy was performed with white light instruments without high definition and magnification. The biopptic samples were sent to our Pathology Unit, formalin-fixed, paraffin-embedded and stained with Hematoxylin-Eosin (H-E). Microscopic examination was performed by two GI pathologist on H-E, Masson trichrome stain and immunohistochemical stains for CD3 and CD8 in selected cases.

**Results** The histopathologic examination confirmed the presence of microscopical colitis (MC) in 43 of 150 patients (29%), with predominance of linfocitic colitis (LC) (16’%) over collagenous colitis CC (13%). The remaining 71% was composed by the resolving phase of acute self-limiting colitis (ASLC-r; 28’), by iatrogenic colitis (IC; 26’), with both hypereosinophilic (21’%) and pseudo-melanotic (5’%) pattern of injury, and histologically normal mucosa (NM; 17%).

**Conclusions** When we perform colonoscopy for chronic diarrhea and endoscopic features are not remarkable, a complete biopptic sampling is mandatory, because the classic MC is not the only possible scenario in the normal mucosa. Our data suggested that MC are responsible for less than one third of cases of chronic diarrhea. Other conditions, such as ASLC-r and IC, are involved as...
causative factors of diarrhea and they might be better understood on both clinical and pathological ground. Further studies with endoscopic high definition techniques are needed to rule out the intrinsic limitation of the low definition imaging.

**eP60  GENDER-SPECIFIC DIFFERENCE IN HISTOLOGY OUTCOMES ACCORDING TO POLYP SHAPE IN SCREENING COLONOSCOPIES**

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**Aims** Predictions about histology can be made due to polyp’s size, localization and shape. As influence of size and localization have been already shown in many studies (Lieberman D et al, Gastroenterology 2008), our aim of the study was to evaluate probabilities for type of histology according to different polyp shapes and whether it shows distinction between men and women.

**Methods** Screening colonoscopies between 2007 – 2018 were analyzed within Austrian Certificate in Quality for Screening Colonoscopy. Polyp shape was recorded on basis of Paris classification (sessile, flat, pedunculated). Histology was described for polyps: hyperplastic, other benign and for adenomas: tubular, villous, tubulovilious, sessile serrated (SSA), traditional serrated (TSA), Advanced adenomas (AA) were analyzed between 2013 – 2018.

**Results** 27 666 (46.88%) screening colonoscopies were from female patients, mean age = 61,76 (SD = 8,96), 53,12% were from male patients, mean age = 61,41 (SD = 8,92).

7766 (49,28%) flat polyps were found in women; 7992 (50,72%) in men. Regarding histology, 51,96% were hyperplastic in women vs.44,73% in men, other benign 4,96% vs.4,7%, SSA 3,84% vs.2,34%, TSA 0,66% vs.0,34%, tubular 33,29% vs.41,37%, tubulovilious 5,07% vs.6,19% and villous 0,23% vs.0,33%.

From 2537 (42,78%) pedunculated lesions in women and 3394 (57,22%) in men, 16,71% were hyperplastic in women vs.14,11% in men, other benign 6,39% vs.5,48%, SSA 0,63% vs.0,68%, TSA 0,43% vs.0,47%, tubular 47,46% vs.50,88%, tubulovilious 27,24% vs.27,37% and villous 1,14% vs.1,0%.

According to sessile polyps, 17 363 (46,52%) were found in women and 19958 (53,48%) in men. From that 47,49% were hyperplastic in women vs.42,31% in men, other benign 4,56% vs.4,2%, SSA 3,04% vs.2,11%, TSA 0,52% vs.0,47%, tubular 37,85% vs.43,65%, tubulovilious 6,16% vs.6,89% and villous 0,38% vs.0,42%.

From 39 886 screening colonoscopies since 2013, 4,53% AA were found in women and 6,06% in men. Regarding to polyp’s shape, 6,26% of flat polyps (5 430) in women were AA vs.7,8% in men (5 432),41,01% of pedunculated polyps (1 517) vs. 41,05%(from 2073) and 7,13% of sessile polyps (11 848) vs. 8,43% (from 13 586).

**Conclusions** Patients with pedunculated polyps had higher risk for advanced histology compared to sessile or flat polyps. More men had pedunculated and sessile lesions.

More sessile and flat polyps turned out to be histologically hyperplastic and SSA among women whereas men had more tubular adenomas with these polyp shapes.

**eP61  ENDOSCOPIC RESECTION OF SMALL COLORECTAL POLYPS: WHAT IS THE OPTIMAL TECHNIQUE?**

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**Aims** More than 70% of the polyps detected during colonoscopies are small (1 – 10 mm). The optimal technique of their complete resection is a subject of concern for endoscopists.

The aim of this study was to review the different techniques used for the resection of small polyps and to suggest which one would be most effective comparing the different rates of incomplete resection.

**Methods** This was a retrospective study including all the patients who underwent polypectomy for a small colorectal polyp during a period of 12 months (the year 2017). Three groups were defined: Group 1 (G1) for polyps resected using mucosectomy, group 2 (G2) for polyps resected using hot snare and group 3 (G3) for polyps removed by the biopsy forceps.

**Results** During the year of the study, 116 colorectal polypectomies were performed for 74 patients with an average age of 62 years [22.87 years] and a sex ratio (M/F) of 2.08. Polyps at mainly in the rectum (29.3%). They were sessile in 76.7% (n = 89), pedunculated in 10.3% (n = 12), and flat in 8.6% of cases (n = 10). The average size of polyps was 4.59 mm [2 – 10]. Diminutive polyps were prevailing (71.5% of cases, n = 83). The histopathological assessment showed that 25.8% of the polyps were hyperplastic (n = 30), while 66.4% (n = 77) were adenomatous. In the latter, 80.5% were tubular and 16.6% tubulovilious. G1 included 16 polyps, G2: 15 polyps and G3: 82 polyps. The incomplete resection rate of adenomatous polyps was significantly higher in G3 compared to G2 and G1 (23.1% vs. 6.6% vs. 18.7%, p = 0.12).

**Conclusions** In our series, complete endoscopic resection of small polyps was much better using hot snare. Until today, no optimal method has been described for the resection of small polyps.

**eP62  RESULTS OF ENDOSCOPIC MANAGEMENT OF SIGMOID VOLVULUS**

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**Doi** 10.1055/s-0039-1681809

**Aims** Sigmoid volvulus (SV) is represented by the wrapping of the sigmoid colon around itself and its mesentery, causing an intestinal obstruction and ischemic changes.

Controversy exists between endoscopy and surgery for the therapeutic management of colonic volvulus in emergency.

The aim of the study is to assess the outcome of patients with SV managed by endoscopic detorsion.

**Methods** A retrospective study including patients who underwent emergency endoscopic detorsion in the gastroenterology department of Habib Thameur Hospital, between January 2008 and August 2018 was conducted. The results of endoscopic management, percentage of recurrence, and the need for surgical procedures were analyzed.

**Results** During the study period, a total of 12 patients with acute SV were endoscopically treated. There were 9 men and 3 women, with a mean age of 60,4 years [range 30 – 90]. Endoscopic treatment was successfully performed without any complication in 10 patients, representing a primary success of 83,3%. For the other cases, exsufflation could not be performed because of severity endoscopic signs of bowel ischemia requiring an immediate surgery consisting on sigmoidectomy with Bouilly-Volkmann’s colostomy.
Early recurrence occurred in 2 patients an average of 16 days post detorsion [range 2–25 days], representing a secondary success of endoscopic treatment of 80%.

Semi-elective surgery was performed in 80% of patients who underwent endoscopic detorsion (n = 8) an average of 19.1 days [range 0–35].

**Conclusions** For uncomplicated SV, endoscopy is the best therapeutic option. It is safe and efficient with a high primary and secondary success rates. An elective surgery can than be performed in better conditions.

eP64  LARGE NON-PEDUNCULATED COLORECTAL POLYPS REMOVAL AND RESULTS IN A UK DISTRICT HOSPITAL OVER A 12 MONTHS PERIOD

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**Aims** To identify results, pit falls to formulate recommendations based on audit of LNPCP removal over a 12 months period and to compare it with BSG (British Society of Gastroenterology Society) guide lines and to see that it meets recommended BSG standards. Data collection was between Aug 2016 till Aug 2017.

**Methods** A retrospective data collection was conducted in LNPCP removed over a 12 months period 14 different parameters were used for each polypectomy conducted and results were analyzed on MS Excel.

**Results** 50 patients had LNPCPs removed during this 12 months duration. The demographic results shows that majority of patients were in there eighties. 56% were female and 44% were male. Majority of polyps were in distal sigmoid and hepatic flexure which constitutes 36%. The majority of the polyps removed were between 2–3 cm which makes 36% of total sample size. 82% of polyps were removed by hot snare cautery. The majority of indication for colonoscopy was previous polyps and this was 28%. 54% of polyps were completely removed and remaining were piecemeal. 26% of patients received midazolam and 50 mg of Fentanyl.

62% of cases pit pattern was not recorded in the endoscopy report.66% of cases paris classification was not noted. 100% polyps were retrieved. 54% polyps were removed completely. One adverse event was noted which was patient discomfort.66% polyps had histology of tubulovillous adenoma with low grade dysplasia. 72% polyps were regarded as complete by histopathologist. No patients were readmitted. 4 patients had adenocarcinoma.

**Conclusions** Pit pattern and paris classification of polyps to be entered religiously to rule out suspicious lesion. Referral pathway to facilitate the management of LNPCP to be developed. Mdt to discuss complex LNPCP. Endoscopist to be highly experienced in standard polypectomy. Primary therapeutic management of LNPCPs to be undertaken in 8 weeks.

eP65  CONTRIBUTION OF COLONOSCOPY AFTER AN EPISODE OF COMPLICATED DIVERTICULOSIS

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**DOI** 10.1055/s-0039-1681811

**Aims** A colonoscopy is often indicated after an episode of complicated diverticulosis to the search for a malignant tumor of the colon. The purpose of our study is to clarify the value of this examination in patients with complicated diverticular disease of the colon.

**Methods** This is a retrospective study including all patients explored by colonoscopy after an episode of complicated diverticulosis between January 2016 and September 2018.

**Results** Among 168 patients with colonic diverticular disease, 38 patients had a complicated diverticulosis (22.6%). These patients were divided into 20 men and 18 women with a mean age of mean age of 58.42 years. Diverticulosis was complicated by sigmoiditis in 31 cases, deep abscess in 3 cases, gastrointestinal bleeding in 3 cases and perforation in 1 case. A favorable evolution was obtained after the introduction of antibiotic therapy in most cases (34 patients). Four patients underwent surgical treatment. Colonoscopy performed within 53.8 days (30–90 days) showed diverticula in the sigmoid colon in 22 cases, the left colon in 8 cases, the transverse colon in 2 cases, the right colon in 2 cases and diffuse in 4 cases. Colonic polyps were present in 3 patients (7.8%) of 8.3 mm (5–12 mm) average size. Histological examination showed two tubular adenomas with low grade dysplasia and a tubular adenoma with high grade dysplasia. No cases of malignancy were observed.

**Conclusions** After an episode of complicated diverticulosis, colonoscopy was pathological in 7.8% of cases. No cases of malignancy were observed.

eP66  POSITIVE IMPACT OF SWITCHING FROM BSG TO ESGE POST POLYPECTOMY GUIDELINES ON A COLONOSCOPY SURVEILLANCE WAITING LIST

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**Aims** Assess current compliance and the impact of switching surveillance recommendations.

**Methods** A consecutive sample of surveillance patients was identified. Indication, surveillance interval, index endoscopy and histology findings were documented. Compliance with BSG and impact of switching to ESGE guidelines was determined.

**Results** To date, 261 cases have been reviewed, 93 were excluded (35% non-polyp surveillance and 7 (3%) insufficient data). Of 168 post polypectomy cases, 60% were men and mean age 67 (35–89) years, compliance with BSG recommendations was 62% (n = 104). Of the 64 (38%) with inappropriate intervals, 31 (18%) did not require surveillance, 8 (5%) should have had a shorter interval (median 18 months), and 25 (15%) a shorter interval (median 24 months). Of the 137 requiring surveillance, in 108 (79%) the interval would be extended by a median of 60 months by switching from BSG to ESGE recommendations, only 14 (10%) would be shorter, median 24 months and 15 (11%) remain unchanged. In those requiring surveillance, if compliance with BSG guidelines was 100%, our surveillance intervals would actually have been reduced by 456 months. Conversely, switching to ESGE recommendations would extend intervals by 6,144 months and 3,809 months assuming 100% and 62% compliance.

**Conclusions** Our data confirms surveillance guideline compliance remains an issue. While optimising compliance is important, adopting ESGE intervals would have a greater impact on colonoscopy demand.
**eP67 Efficacy of Emergency Endoscopic Hemostasis in Patients with Acute Lower Gastrointestinal Bleeding and Factors Associated with Need for Endoscopic Intervention**

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**Aims** The necessity and effectiveness of emergency endoscopic hemostasis in patients with acute lower gastrointestinal bleeding (ALBIG) has not been clearly established. The aim of this study was to define the role and efficacy of endoscopic hemostasis in patients with ALBIG and analyze factors associated with need for hemostasis.

**Methods** We analyzed the medical records of 587 patients with ALBIG treated in two affiliated hospitals during a seven-year period. Our practice was to perform colonoscopy in all patients after hemodynamic stabilization during the first 24 h of hospitalization and capsule enteroscopy and/or computed tomography angiography, when needed.

**Results** Endoscopic hemostasis was required in 96 patients (16.3%) and permanent hemostasis was achieved in 82 cases (85.4%) in first colonoscopy and in 100% after a second attempt. No patient required emergency surgical hemostasis and no patient died. Mainly clips (52%), adrenaline injection (40.6%) and APC (39.5%) were performed. Factors associated with need for endoscopic hemostasis were concomitant diseases (p = 0.035, OR 2.69, 95% CI 1.05, 6.87), use of anticoagulants (p < 0.001, OR 2.59, 95% CI 1.59, 4.22), post-polypectomy bleeding (p < 0.001, OR 23.01, 95% CI 111.92, 44.26), presence of colonic ulcers (p < 0.001, OR 5.02, 95% CI 2.14, 11.76) and vascular ectasias (p < 0.001, OR 46.37, 95% CI 15.74, 136.54). Ischemic colitis (p < 0.001, OR 0.766, 95% CI 0.729, 0.805), diverticulosis (p < 0.001, OR 0.108, 95% CI 0.034, 0.348) and neoplasia (p < 0.001, OR 0.89, 95% CI 0.87, 0.92) were negative predictors for the need of endoscopic hemostasis.

**Conclusions** Endoscopic hemostasis is required in a substantial number of patients with ALBIG with high efficacy and its necessity can be predicted by a variety of factors. However, larger prospective studies are required to better define a prognostic score.

**eP69 Long-term Survival Analysis After Endoscopic Stenting as a Bridge to Surgery for Malignant Colonic Obstruction: Comparison with Emergency Surgery**

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**DOI** 10.1055/s-0039-1681815

**Aims** Colorectal self-expanding metal stents (SEMS) can be used as a bridge therapy in acute malignant colorectal obstruction for elective surgical treatment in better clinical conditions. There are reports of higher rates of tumor recurrence in the long-term and worse survival in the SEMS group. The aim of this study was to compare the long-term results of colorectal SEMS versus emergency surgery in patients with malignant colorectal obstruction with curative purposes. The main outcome was overall survival rate.

**Methods** This is a retrospective comparison of patients who underwent placement of colorectal SEMS as a bridge therapy for malignant colorectal obstruction versus patients submitted to emergency surgery for the same clinical condition, with curative intentions in both groups. Inclusion: Patients with resectable colorectal neoplasia with obstructive signs and symptoms submitted to emergency surgery or SEMS. Exclusion: evidence of unresectable disease and/or metastatic disease.

**Results** 406 eligible patients. Groups are similar in age, gender, staging and ECOG status. SEMS group: 55 eligible patients of whom 34 were excluded (palliative care) and 21 were included. There were 3 perforations, 1 silent perforation, 3 reobstructions and 3 bleedings. There were 12 minor complications (9 pain, 2 tenesmus and 1 incontinence). Mean follow-up time was 16 months, (range 1–67). Surgery group: 351 eligible of whom 284 were excluded (evidence of unresectable disease) and 67 were included. Mean follow-up time was 17.6 months (range 5–69). Analysis of SEMS versus Surgery: primary anastomosis 70% vs. 14.4% (p < 0.0001); temporary ostomy 35% vs. 71.6% (p = 0.0015); permanent ostomy 15% vs. 35% (p = 0.1); fistula 5% vs. 14.9% (p = 0.44); local recurrence 38.1% vs. 22.4% (p = 0.14). There was no difference in the overall survival rate (log rank p = 0.873).

**Conclusions** SEMS group showed better rates of primary anastomoses and permanent ostomy. There was no difference in local recurrence and overall survival rate between the groups.
eP70 ENDOSCOPIC PREDICTION OF INVASION DEPTH BY CONVENTIONAL COLONOSCOPY IN EARLY COLORECTAL CANCER. A PROSPECTIVE STUDY IN PERU 2014–2018

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Aims: Endoscopic resection has been established as the treatment of choice for adenomas and cancer colorectal early (ECRC), with minimal risk of lymph node metastasis. Hence, the tumoral invasion prediction might help to determine the best therapeutic approach. The aim of the study is to assess the prediction of tumor invasion by means of conventional colonoscopy in early colorectal neoplastic lesions.

Methods: A prospective study for the validation of a diagnostic tool was performed. We included those patients with ECRC who were referred for endoscopic management during the period from January 2014 to July 2018. We evaluated the following endoscopic findings in each lesion: loss of lobulation, expansive appearance, depressed, eroded or ulcerated area demarcated, fold convergence, rigidity, and non-lifting sign. We define the depth of invasion in two groups: as intramucosal (M) with the presence of any or 1 endoscopic findings and massive-submucosal (SM-M) with the presence of at least 2 endoscopic findings. We correlated the prediction of depth invasion using the endoscopic findings with the pathologic stage of the lesions and determined its diagnostic performance. Subsequently, the association of each endoscopic predictor and the histological presence of SM-M invasion were determined with univariate and multivariate analysis.

Results: Global accuracy for prediction of tumor invasion by endoscopic findings was of 93.3%. Sensitivity, specificity, positive predictive value and negative predictive value for the first group (M) was 91.8%, 95.5%, 97.8%, and 84%, respectively; whereas for the second group (SM-M) was 95.5%, 91.8%, 84%, and 97.8%, respectively. We find that expansive appearance and rigidity were independent risk factors, which predict significantly the submucosal invasion.

Conclusions: The use of endoscopic predictors by conventional colonoscopy with white light is useful to determine the depth of tumor invasion in early neoplastic colorectal lesions.

eP71 HOW WELL DOES POLYP DETECTION RATE CORRELATE WITH ADENOMA DETECTION RATE?

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Aims: Adenoma detection rate (ADR) is a key performance indicator for colonoscopy as it correlates with diminished risk of interval colorectal cancer (CRC) and mortality. Assessment of the ADR can be time consuming as it requires histological assessment. Polyp detection rate (PDR) is a less cumbersome measure that does not require the linkage of endoscopy and histopathology results. We aim to assess whether PDR was an adequate substitute for ADR.

Methods: Single centre, retrospective analysis of colorectal polypectomies performed at Royal Free Hospitals NHS Trust during a 6-month period (March to September 2018). Data was collected from the Unisoft GI Reporting Tool and electronic patient records (EPR). Statistical analyses included chi-square and student t-tests.

Results: 637 polypectomies were performed on 333 patients (mean age 63.2 (23 – 89)) and were included in this study (380 patients diagnosed with colorectal polyps; 47 (12.4%) excluded as polyp not resected). Median number of polypectomies per patient 1 (1 – 10); median size 6 mm (1 – 70 mm).

Conclusions: Almost 1 in 5 patients undergoing polypectomy had resection of hyperplastic polyps only. 10% of patients had a non-neoplastic polyp from the side left removed with no risk of progression to CRC. Correlation of endoscopic impression of adenoma is not 100% with histology and would therefore not advocate the resect-and-discard strategy. This data supports a business case for a ‘polyp nurse’ to assess polyps following histological analysis and risk stratify into the adenoma follow up guidelines. We conclude that the ADR does not correlate with PDR.

Tab. 1 Adenoma versus Hyperplastic group: Demographics and outcomes.

<table>
<thead>
<tr>
<th>Histology</th>
<th>≥1 Adenoma (n = 232)</th>
<th>Hyperplastic polyps only (n = 57)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, mean (range)</td>
<td>65.8 (30 – 87)</td>
<td>56.2 (26 – 89)</td>
<td>0.0001</td>
</tr>
<tr>
<td>Size (mm), mean (range)</td>
<td>9.5 (1 – 50)</td>
<td>5.2 (1 – 20)</td>
<td>0.0002</td>
</tr>
<tr>
<td>Proximal to Splenic Flexure, n (%)</td>
<td>155 (66.8)</td>
<td>24 (42.1)</td>
<td>0.0006</td>
</tr>
<tr>
<td>Bowel Prep (Excellent or Good), n (%)</td>
<td>159 (68.5)</td>
<td>47 (82.5)</td>
<td>0.04</td>
</tr>
</tbody>
</table>

eP72 PROBE-BASED CONFOCAL LASER ENDOMicroscopy is a MANDATORY TOOL in EVALUATION of NEOangiogenesis in LOCALLy ADVANCED GASTRIC CANCER and in RECTal CANCER patients

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Aims: Probe-based Confocal Laser Endomicroscopy (pCLE) is an advanced endoscopic technique which provides high resolution images of the mucosa and of the microvasculature. The aim of study was to evaluate if pCLE can provide accurate information about tumor vascular pattern before and after neoadjuvant radio-chemotherapy (RT/CT) achieving a more accurate diagnosis and patient-tailored targeted treatment in locally advanced Gastric Cancer (GC) and in Rectal Cancer (RC) patients.

Methods: 130 consecutive RC patients (45F, 85M mean age: 63 years) and 54 consecutive GC patients (26F, 28M mean age: 62 years) underwent endoscopy with pCLE-GastroFlex UHD probe and i.v. fluorescein infusion in order to evaluate intratumoral vasculature. After CT/RT treatment, 69 RC (22F, 47M, mean age: 65 years) and 12 GC patients (7F, 5M, mean age 56 years) were revaluated using pCLE.

Vascular assessment was based on Cannizzaro-Spessotto (CS) scale which evaluated vessel shape, size, permeability and blood flow. The angiogenic score ranged from 0, for normal to 4 for aberrant vasculature.

Results: 79% of RC patients had an angiogenic score 3 or 4 at diagnosis. The angiogenic score after therapy showed a statistical significant improvement (median CS score pre CT: 3.3 vs. median CS score post CT: 1.8) in almost all RC patients (73%). In GC patients we found unchanged vascular alterations which correlated positively with stable or progressive disease. Since in only 25% of GC patients was detected a small remission it was possible that the unaltered angiogenic score could be ascribed to the lack on neoangiogenesis.

Conclusions: Data demonstrate that during the treatment schedule, pCLE analysis is very important for predicting the efficacy of treatments and possibly introduce anti-angiogenic drugs when necessary. Future studies are necessary for the evaluation of pCLE impact in patients survival. This work was supported by the following grant Ministry of Health RF–2016–02361525 to R.C.
Ep73V ENDOSCOPIC REMOVAL OF A COLONIC FOREIGN BODY USING A LOOP CUTTER DEVICE

Authors Pires F1, Araújo R1, Carvalho A1, Pinho J1, Cardoso R1, Constantino J2, Martins D1, Sousa P1, Cancela E1, Castanheira A1, Ministro P1, Silva A1

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Foreign body ingestion is a common event in childhood but can also happen in adulthood, usually occurring accidentally during a meal. The authors report the case of a 61-year-old female, with no relevant personal history, who was sent to the emergency department due to a foreign body lodged in the sigmoid colon wall. The endoscopy unit found during two routine colonoscopies. Results 1st case: 39-y.o. man from Spain with distal ulcerative colitis who abandoned clinical follow-up. He presented with increased number of stools also passing blood with suspicion of mild flare. 2nd case: 32-y.o. woman from Spain. Ep74V NEMATODES ATTACHED TO COLONIC WALL. ENDOSCOPIC DIFFERENTIATION (WITH VIDEOS)

Authors Diéguez Montes L1, Aranda Hernández J2, Lucendo Jiménez L1, Ortega Lobete O1, García Lledó J1, Martos Vicaino E1, Carbó nell Blanco C1, Merino Rodríguez B1

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DOI 10.1055/s-0039-1681820

Endoscopic removal was attempted but the foreign body had its ends lodged into the colonic wall (diverticula area), with inflammatory signs and a small quantity of purulent drainage and it was decided to hospitalize the patient and start intravenous antibiotics. Endoscopy was repeated under general anesthesia two days later. A loop cutter device was used to cut the foreign body, with extraction of the two ends with grasping forceps. The sites of previous contact with the colic wall were closed with endoclips. The patient was discharged five days later without any complaints. The authors highlight the therapeutic innovation presented in this case, where an alternative use of a device enabled a safe and minimally invasive resolution and emphasize the excellent iconography collected on video.

Ep75V COMPARING COLON CAPSULE ENDOSCOPY TO COLONOSCOPY; A PATIENT’S PERSPECTIVE

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Aims To identify comfort scores and patient preferences between CCE and colonoscopy.

Methods Patients from our centre who had both CCE and colonoscopy within the last 12 months were identified. We performed over-the-phone interviews focused on satisfaction, comfort and overall preference. A 10-point scale was used to assess comfort and satisfaction. Electronic records were also reviewed. Student t-test was used to compare parametric data and a p < 0.05 was significant.

Results In all, 40 patients were identified. 57.5% (23/40) were female and the mean age was 48 (24 – 78). There was a statistically significance difference in mean comfort (9.2 vs. 6.7, p < 0.0001) but not satisfaction scores (8.3 vs. 7.7, p = 0.28) between CCE and colonoscopy. Bowel preparation was the main cause of dissatisfaction with CCE. The correlation between intra-procedural Modified-Glouster-Comfort-Scale and patient reported values was weak (R = 0.28). Overall, 77.5% (31/40) of patients would prefer CCE if they required further investigation. Of these, 77.4% (24/31) preferred CCE despite the potential need for follow-up colonoscopy.

Conclusions CCE has a high satisfaction rating and has a higher comfort rating than colonoscopy. Studies have confirmed CCE and colonoscopy have equivalent diagnostic yields. The majority of patients in our cohort prefer CCE to colonoscopy. CCE should be considered as an alternative to colonoscopy in selected individuals.

Ep76V FEASIBILITY OF A NEW ELECTROSURGICAL UNIT “AUTOCONIII400” FOR ENDOSCOPIC SUBMUCOSAL DISSECTION

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Aims Endoscopic submucosal dissection (ESD) is very useful for treating large superficial gastrointestinal tumors in endoscopic submucosal dissection. We performed ESD for 15 colorectal, 16 gastric, and 4 esophageal superficial neoplasms with AUTOCONIII400 for endoscopic submucosal dissection. The aim of this study was to evaluate the feasibility of the new electrosurgical device AUTOCONIII400 for ESD. VIO series (ERBE, Germany) is often used for ESD, but usefulness of other electrosurgical units for ESD is not fully elucidated. Herein, we investigated the feasibility of the new electrosurgical unit “AUTOCONIII400” (KARL STORZ, Germany) for endoscopic submucosal dissection.

Methods We performed ESD for 15 colorectal, 16 gastric, and 4 esophageal superficial neoplasms with AUTOCONIII400 for endoscopic submucosal dissection between February 2018 and May 2018. FlushKnife BT (Fujifilm, Japan) was used for 14 colorectal, 6 gastric, and 4 esophageal lesions. Jet B-knife (Zeon Medical Co. Japan) was used only for 2 colorectal lesions. ITKnife 2 (Olympus, Japan) was used only for 9 gastric lesions. We adjusted the settings to find the appropriate modes and settings for ESD.

Results Average tumor diameter, resected specimens diameter, and average procedure time were 22.8 mm, 40.2 mm, and 43.8 minutes, respectively. All lesions were resected without any complications. Appropriate settings were GastroKNIFE, medium, effect3 for mucosal cutting, Forced Mix mode, effect2,
Young adults [age < 50] following a diagnosis of colorectal cancer.

**Aims**
The primary aim of this study was to look at the 5 year survival rates in young adults under the age of 50 within the catchment area of our institution is comparable to the rest of the united kingdom (58%).

**Methods**
A retrospective observational study. The identity of young adults diagnosed with colorectal cancer between 2009–2017 were obtained from the Somerset cancer data base. Clinical information about the patient was obtained from the electronic patient database [i portal] Descriptive statistics and survival outcomes were performed using SPSS software.

**Results**
There were 171 patients over a period of 8 years, men (102) women (69). The majority of the tumours for both men and women were found in the rectum (64.6% and 35.4%). Far more patients presented with advanced disease (73%) compared to early disease (27%) [stageI&II]. p<0.0001. Although there was a trend toward low mcv in right sided cancers, there was no significant correlation between mcv and stage of disease at presentation. Surgery with curative intent was offered to 131 (76.6%). Neoadjuvant chemotherapy was received by 40 patients (23.4%) and best supportive care was offered to 12 (7%). Palliative chemotherapy was received by 25 patients (14.6%). Overall all 5 year survival for young adults diagnosed with colorectal cancer was 55%. After adjusting for missing data and confounding variables this improved to 66%. There was no difference in survival between men and women.

**Conclusions**
Colorectal cancer is considered a disease of old age. However the incidence of colorectal cancer, particularly rectal cancer in young adults is increasing. It is well known that young adults tend to present with advanced stage of the disease. Our study also support this observation. The overall 5 year survival following a diagnosis of colorectal cancer in young adults under the age of 50 within the catchment area of our institution is comparable to the rest of the united kingdom (58%).

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**eP77 A RETROSPECTIVE REVIEW OF COLORECTAL CANCER OUTCOMES IN YOUNG ADULTS**

**Authors**
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**DOI**
10.1055/s-0039-1681823

**Aims**
The primary aim of this study was to look at the 5 year survival rates in young adults [age< 50] following a diagnosis of colorectal cancer.

**Methods**
This was a retrospective observational study. The identity of young adults diagnosed with colorectal cancer between 2009–2017 were obtained from the Somerset cancer data base. Clinical information about the patient was obtained from the electronic patient database [i portal] Descriptive statistics and survival outcomes were performed using SPSS software.

**Results**
There were 171 patients over a period of 8 years, men (102) women (69). The majority of the tumours for both men and women were found in the rectum (64.6% and 35.4%). Far more patients presented with advanced disease (73%) compared to early disease (27%) [stageI&II]. p<0.0001. Although there was a trend toward low mcv in right sided cancers, there was no significant correlation between mcv and stage of disease at presentation. Surgery with curative intent was offered to 131 (76.6%). Neoadjuvant chemotherapy was received by 40 patients (23.4%) and best supportive care was offered to 12 (7%). Palliative chemotherapy was received by 25 patients (14.6%). Overall all 5 year survival for young adults diagnosed with colorectal cancer was 55%. After adjusting for missing data and confounding variables this improved to 66%. There was no difference in survival between men and women.

**Conclusions**
Colorectal cancer is considered a disease of old age. However the incidence of colorectal cancer, particularly rectal cancer in young adults is increasing. It is well known that young adults tend to present with advanced stage of the disease. Our study also support this observation. The overall 5 year survival following a diagnosis of colorectal cancer in young adults under the age of 50 within the catchment area of our institution is comparable to the rest of the united kingdom (58%).

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**eP78V CUTTING DELAY DURING POLYPECTOMY OF A LARGE PEDUNCULATED POLYP IN THE CAECUM – USE OF A PARTIALLY ISOLATED SNARE**

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10.1055/s-0039-1681824

A 69-year old female patient was submitted for endoscopic resection of a large pedunculated polyp in the caecum. After submucosal injection with 10 ml of diluted epinephrine solution, a braided wire snare (25 mm, Olympus-Europe, Hamburg, Germany) was placed around the lesion. Cutting with the HF Unit ERBE VIO 300 (ERBE-Elektromedizin, Tübingen, Germany) was started with EndoCUT Q Effect 3, however, no cutting current could be established at the polyp stalk.

Therefore we changed to a partially isolated polypectomy snare with 30 mm (Micro-Tech Europe, Düsseldorf, Germany). The HF generator was set to Auto Cut and the polyp could be resected in one piece. After the endoscopic treatment, an active bleeding could be controlled with through-the-scope clips.

The histopathological diagnosis showed high-grade dysplasia with an R0 resection.

**Conclusion**
Complete resection of large pedunculated polyps could involve the risk of a cutting delay. Partially isolated snares could be an answer because the current in the cutting wire is strongly reduced. Attention has to be payed to postinterventional bleeding.

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**eP79 APPLICATION IN OUR CENTER OF THE CLINICAL GUIDE FOR ENDOSCOPIC RESECTION OF COLON POLyps IN THE MANAGEMENT OF ADENOCARCINOMA PT1**

**Authors**
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**DOI**
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**Aims**
The pT1 adenocarcinoma resected endoscopically poses a challenge in terms of its management. In some cases, there is a lack of scientific evidence that supports the need of additional invasive treatments. The Spanish Society of Digestive Endoscopy suggests the classification of these injuries according to the risk of dissemination, multidisciplinary advice and individualized decision for patients at intermediate/high risk.

**Methods**
A descriptive, prospective study analyzing the follow-up in our center of patients undergoing endoscopic resection of pT1 adenocarcinoma between January 2015 and June 2018.

**Results**
138 patients, 96 men (69.6%), with an average age of: 68.42 +/- 9.75 years and an average follow-up time of 20.96 +/- 10.76 months. The most frequent reason for the indication of a colonoscopy was a positive SOX test within the CCR screening program: 68 (49.3%). The average size of the injuries was 22.36 +/- 11.54 mm; 75 (54%) were Paris 0-Ip. In 114 (82.6%) polypectomy was performed in bulk. We described 2 perforations (1.4%) and 17 haemorrhages (12.31%) all endoscopically solved. We classified in risk groups according to the guide of resection polyps of the Spanish Society of Digestive Endoscopy: 67 (48.6%) of low risk, 22 (15.9%) intermediate risk, 39 (28.3%) high risk and 10 (7.2%) resection incomplete. We analyzed the medium-high risk subgroup, after the multidisciplinary committee, 40 (65.57%) were included in the endoscopic surveillance and 19 (31.14%) were operated. Of the patients operated, in 5 (26.31%) the histology of the surgical piece was positive, without significant relationship with any parameter of poor prognosis analyzed. In the endoscopic follow-up, 4 presented recurrence results, resolved by endoscopy.

**Conclusions**
In our series, the management suggested by the Spanish Society Digestive Endoscopy seems adequate, in absence of confirmation of results with longer follow-up and larger sample size.

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**eP80 HISTOPATHOLOGICAL FEATURES OF POSTCOLONOSCOPY COLORECTAL CANCER**

**Authors**
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**DOI**
10.1055/s-0039-1681826

**Aims**
The targets of this study are to describe postcolonoscopy colorectal cancer (PCCRC) histopathological features and to evaluate relevant differences between PCCRC and sporadic colorectal cancer (SCRC) in this topic.

**Methods**
A retrospective simple centre study in a Universitary Hospital was carried out. Colorectal cancer (CRC) cases diagnosed for three years period
were revised (n = 291). PCCRC cases were identified (n = 17; 6–60 months after a negative colonoscopy). Statistically significant differences regarding histological type in both groups were analysed (PCCRC vs. SCRC). To value histopathological differences, PCCRC cases and a SCRC control group were paired (1:1) regarding histological type, tumour grade, tumour stadium and location. Features related with CRC prognosis were re-examined by an expert pathologist (lymphatic, vascular and perineural invasion, budding tumour major than 10, tumoral grown type, peritumoral lymphoid inflammatory infiltration grade, lymphoid Crohn type response and Tumour Intraepithelial lymphocytes. Statistical analysis: Pearson X2 test for qualitative variables.

**Results**

Ciliated adenocarcinoma and High-Microsatellite Instability Carcinoma (MSI-H) were more frequent in PCCRC group than in SCRC (23.53% and 11.76% versus 14.57% and 2.21% respectively), but differences were not significant. All cases of PCCRC had an inflammatory infiltration (High or Low grade) versus 58.83% in SCRC control group (p = 0.011). Lymphoid Crohn type response was present in 47% of PCCRC cases versus 5.88% of SCRC control group (p = 0.007) (Table 1). There were no statistical differences in the other histopathological features.

**Conclusions**

There are few studies in the literature that analyse PCCRC pathological features. Studies about histopathological characteristics described above have not been found. Predominating Inflammatory infiltration and lymphoid Crohn type response are histopathological features observed in PCCRC with significant difference. Further studies are necessary to extrapolate results observed in this study.

**eP82** COMPARISON OF THE THERMAL ARTEFACT BETWEEN EMR AND UNDERWATER-EMR AND IT’S INFLUENCE IN THE HISTOLOGICAL ASSESSMENT

**Authors**

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Aims

Thermal artefact in endoscopic mucosal resection (EMR) specimens, suppose one of the main drawbacks in the pathologic assessment. Heat dissipation effect endorsed by underwater-EMR might lead a way to prevent this handicap. We aimed to compare the thermal artefact in samples of en-block resection perfomed by EMR and Underwater EMR. In this regard, injuries in margins and in the whole samples were cautiously assessed.

**Methods**

We performed a retrospective cross sectional study in which en bloc specimens of U-EMR and EMR were included. All the procedures were accomplished with Endocut Q current (Effect 3; Time 1-interval 6) (ERBE VIO200 s). All samples were assessed by two expert pathologist according to a non-validated score from 0 (non injury) to 3 (Severe injury-non evaluable) both in margins and the whole sample. Furthermore, we also assess the possibility of been able to mount the pieces in a cork after the resection.

**Results**

A total of 40 specimens were finally included (22 U-EMR y 18 EMR). Regarding to the margins assessment, EMR showed a severe injury in 55.6% vs. 27.3% of the lesions resected by U-EMR (p = 0.06). Otherwise, whole architecture of the polyps were deeply altered in 17% of the specimens in the EMR group versus 9% in the U-EMR group (p = 0.47). Nevertheless, these differences were specifically stressed in case of the architecture of serrated lesions, which was severely altered in 100% of cases resected by EMR, compared to only 20% of cases resected by U-EMR (p = 0.07).

**Conclusions**

These preliminary results show that U-EMR might be an option to prevent thermal artefact in specimens sent to pathologist. This fact remains especially useful in case of serrated lesions.
resection (EMR) in 429 pts (73.8%) and endoscopic submucosal dissection (ESD) in 132 pts (22.7%). GM-LSTs were removed en-bloc in 114 cases (20%). In 17 patients the GM-LSTs lesions were considered unfit for endoscopic resection and were referred to surgery. GM-LSTs were mainly located in the rectum (245, 42.2%) and in the right colon (245, 42.2%), while 48 lesions (8.2%) were in the left colon and 43 (7.4%) in the transverse colon. Histology showed low grade dysplasia (LGD) in 160 lesions (27.5%), high grade dysplasia (HGD) in 342 lesions (58.9%) and adenocarcinoma in 79 lesions (13.6%). When histology was analyzed according to lesion location the incidence of cancer was 18.8% (46/245) in the rectum vs. 9.8% (33/336) in the other colonic segments (p value = 0.001). Overall 41 (51.9%) pts with adenoscarcino-

ma underwent surgery.

Conclusions Our study confirms the increased rate of adenocarcinoma in

patients with GM-LSTs as highlighted in the literature and shows that the prevalence of cancer is significantly greater at the level of the rectum than in other colonic segments. Further prospective multicentric studies are needed to define the best therapeutic approach for the removal of GM-LSTs.

eP84V ENDOCYTIC TRASLUMINAL DRAINAGE OF ENDOLUMINAL DIVERVITICULAR ABSCESS

Authors Canaval Zuleta H1,2,3, Angel Ferrer Rosique J1,2,3, Riado Minguez D1,2,3

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Aim To describe the case of a diverticular endoluminal abscess, successfully endoscopically drained without any complication.

Methods We review the case of an endoscopic drainage performed in the endoscopic unit with a follow-up during hospitalization and after two month of having been discharged.

Case report A 65-year-old man who came for a colonoscopy screening due to occult blood stool and a family history of colorectal cancer. He referred a 2 week history of abdominal pain and dysthermia, without fever, nausea, vomit-

ing or diarrhea. Colonoscopy revealed diverticulitis in the sigmoid colon and a submucosal mass of approximately 20 × 30 mm. in size with a slightly hyper-

epithmic surface mucosa. Palpation of this area with cold forces was soft and after oppression it drained a whitish discharge, with thick purulent aspect with decompression of the lesion. CT scan was later performed and showed sig-

moid diverticulitis without evidence of perforation. Antibiotic therapy was given with adequate clinical response.

Conclusions:

1. The diverticular abscess in this case is an intraluminal complication of a diverticulitis but it is usually extraluminal.
2. There are only two cases in the literature described by Barkin et al and Calzolari et al with similar presentation. This would be the third case of a diverticular abscess successfully endoscopically drained and without any complications.
3. While colonoscopy is not recommended in episodes of acute diverticulitis, there are certain cases in which it has to be considered not only as a diagnostic tool but also as a minimally invasive therapeutic option.

eP84_1 RISK OF INFECTION FOLLOWED BY COLONOSCOPIC POLYPECTOMY IN PATIENTS WITH LIVER CIRRHOSIS: A KASID MULTICENTER STUDY

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Aims Liver cirrhosis is an immunocompromised state. However, there have been no study about infection rates and related risk factors in the patients with liver cirrhosis followed by colonoscopic polypectomy including endoscopic mucosal resection (EMR) and endoscopic submucosal dissection (ESD). We aimed to evaluate the incidence of infectious complication followed by polypectomy and investigate risk factors of infectious complication in these patients.

Methods In this multicenter, retrospective study involving 10 tertiary centers in Korea, we evaluated 892 patients who had been diagnosed as liver cirrhosis and underwent colonoscopic polypectomy from Jan 2013 to December 2017. We evaluate the incidence of infectious complication after polypectomy and evaluated risk factors for infection.

Results Infection rate after colonoscopic polypectomy was 2.9% (26/846). The infection rates of local infection, systemic infection and other infection were 2.1%, 1.2%, and 1.0%, respectively. In univariate analysis, old age (odds ratio (OR)=1.86, 95% confidence interval (CI): 1.10–3.16, P = 0.002), hepatic dysfunction (OR = 4.50, CI: 1.96–10.50, P = 0.001), the presence of ascites (OR = 2.00, CI: 1.00–4.54, P = 0.05), and tumor size > 10 mm (OR = 2.72, CI: 1.23–6.02) are associated with infection. In multivariate analysis, old age (OR = 1.79, 95% CI: 1.05–4.16, P = 0.010), hepatic dysfunction (OR = 4.50, CI: 1.55–9.70, P = 0.005).

Conclusions Clinical infectious complication was relatively high in liver cirrho-
sis patient after colonoscopic polypectomy, especially patient with old age or hepatic dysfunction, which may warrant prophylactic administration of anti-

biotics in these high risk patients.

Friday, April 5, 2019 09:00 – 17:00

Endoscopic technology ePosters

eP85 CONFOCAL LASER ENDOMICROSCOPY IN THE ASSESSMENT OF PERSISTENT OR RECURRENT INTESTINAL METAPLASIA/NEOPLASIA AFTER ENDOCYTIC TREATMENT OF BARRETT’S ESOPHAGUS RELATED NEOPLASIA – A PROSPECTIVE STUDY

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Aims Patients after endoscopic treatment of Barrett’s esophagus related neo-
plaia (BORN) should undergo regular endoscopic surveillance. Probe-based confocal laser endomicroscopy (pCLE) offers detailed examination of cellular structures and may examine larger areas compared to standard biopsy. The aim of this study was to evaluate the efficacy of pCLE (vs. standard biopsies) in detection of persistent/recurrent intestinal metaplasia (IM)/neoplasia (N) in patients after endoscopic treatment of BORN.

Methods A single center, prospective, controlled and pathologist-blinded study in patients undergoing surveillance endoscopy after treatment of BORN. pCLE images were obtained from the neo-Z-line, the cardia and the esophagus. Thereafter, standard biopsies were taken and sent for histopathological analysis (minimally 4 biopsies from neo-Z-line, 2 biopsies from the cardia). Biopsies from the cardia and the esophagus and targeted biopsies from visible abnormalities, if present).

Results We examined 42 patients, from these 16 patients (38%) had the initial diagnosis of LGN, 10 patients (24%) had HGN and 16 patients (38%) had EAC. Six patients (14%) underwent endoscopic resection (ER) only, 20
patients (48%) underwent ER of all visible lesions followed by radiofrequency ablation (RFA), and 16 patients (38%) had RFA as a single treatment modality. Persistent/recurrent IM was detected only at the level of neo-Z-line in 11 patients (26%, 11/42 pts) by both standard biopsies and pCLE. pCLE but not biopsies detected IM in 2 patients (5%, 2/42), another 2 patients had IM present in biopsies but not in pCLE. pCLE diagnosed one patient with recurrent LGIN in a macroscopic visible tongue, which was not confirmed in biopsies. Sensitivity and specificity of pCLE in detection of persistent/recurrent IM was 93% and 85%, respectively, with a positive predictive value of 93% and a negative predictive value of 86%. Agreement of pCLE and histopathological findings was 90%.

Conclusions pCLE is comparable to standard biopsies in detection of persistent/recurrent IM after endoscopic treatment of BORN.

eP86 EVALUATION OF A NEW DEMILUNE SHAPED DEVICE FOR RAPID ENDOSCOPIC SUBMUCOSAL DISSECTION (ESD)

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Aims ESD has been established as an effective treatment option for early gastrointestinal cancer. To date, various devices for ESD are available. Most recently, a novel, demilune shaped device was introduced potentially allowing for fast submucosal cutting due to its special design which allows rapid movements of the device above the muscle layer. I addition, the device allows for selective grasping of the vessels thereby enabling ad hoc haemostasis. Primary objective of the study was to evaluate the efficacy and learning curve of a newly developed demilune shaped device for ESD.

Methods Ex vivo porcine models were utilized in an advanced endoscopic simulator of interventional endoscopy. Artificial lesions, each 2 × 2 cm in size, were created in fresh ex vivo porcine stomachs at the fundus, corpus and antrum. ESD was performed after marking of the lesions with the ESD instrument, followed by lifting of the mucosa with submucosal injection of colored saline. Afterwards, circular incision of the lesions was performed with the new ESD-instrument. For resection, the submucosa was lifted with a distal clear cap and cut with the new demilune device. Resection specimens were retrieved to evaluate if all marks were included (R0).

Results Average size of removed lesions was 30 mm. En-bloc resection rate was 100% and R0 resection rate was 95%. Mean total procedure time was 25 minutes and not dependent on the location. No perforations occurred during the study despite the rapid dissection speed through the submucosa. Satisfaction of the endoscopist and the supporting nurse staff was high throughout all cases.

Conclusions The new demilune shaped device for ESD allows for rapid dissection of the submucosa due to its inherent design. Further studies should be now focusing on in vivo studies to confirm these initial results.

Friday, April 5, 2019
Endoscopic ultrasound 09:00 – 17:00 ePosters

eP87 RAPID ON-SITE EVALUATION (ROSE) FOR EUS-GUIDED FINE NEEDLE ASPIRATION (EUS-FNA) OF SOLID PANCREATIC LESIONS: “ON SITE” MULTIDISCIPLINARY TEAM IS THE PIVOT FOR AN ACCURATE DIAGNOSIS

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Aims Compare the adequacy, diagnostic yield and accuracy of EUS-FNA for solid pancreatic lesions before and after introduction of ROSE in a single center study.

Methods All consecutive EUS-FNA procedures for pancreatic lesions performed during the first year of adoption (ROSE1 group) and the following year (ROSE2 group) were compared to those performed during the previous year (pre-ROSE group). EUS-FNA was performed using a linear echoendoscope using 22 or 25 Gauge diameter needles. Adequacy (sample provides sufficient material for evaluation), diagnostic yield (established diagnosis rate), diagnostic accuracy (correspondence between cases for which a diagnosis was rendered and the gold standard) of EUS-FNA were evaluated. Specimen were categorized into: diagnostic in presence of a specific diagnosis and non diagnostic if no sufficient cells or atypias were reported. Histological analysis of surgical specimen, when available, was considered the gold standard for diagnosis; otherwise, clinical and radiologic follow-up compatible with neoplasia (positive) or absence of deterioration/spontaneous resolution (negative) were examined.

Results 94 pancreatic lesions in 92 patients were enrolled (26, 30 and 38 in pre-ROSE, ROSE1 and ROSE2 groups, respectively). Patient number and age, lesion size and localization, technique (needle diameter, number of passages) were omogeneous. Adequacy rate was 96.2%, 93.3% and 100% in pre-ROSE, ROSE1 and ROSE2 groups, respectively (p = NS); diagnostic yield was 76.9%, 86.7%, 92.1% and accuracy 65.4%, 76.7% and 86.8% respectively, with significant difference between pre-ROSE and ROSE2 groups (p < 0.5).

Conclusions The use of ROSE during EUS-FNA for solid pancreatic lesions is associated with an improvement in terms of diagnostic yield and accuracy, but it does not seem to improve the adequacy of FNA. Rather than the technique adopted, the multidisciplinary team is the real pivot for an accurate diagnosis.

eP88 ENDOSCOPIC ULTRASOUND GUIDED LEFT LOBE LIVER LESIONS BIOPSY (EUS-LLB) WITH ATYPICAL MALIGNANCIES, AN ALTERNATIVE APPROACH TO RADIOLOGICAL IMAGE GUIDED BIOPSY

Authors Urrehman A1

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Aims EUS is gaining attraction as an alternative method of biopsy. It offers a more targeted approach for focal lesions in liver especially those areas which are accessible via EUS-guided method.

Methods A total of 7 patients from Feb 2018 till September 2018 underwent EUS-guided Left Lobe lesions biopsies using 22G FNA needle. 2 passes were done with slow pull technique over one minute with 10 – 15 strokes in each
pass to obtained core samples. Duration of procedures ranges from 15–30 minutes.

Results Case 1: 78 male with history of gastrectomy 5 years back for gastric cancer, presented with weight loss and vague epigastric pain. CT scan showed left lobe lesion. Biopsy showed well differentiated Adenocarcinoma from Gl Tract. Case 2: 58 male presented with weight loss and liver mass on CT Scan. Hepatitis B & C screen was negative with normal AFP levels. Biopsy revealed Sarcomatoid Carcinoma. Case 3: 53 male presented with weight loss and abdominal pain with multiple liver lesions on CT scan. Biopsy revealed Neuroendocrine Tumor. Case 4: 35 male presented with abdominal pain, anti-HCV reactive with normal AFP levels. CT Scan showed liver lesion suggestive of atypical Hepatocellular carcinoma. Biopsy revealed Smooth Muscle Tumor. Case 5: 60 female presented with weight loss, CT scan showed pancreatic malignancy with liver metastasis. Biopsy revealed Metastatic Adenocarcinoma. Case 6: 42 underwent presented with obstructive jaundice from ampullary Carcinoma. She underwent EUS staging which revealed left lobe lesion. Biopsy revealed Metastatic Adenocarcinoma. Case 7: 32 male presented with weight loss and obstructive jaundice, CT scan showed left lobe malignancy consistent with Cholangiocarcinoma, biopsy revealed Lymphoproliferative disease (Lymphoma).

Conclusions EUS-guided LLB is an alternative new technique for biopsy of liver lesions with suspected atypical malignancies. It appears to have higher level of safety and accuracy for targeted lesional biopsies.

eP89V LOST AND FOUND – SPONTANEOUS GASTROINTESTINAL EXPULSION OF A MIGRATED LAMS

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Lumen-apposing metal stents (LAMS) are increasingly used for drainage of symptomatic pancreatic walled-off necroses (WON) and pseudocysts. As noted in a growing number of studies, complication rates associated with endoscopic drainage procedures using LAMS are low and, among others, include bleeding, superinfections, stent occlusion and migration. Despite its special anti-migratory design, cases of LAMS migration have been reported both into the cyst cavity and stomach. We describe the first reported case of LAMS migration and spontaneous expulsion through the gastrointestinal tract. A 61-year-old man with a large symptomatic peripancreatic necrotic collection following an earlier episode of acute necrotic biliary pancreatitis was referred to our Interventional Gastroenterology Unit for evaluation and management. At admission the patient was in a state of chronic sepsis, complained of early satiety and abdominal pain, and computed tomography (CT) revealed a peri-pancreatic heterogeneous necrotic collection measuring 15 × 11.6 cm with bilateral pleural effusions and ascites. Endoscopic ultrasound-guided drainage through the gastric wall was performed using 15-mm cautery enhanced LAMS with a flange diameter of 24 mm (Hot AXIOS, Boston Scientific, USA). Regression of WON size was observed promptly after the procedure and following the clinical improvement the patient was discharged. He was readmitted 7 days later due to fever and abdominal pain. Control CT scan showed LAMS occlusion by necrotic debris and intraabdominal abscess on the left paracolic space. Stent de-occlusion and necrosectomy was performed along with an intraabdominal percutaneous drainage placement under ultrasound guidance. The follow-up CT scan showed nearly complete WON resolution and patient was scheduled for LAMS extraction 31 days after its placement (Video). The LAMS, however, couldn’t be visualised the following day on upper endoscopy and was retrieved by the patient after a bowel movement while waiting a fluoroscopy.

eP90 THREADING THE NEEDLE: DIAGNOSTIC YIELD OF ENDOSONIC ULTRASOUND GUIDED FINE NEEDLE ASPIRATION IN REAL WORLD CLINICAL PRACTICE

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Aims The primary aim was to assess diagnostic yield of solid pancreatic lesions. Secondary outcomes include: assessing the number of passes performed and the presence of trainees on diagnostic yield.

Methods Electronic endoscopy recording system (EndoRad) identified patients that underwent endoscopic ultrasound (EUS) in 2017. Endoscopy reports were examined manually to identify if EUS guided sampling of solid pancreatic lesions was performed. Patient demographics, presence of trainee and number of passes with sampling needle were recorded from endoscopy reports. Pathology reports were examined to assess whether an adequate sample was received from EUS guided sampling.

Results 388 EUS procedures were performed in 2017. 48 patients (12%) with solid pancreatic lesions underwent EUS guided tissue sampling. 77% (37/48) of procedures yielded an adequate tissue sample as per histology report. The higher the number of passes, the higher the proportion of samples having an adequate sample for diagnostic purposes, with yields of 89% (16/18) for 3 passes compared to 72% (13/18) and 67% (8/12) for two and one passes respectively. The presence of a trainee was associated with an increased diagnostic yield, 85% (23/27) versus 67% (14/21).

Conclusions This retrospective study demonstrates that a higher number of passes is associated with higher diagnostic yield, mirroring published clinical trials and interestingly that the presence of a trainee increases diagnostic yield. A standardised protocol for number of passes and needle type used may also warrant repeat audit in the future.

eP91 FEASIBILITY AND EFFICACY OF A NOVEL NEEDLE IN ENDOSCOPIC ULTRASOUND-GUIDED TISSUE SAMPLING FOR PANCREATIC SOLID LESIONS: A PROSPECTIVE RANDOMIZED COMPARATIVE STUDY

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Aims Histologic confirmation is crucial in the evaluation of pancreatic solid lesions. Recently, variable needles with different shapes for endoscopic ultrasound-guided tissue sampling (EUS-TS) have been widely used to diagnose pancreatic lesion. However, most needles used currently are made from major companies and expensive. Therefore, it is urgent to develop an inexpensive needle with a novel concept technology. We evaluated the feasibility and efficacy of a newly developed prototype needle in EUS-TS for pancreatic solid lesions comparing the commercially available ones.

Methods As a prospective randomized trial, we compared between a 22-gauge needle (22G, Clear-Tip, FINEMEDIX, Daegu, Korea) with side-hole of both reversed bevel (test needle) and three commercially available 22G biopsy needles (control needle) in patients with undergoing EUS-TS of pancreatic solid lesions. First two passes of EUS-TS were accomplished in a random order between test and control needles. The procured specimens were prepared for the comparison of specimen adequacy and diagnostic accuracy to final diagnosis. Additional two passes were performed using the control needle for histologic diagnosis. Two blinded pathologists evaluated the specimens based on an already agreed diagnostic criteria for cytology and histology.

Results Between February and June 2018, 24 patients (median 63.5 years, 14 males) with pancreatic solid lesions were enrolled. Among them, one patient
had no final diagnosis due to inadequate specimen. Technical failure occurred in one case of test needle. There was no significant difference between test and control needles in terms of specimen adequacy (91.3% vs. 95.8%) and diagnostic accuracy (72.7% vs. 82.6%) (p value = 0.456 and 0.331, respectively).

Conclusions: The new prototype needle is feasible and efficient for EUS-TS in pancreatic solid lesions. However, further study including large volume and for other lesions is needed to validate these results.

E993 LONG-TERM EFFICACY AND COST EFFECTIVENESS OF ENDOSCOPIC TREATMENT OF PANCREATIC PSEUDOCYSTS: PI GTAIL VS SELF EXPANDING METAL STENTS (SEMS)

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Aims: Currently endoscopic therapy is a gold standard management option of pancreatic pseudocysts. However, particular type of stent application in larger pseudocysts is still debated, especially regarding long-term outcomes and costs. Therefore, we hypothesized that due to its larger diameter and improved drainage SEMS would be as efficacious and cost effective as pigtail stents in resolving pseudocysts larger than 6 cm.

Methods: To test the hypothesis we conducted a retrospective cohort study into patients who underwent endoscopic pancreatic pseudocystogastrostomy in VULSK during 2012–2017. Patients were followed up for 6 months when according to local protocol stent should be removed. We collected demographic (age, gender) and clinical data (stent type, size of the pseudocyst, presence of infection, bleeding, sequential operation, resolution of the cyst, number of days admitted in 6 months, number of endoscopies performed) from hospital records. Economics department provided the data regarding treatment costs. For statistical analysis we used R statistical package. To compare the groups we used Chi-square, Fisher-exact test and t-test. Results were considered statistically significant if p < 0.05.

Results: Our study comprised 49 patients, 75% of whom were men. All drainage procedure were done under EUS guidance and during 6 months of follow-up all patients attained pseudocyst resolution. Main findings are summarized in Table 1.

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<td>Patients</td>
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<td>Bleeding in 6 months</td>
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<td>Days of hospitalization in 6 months</td>
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<td>Treatment cost in 6 months (EUR)</td>
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Conclusions: In patients with large pancreatic pseudocyst, pancreatogastrostomy with SEMS is at least as efficient and cost effective as drainage with pigtail stents. A larger prospective randomized controlled trial would provide definite guidance for best clinical and economic practice.

Ep94V BEYOND PALLIATION: USING EUS-GUIDED CHOLEDOCHOUDUODENOSTOMY WITH A LUMEN-APPOSING METAL STENT AS A BRIDGE TO SURGERY

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Introduction: We analyzed the efficacy of pylorus-preserving pancreaticoduodenectomy (PPPD) after endoscopic ultrasonography-guided choledochoduodenostomy (EUS-CD) using a lumen-apposing metal stent (LAMS) as a bridge to surgery.

Patients and methods: Retrospective multicentric analysis of all consecutive failed-ERP patients (06/2017 – 10/2017) who subsequently underwent EUS-CD using LAMS, followed by PPPD with resectable distal malignant biliary obstruction.

Results: Five patients underwent an EUS-CD using EC-LAMS; the bile duct was accessed using the transbulbar approach. The technical success rate of EUS-CD was 100%. No procedure-related adverse events occurred. Five patients underwent PPPD with a technical success rate of 100%.

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The presence of a transduodenal LAMS did not impede surgery. No cases of biliary or duodenal fistula occurred. Pancreatic fistulas with late bleeding were observed in 2 patients (1 fatal).

Discussion and conclusion These few cases indicate that PYPD after EUS-CD using LAMS is feasible and safe. EUS-CD should be performed irrespective of the stage of the disease, also for patients fit for surgery.

Additional larger prospective studies are required to confirm this preliminary data, in particular for possible interference with postoperative outcomes.

**eP96 FACTORS ASSOCIATED WITH WOPN ENDOscopic TREATMENT SUCCESS**

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**Aims** Endoscopic necrosectomy with metal stents, especially lumen apposition metal stents (LAMS), is increasingly being used for the treatment of complicated walled-off pancreatic necrosis (WOPN), but the need for necrosectomy is not well understood. The aim of this study is to evaluate clinical, endoscopic and radiologic predictors for the need of necrosectomy in patients treated with LAMS.

**Methods** Patients with WOPN treated with LAMS from 2014 to 2017 in our unit were retrospectively reviewed. Data was obtained from medical records and reviewed by endoscopist and radiologist. Clinical success was defined as the percentage of patients without need for surgery. Necrosectomy was performed only when clinically needed (i.e. fever or hemodynamic instability during follow-up). Predictors for the need of necrosectomy were evaluated with univariate analyses.

**Results** Eighteen patients were analyzed. Three were excluded due to early decease (2 intestinal perforation and 1 pancreatitis recurrence and advanced age). Among the remaining 15, 67% were men with mean age of 66 ± 14 years. One immediate adverse event occurred (7%) as the stent migrated to the gastric cavity during deployment, but was relocated in the same procedure. All 15 patients solved without need for surgery, but 5 (33%) required necrosectomy (4 multiple necrosectomy sessions, 1 only irrigation). The percentage of necrosis detected in the previous CT scan (47 ± 20% vs. 15 ± 18%, p = 0.008), and the purulent aspect of the fluid drained (100% vs. 40%; p = 0.044) predicted the need for necrosectomy in the univariable analysis, but only the first in the multivariable (p = 0.042). Other factors as age, gender, collection characteristics on CT scan (size, number, distance to stomach, or density) or EUS, or indication for drainage were not significant.

**Conclusions** Percentage of necrosis detected in the CT scan previous to WOPN drainage with LAMS might predict the need for necrosectomy.

**eP97V EUS-GUIDED BILIARY AND PANCREATIC DRAINAGE AS RESCUE DEFINITIVE THERAPY IN A PATIENT WITH CHRONIC PANCREATITIS AND VITAL RISK COMPLICATIONS**

**Authors** Vila J1, Aburruza L1, González G2, Carvalho J2, Costa J2, Uribarri L1, Estremera F1, Carrascosa J1, Fernández-Urrién I1

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**DOI** 10.1055/s-0039-1681843

**Case** A 67 year old male patient with records of chronic pancreatitis and partial gastrectomy with Roux-en-Y anastomosis is admitted to the hospital for acute cholangitis. During admission he suffers a bout of acute pancreatitis with infected perirenal collection developing severe sepsis with multiorgan failure requiring supportive therapy and admission to ICU. Pancreatobiliary surgeons decline surgical treatment because of the unacceptable surgical risk. EUS-guided hepaticojejunostomy for treatment of choanalgitis and percutaneous drainage of the perirenal collection are decided with subsequent clinical improvement. Maintained percutaneous purulent drainage precludes from complete resolution of the collection and feeding pancreatic duct dysruption is suspected on a CT scan. As rescue therapy to solve the pancreatic duct dysruption an EUS-guided wirstung-jejunostomy is performed. After this procedure the pancreatic dysruption and perirenal collection are finally resolved and the patient is discharged asymptomatic. One month after discharge he is admitted because of a new bout of acute cholangitis. Antegrade cleansing of the biliary tract with extraction of stones and sludge is performed through the hepaticojejunostomy stent. A preapillary biliary stenosis is seen and a plastic stent is antegrade and transpapillary placed for treatment of the stenosis. The patient remains asymptomatic and an elective antegrade endoscopic revision is made, both through the wirstung-jejunostomy with transpapillary passage of a new stent to complete the treatment of the pancreatic stenosis, and through the hepaticojejunostomy with retrograde extraction of the biliary plastic stent and placement of a transpapillary fully covered biliary stent to complete the treatment of the biliary stenosis (Video).

**Conclusion** We describe the case of a patient in such a poor condition precluding surgical therapy who was finally resolved by means of EUS-guided biliary and pancreatic drainage. This antegrade accesses allow now to complete the treatment of the biliary and pancreatic duct stenosis secondary to the chronic pancreatitis.

**eP98V EUS GUIDED BILIARY DRAINAGE – TECHNICAL VARIANTS**

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**DOI** 10.1055/s-0039-1681844

**Description** We present the video of 4 cases of obstructive jaundice solved with endoscopic ultrasonography guided biliary drainage. In 3 of these patients, it was not possible to access the second duodenal portion and/or to visualize the papilla major due to the presence of pancreatic head adenocarcinomas with subsequent duodenal invasion, which led to cholechochoduodenostomies in two of them, and the placement of a antegrade transpapillary metal stent through the duodenal bulb in the other patient. The fourth patient had obstructive jaundice secondary to metastatic hilar adenopathies, due to an advanced gastric neoplasia with gastro outlet obstruction. Biliary drainage was performed through a hepatogastrostomy. All procedures were performed with technical and clinical success (resolution of jaundice) and with no relevant adverse events related to the procedure. None of the patients presented biliary obstruction recurrence until their death.

**Motivation** ERCP stent placement is a minimally invasive 1st line technique for the treatment of biliary obstructions. Despite their high safety and efficacy, there are patients where this is not possible, even when performed by experienced ERCP endoscopists. The majority of these cases are related duodenum invading tumors, not allowing the duodenscope to access the 2nd duodenal portion or recognition of the major papilla. In these situations biliary drainage by echoendoscopy, is a valid option in centers with experienced ERCP endos-
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copists/echoendoscopy and adequate material and human resources. In this video we intend to illustrate 3 variants of this technique (choledochoduodenostomy, hepatogastrectomy, anterograde transapillary prosthesis), whose worldwide experience is still limited, given the high level of difficulty associated.

**eP99V** EUS-GUIDED LOCATION AND REMOVAL OF A BURIED LUMEN-APPOSING METAL STENT WITHIN THE GASTRIC MUCOSA

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**DOI** 10.1055/s-0039-1681845

**Introduction** Endoscopic ultrasound (EUS)-guided lumen-apposing metal stent (LAMS) placement has become the first-line management of pancreatic fluid collections (PFCs) at many centers. LAMS has also shown to be safe and effective for endoscopic transmural drainage of pancreatic pseudocysts (PP) and walled-off pancreatic necrosis (WON). However, its long-term safety profile is not fully established. Our aim was to describe a clinical case of a LAMS buried within the gastric mucosa that was located and removed by EUS.

**Endoscopic procedure** A 65-year-old man with chronic pancreatitis was admitted to the hospital because of PP drainage. PP was located in the body of the pancreas and drainage was performed using EUS-guided LAMS (Hot-Axios 6 × 8 mm, Boston Scientific) placement by “free-hand” technique without early complications. After 66 days, PP resolution was confirmed by an abdominal CT scan. However, during an upper gastrointestinal endoscopy to remove LAMS, inspection of the gastric wall revealed that the gastric mucosa was completely healed at the site of the stent. Then, an EUS was performed and a buried stent within the gastric mucosa was confirmed. Under endoscopic and fluoroscopic guidance, 19-gauge needle was used to puncture inside the stent and a 0.025” guidewire (VisiGlide, Olympus) was passed through the stent. After that, gastric wall was dilated and then the Hot Axios was removed with mouse clamp.

**Conclusions** LAMS are effective for endoscopic transmural drainage of collections, however, buried stent can be a long-term complication. In these cases, buried LAMS can be located and removed by EUS-guided procedure.

**eP102V** OBLITERATION OF GASTRIC VARICES GUIDED BY ECO-ENDOSCOPY WITH COILS INSERTION COATED WITH EXPANDABLE HYDROGEL POLYMERS

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**Introduction** Bleeding from gastric varices is a severe complication of portal hypertension, with few management alternatives, especially when there is a contraindication to TIPS. The usual therapeutic options are the injection of cyanoacrylate, the insertion of coils or both. The Hydrocoil, are used in neurovascular interventionism, allowing a rapid occlusion of the vessel forming a mesh that favours the local formation of thrombus and the development of a neointima on the gel cover. We consider its use for the vessel’s obliteration in the treatment of gastric varices, without using cyanoacrylate.

**Objective** The aim of this study is to evaluate the safety and effectiveness of the application of USE-guided hydrocoils in patients that bleed from gastric varices with TIPS contraindication.

**Material and methods** Retrospective series of cases including four patients with TIPS contraindication after evaluation form an interventional radiologist. We used linear echoendoscopes, fluoroscopy, 19G needles and hydrocoils (AZUR, Terumo), Progreat 3Fr microcatheters. The procedures were advised by an expert interventional radiologist. The obliteration of the vessel is confirmed by endoscopic ultrasound.

**Results** Technical and clinical success was reached in all 4 patients included. There were no adverse effects related to the procedure or equipment damage.

**Conclusions** The application of USE-guided Hydrocoils can be a safe and effective method in bleeding from gastric varices in patients not candidates for TIPS. It could also ensure a complete obliteration of the vascular lumen and thus dispense with the use of cyanoacrylate. Longer studies are needed to corroborate these preliminary results.

**eP103V** BEWARE OF THE GLUE

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**Background** Endoscopic injection of cyanoacrylate (CYA) was a step forward in the therapy of gastric varices (GV). However, it has been associated to adverse events, mainly, GE (glue embolism). To minimize the risk of GE, EUS-guided injection in the perforating feeding vein of GV of CYA was reported (1), followed by the deployment of coils in GV without injection of CYA (2). Another approach is to deploy into the gastric varix itself one or two coils followed by injection of CYA (3, 4). One multicenter study reported a rate of pulmonary GE of 30% after an average injection of CYA mixed with lipiodol by EUS-guidance (5).

**Aims & Methods** In the following videos we present, after injecting pure contrast through 19G needles into the GV, some aspects of the hemodynamic in this setting.

**Results** First-video: high-blood flow velocity and how the contrast is rapidly cleared out. Second-video: how the contrast flows through 5 coils through the gastrorenal shunt and up to the superior cava vein. Third-video: clearance of contrast in spite of 4 coils deployed. Fourth-video: how the flow is obstructed and the contrast remains in the gastric varix except for several small droplets that run through the coils. Fifth-video: shows a completely procedure. Two coils are deployed and though the contrast is fragmented into small drops and flows towards the gastrorenal shunt and superior cava vein. After deployment more coils, a mesh is obtained and thromboses of GV is achieved.

**Conclusions** EUS-guided therapy of GV seems promising because of its accuracy and safety profile. Although it is postulated that injection of CYA without lipiodol is safe there is no way to carry out asymptomatic GE if lipiodol and CT scans are not used.


**eP104V** EUS-GUIDED RECANALIZATION OF A COMPLETE STENOSIS OF THE BILIARY ANASTOMOSIS IN A PATIENT WITH WHIPPLE RESECTION

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**DOI** 10.1055/s-0039-1681848

**Access to the bile duct in a patient with Whipple resection can be an endoscopic challenge. The biliary-enteric anastomosis can be achieved by echoendoscopy (EUS) to assess the etiology of the stenosis and, if it is not possible to perform an ERCP due to complete stenosis, create the permeabilization of the anastomosis.**
A 57-year-old male with Whipple’s resection for pancreatic head cancer was admitted with cholangitis. The radiological images showed a dilation of the intrahepatic bile ducts and a complete stenosis of the choledocojejunal anastomosis. An external drainage was placed by interventional radiology, not being able to traverse the anastomosis. The spontaneous exit of this drain occurred, with the following percutaneous bile leak and disappearance of the intrahepatic dilation that made impossible this access again. Tumor recurrence was ruled out with a diagnostic EUS. The echoendoscope was inserted through the afferent limb, and a fine-needle aspiration of the anastomosis was performed.

An ERCP was attempted, but the anastomosis couldn’t be endoscopically identified, hence access by EUS was performed. With the echoendoscope in the afferent limb anastomosis, the common bile duct was punctured with a 19G needle and a guidewire was inserted. The fistula was dilated with a 6Fr cystome and subsequently a 10 mm Hurricane balloon was used. Finally a 10 x 40 mm fully covered metal stent with flaps was inserted, achieving the recanalization of the biliary anastomosis. It was fixed with a hemoclip.

Conclusions EUS is useful in the assessment of biliary anastomosis in patients with Whipple resection, and allows the recanalization of the anastomosis when the stenosis is complete.

**References**

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• CBD cannulated first: 199 out of 224 (88.9%)
• Biliary sphincterotomy done: 199 (100%)
• Successful MPD cannulation after biliary sphincterotomy: 185 (92.9%)
• Failed MPD cannulation after biliary sphincterotomy: 14 (7.03%)
• Pancreas Divisum found: 10/14 failed cannulations (71.4%)
• Failed MPD cannulation overall: 25 out of 1206 (2.07%).

Conclusions If direct MPD cannulation is difficult, cannulating the CBD first and doing a biliary sphincterotomy improves the MPD cannulation success rate significantly—Increase success from 81.4% to 92.9%. Failed MPD cannulation even after biliary sphincterotomy, 71.4% had divisum. Lavage therapy after failed cannulation would be EUS guided drainage or surgery.

eP109 CAROLI’S DISEASE (CD) CAUSED BY VERY RARE GENETIC MUTATION, MISDIAGNOSED WITH ERCP AND MRCP AS PRIMARY SCLEROSING CHOLANGITIS (PSC)

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Aims CD is a rare congenital condition characterized by localized or diffused, multifocal, segmental dilatation of the intrahepatic bile ducts. Mutations in polycystic kidney and hepatic disease gene 1 (PKHD1), located on chromosome 6, are responsible for CD, and many causative mutations are known. In some cases all clinical examinations are not sufficient to clearly diagnose CD, but genetic analysis may be helpful.

Methods We report the case of a 41 years old man on conservative treatment over 20 years for chronic renal insufficiency, with 4 episodes of cholangitis. Following extensive diagnostics (MRCP in 2 times, ERCP and liver biopsy) the differential diagnosis included PSC and CD. In order to resolve the diagnostic dilemma, we referred the patient for genetic diagnostics, where clinical exome sequencing (CES) was performed.

Results MRCP showed diffuse cystic/fusiform dilatation of the intrahepatic bile ducts and normal caliber of choledochal duct, with enlarged polycystic kidneys. First the differential diagnosis of CD with polycystic kidney disease and PSC with dysplastic kidney disease was made. Liver biopsy showed multiple bile duct hamartomas (MBH), without evidence of congenital hepatic fibrosis (CHF). On the following ERCP and MRCP examinations changes in bile duct pointing to PSC were described and the diagnosis was leaning towards PSC. CES showed the presence of 2 very rare pathogenic heterozygous variants in PKHD1 gene causing CD (nonsense variant c.370C>T, and missense variant c.4870C>T).

Conclusions We report the discovery of 2 pathogenic variants in PKHD1 gene, causing CD with polycystic kidney disease in a patient undiagnosed for many years. Sometimes MRCP, ERCP, not even liver biopsy is not sufficient to clearly diagnose CD. Finally, in children and adult patients who present with recurrent cholangitis and hepato/splenomegaly or in all cases with cholangitis and polycystic kidney disease, a diagnosis of genetic condition – CD, should be considered.

eP110 FULLY COVERED SELF EXPANDABLE METAL STENT IN THE MANAGEMENT OF DIFFICULT CHOLEDOCOLITIASIS

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Aims Difficult choledocholithiasis represents up to 15% of retained biliary stones and no standard treatment is codified. On this context, the temporary use of fully covered self expandable metal stent (FCSEMS) are an emergent option. Our aim was to assess the efficacy and safety of FCSEMS in the treatment of difficult common bile duct (CBD) stones.

Methods From February 2012 to September 2017 we retrospectively analysed 54 cases of difficult extrahepatic biliary stones, treated with at least one FCSEMS. Follow-up ERCP was performed for stent removal and new attempt of CBD clearance. In case of ineffectiveness, additional therapies such as ESWL, Dilatation Assisted Stone Extraction (DASE) or surgery, were given. Data regarding patient’s characteristics, bile duct and stone features, type of FCSEMS, adverse events, were analyzed.

Results FCSEMS placement was successful in all 54 patients. One patient died for massive delayed bleeding occurred after endoscopic sphincterotomy. Duct clearance with FCSEMS alone was achieved in 32 of 53 patients (60%) after a mean time of 34 days (Group A). Twenty one patients (Group B) underwent to additional treatments such as DASE (6 patients), ESWL (8 patients), ESWL +DASE (6 patients); surgery (1 patient). Univariate analysis showed the diameter of the stone was a predictive factor of unsuccessful treatment with FCSEMS alone (stone diameter 16.8 ± 5.1 mm vs. 20.3 ± 4.1 mm; p-value 0.01 and stone diameter ≥ 20 mm 34% vs. 67%, p-value 0.02, OR 3.8 (1.21-22) in group A and B, respectively). Stent migration occurred in 11 cases. Mild adverse events occurred in 12/53 patients over 156 ERCP performed and no significant differences among the two groups were seen.

Conclusions FCSEMS represents a safe and effective treatment in the management of difficult cholecystolithiasis. According to our case series, FCSEMS could be useful as single treatment for not giant biliary stones. Although this is the largest series available at the moment, further studies are needed to assess type of stent and its indwell time to reach best results.

eP111V BILE CAST SYNDROME- A RARE CAUSE OF BILIARY OBSTRUCTION AFTER LIVER TRANSPLANTATION SUCCESSFULLY MANAGED USING DIGITAL SINGLE-OPERATOR CHOLANGIOSCOPY

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Aims We report a case of bile cast syndrome 6 months after orthotopic liver transplantation successfully diagnosed and treated using digital single-operator cholangioscopy.

Methods A 29-year-old male patient was referred to our unit with jaundice and diffuse itching in the last 3 weeks, 6 months after deceased donor liver transplantation. Magnetic resonance cholangiopancreatography demonstrated intrahepatic bile duct dilation and stenosis at the level of the anastomosis. Endoscopic retrograde cholangiopancreatography was performed. Occlusion cholangiography revealed intact biliary anastomosis, irregular stenosis with a length of 25 mm ending close to the bifurcation. Cholangioscopy was carried out. The anastomosis was easy to pass through, bile casts were found in the donor bile duct adherent to the biliary wall, causing partial obstruction of the lumen. The bile casts were successfully cleaned with saline irrigation and multiple balloon sweeps. A 10 F 12 cm plastic stent was placed to secure the drainage.

Results Subsequently normalization of the liver function tests occurred and the patient experienced symptomatic improvement. One month later the plastic stent was removed. Follow up cholangioscopy demonstrated almost completely clean bile ducts. The patient remains asymptomatic 9 months after the procedure.

Conclusions Bile cast syndrome is a rare obstructive cholangiopathy occurring as a complication after liver transplantation. The diagnosis could be difficult, relying only on the traditional imaging modalities. The condition may mimic anastomotic or non-anastomotic bile stenosis leading to inappropriate treatment choice. Digital single-operator cholangioscopy may add useful di-
agnostic information to ERCP and could be superior to the traditional imaging and interventional modalities in the diagnosing and treating this rare condition.

eP112 THE FIRST EXPERIENCE OF INDIRECT PERORAL CHOLANGIO-PANCREATOSCOPY USING THE SPYGLASS DS SYSTEM (BSC) IN RUSSIA

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DOI 10.1055/s-0039-1681855

Aims To evaluate possibilities of diagnostic and therapeutic peroral cholangiopancreatocopy (POC).

Methods From December 6, 2017 to November 6, 2018, we performed 628 ERCP including 33 SpyGlass POCs in 31 patients: 30 cholangioscopies, 2 pancreaticoscopies and one cholangiopancreatoscopy for assessment of the spread of major papilla tumor. The indications for cholangioscopy were: undifferentiated strictures – 22, Mirizzi syndrome – 2, control of bile duct stones extraction – 1, laser lithotripsy for choledocholithiasis – 2, guidewire placement – 2, removal of CBD ligature – 1; for pancreaticoscopy – strictures in chronic pancreatitis suspicious of malignancy – 2.

Results The overall technical success of the intervention was 97.0% (32/33). Intraductal biopsy with Spy-bite forceps was successfully performed in 17/18 (94.4%) planned cases. Histological confirmation of cholangiocarcinoma was obtained in 6 patients, including one in a patient with primary sclerosing cholangitis. Other strictures were benign. Divergence of endoscopic and histological diagnoses observed in 2 cases. Sensitivity of Spyglass visual diagnosis compared to Spy-bite histology was 83.3%, specificity 90.9%. Therapeutic interventions were successfully performed in all 5 patients, among them two laser lithotries of large bile duct stones with complete clearance of bile ducts. Indirect POC changed tactics in 15 patients. In comorbid patient with acute biliary pancreatitis and obstructive jaundice due to undifferentiated CBD stricture+choledocholithiasis the progression of pancreonecrosis leading to his death 3 days after EPST+POC was noted; however not directly related to SpyGlass. Overall morbidity and mortality was 3.22%.

Conclusions The main indications for endoscopic peroral intraductal interventions are various types of undifferentiated and complicated strictures of the biliary tree and pancreatic ducts, as well as the “difficult” bile and pancreatic duct stones. Diagnostic and therapeutic endoscopic interventions using the SpyGlass is promising technology, relatively easy to learn for ERCP specialists, with a level of complications and mortality comparable to traditional transpapillary interventions.

eP113 ACUTE CHOLECYSTITIS IN HIGH RISK SURGERY PATIENTS. VALUE OF PERCUTANEOUS CHOLECYSTOSTOMY AND ERCP

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Aims Either percutaneous cholecystostomy (PC) and ERCP is recommended in patients with diagnosis of acute calculous cholecystitis (ACC) and high surgical risk. We aimed to compare the outcome of PC and/or ERCP in patient with ACC who are high-risk surgery candidates (HRSC).

Methods During January 2005–December 2017, we retrospectively reviewed patients with ACC who are HRSC and managed with ERCP and/or PC as a first line treatment.

Results We identified 71 cases, 22 treated with ERCP (31%), 47 (66.2%) with PC and 2 with PC+ERCP (2.81%) and a follow-up time of 5 years or until surgery. The average age was 74 years-old in ERCP group and 77 years-old in CP group. Anesthetic risk ASAIII or greater was observed in 13 patients (39.1%) in ERCP group and 43 patients (91.48%) in PC group. The rate of patients free of recurrence or need additional invasive procedures were discussed in table 1.

Tab. 1 Rate of patients free of recurrence or need additional invasive procedures.

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Free of recurrence</th>
<th>Recurrence</th>
<th>Biliary recurrences</th>
</tr>
</thead>
<tbody>
<tr>
<td>ERCP</td>
<td>41% (9 patients of 22)</td>
<td>59% (13 patients of 22)</td>
<td>3 (14%)</td>
</tr>
<tr>
<td>ERCP+PC</td>
<td>41% (9 patients of 22)</td>
<td>59% (13 patients of 22)</td>
<td>3 (14%)</td>
</tr>
</tbody>
</table>

Morbidity in ERCP group was 4.5% (1/22), due to delayed postpapillotomy bleeding, which was solved by endoscopy procedure later, and 2.1% (1/47) due to biliary peritonitis in PC group. In PC+ERCP group, there were not technical procedures complications, but a patient died because of biliary sepsis. PC and ERCP mortality was 1/71 (1.4%).

Finally, the morbidity and mortality of cholecystectomies were 3.8% (1/26) due to surgical site infection and death.

Conclusions Patients free of recurrence of biliary event were similar in both techniques (40–50%), 50% of not surgical patients who an ERCP were performed and 32% who a PC were performed, need a cholecystectomy afterwards.

eP114 THE ROLE OF ENDOSCOPIC RETROGRADE CHOLANGIO-PANCREATOSCOPY (ERCPI) IN THE MANAGEMENT OF BILIARY COMPLICATIONS ASSOCIATED WITH ORTHOTOPIC LIVER TRANSPLANTATION (OLT)

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Aims To describe the prevalence of different biliary complications after OLT, their endoscopic management and the results obtained.

Methods Retrospective single center analysis including all OLT performed from January 2008 to December 2017. We collected demographic, clinical and endoscopic variables. Clinical success was accepted in patients reaching analytical normalization and not presenting symptoms for at least 6 months without stents in situ.

Results A total of 395 patients underwent OLT with a median age of 57.2 years (IQR: 50.9–62.9), 311 (78.7%) men. ERCP was performed in 155 patients (39.2%) due to analytical/radiographic suspicion of biliary complications. In 8 (5.2%) it was normal, in 106 (26.8%) a diagnosis was reached and 41 (10.4%) presented multiple diagnoses. The most frequent diagnoses were: anastomotic biliary stricture (28.6%), bile leak (4.8%), ischemic stenosis (3.5%), lithiasis (3.3%) and secondary sclerosing cholangitis (3%). The first examination was performed 110 days after transplantation (IQR: 34–232), with 3 (IQR: 2–4) procedures/patient, and a first to last ERCP interval of 8.3 (IQR 2.1–16.4) weeks.
eP115 DIGITAL, SINGLE-OPERATOR CHOLANGIOPANCREATOSCOPY IN THE DIAGNOSIS AND MANAGEMENT OF PANCREATOBILIARY DISORDERS: RESULTS FROM A SINGLE TERTIARY CENTER

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Aims A new digital cholangioscopy (SPY DS) provides higher-resolution imaging of the pancreaticobiliary tract. The aims of our study were to assess:
1. diagnostic yield of SPY DS visual diagnosis and biopsies in patients with undetermined biliary strictures;
2. the efficacy of SPY DS directed treatment of difficult lithiasis and
3. safety of SPY DS.
Methods Retrospective analysis of prospectively collected data.
Results Since May 2015, a total of 59 patients underwent 66 SPY DS (65 cholangioscopies and 1 pancreatoscopy); among them 37 (56%) were performed with diagnostic intents (with biopsies in 29/33), and 29 (44%) in 21 patients with therapeutic intents (1x pancreatolithotripsy). The most frequent indication of SPY DS was undetermined stenosis (n = 33). Reliable views of a target lesion were obtained in all patients. The diagnostic accuracy for visual diagnosis of a malignant lesion reached 97% (CI 84.7–99.9). The mean number of biopsies obtained per patient was 3 (range 1 – 13) and the specimen was adequate for histopathological analysis in 93.1% of patients. The diagnostic accuracy of directed biopsies was 92.6% (75.7–99.1). Of 17 patients with difficult choledochocystic/hepatocystic lithiasis underwent laser lithotripsy, a complete clearance was achieved in one session in 12 and in two sessions in further 4 patients, respectively, and the overall success rate was 94%. In one patient, a recurrence of hepatocysticolithiasis occurred after 1 year. A total of 13 patients (19.6%) experienced an adverse event, cholangitis being the most frequent in 6 (9.1%), followed by mild to moderate pancreatitis in 5 (7.6%) patients.
Conclusions: 1. SPY DS provides a high diagnostic yield in patients with undetermined biliary stenosis;
2. SPY DS directed biopsies had a high diagnostic accuracy but do not always provide sufficient specimen;
3. SPY DS guided stone lithotripsy was effective in majority of patients and
4. The most frequent complication was cholangitis in 9% of patients.
stricture. Four patients thought to have malignancy by the visual diagnosis, but no malignancy was found in 10 patients who underwent SpyBite biopsy. Five patients underwent surgery: 2 malignant and 3 benign findings. Sixteen patients with difficult stones, with a mean size of 17 ± 2.4 mm, 43.7% with ≥ 2 stones with previous failed ERCPs of 2.2 ± 0.7 were treated with SpyGlass-guided holmium laser lithotripsy. Complete, incomplete and failed biliary and pancreatic stone clearance was achieved in 50% (8/16), 25% (4/16) and 25% (4/16) of the patients, respectively. Three out of 4 failed patients referred to surgery (Choledochoduodenostomy). Overall procedure-related complications 6.9% (2/29).

Conclusions SpyGlass is a useful tool for diagnosing indeterminate biliary strictures (especially visual) and treating difficult-to-remove biliary and pancreatic stones with an acceptable safety profile.

eP118 PERORAL CHOLANGIOPANCREATOGRAPHY USING A NEW VIDEOSCOPE (CHF-Y0012)

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Aims Peroral cholangioscopy (PCS) and pancreatecopy (PPS) using videoscope (CHF-BP260, CHF-B260, Olympus Co.) was performed since 2002 in our hospital. Endoscopic image is a good, however it is sometime easy to broken. We recently started to use a new videoscope (CHF-Y0012, Olympus Co. Tokyo). In this study, we evaluate with the endoscopic image for diagnosis of the biliary and pancreatic disorder.

Methods Since Jun. 2016, PCS and PPS using a new videoscope (CHF-Y0012) were performed in 49 cases (44 cases are the bile duct stenosis and 5 are intraductal papillary-mucinous neoplasm). The outer diameter of CHF-Y0012 is 3.3 mm. It has the scope bending function (up 70° and down 70°) and the channel diameter is 1.3 mm. It is inserted into the bile duct and the main pancreatic duct under fluoroscopic guidance. Physiological saline is continuing to inject during observation. Endoscopic photographs were taken using the EVIS-290 systems (Olympus Co.).

Results PCS and PPS using CHF-Y0012 were successful in all cases. One case of the malignant biliary stenosis (IBMN) could not observe the main lesion because of the intrahepatic stenosis. Endoscopic photographs obtained were clearly in all cases. This procedure was performed safely in all the cases without any complication.

Conclusions PCS and PPS using CHF-Y0012 are very useful for the diagnosis of the biliary and pancreatic disorder.

eP119 OPTIMAL TIMING OF ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY IN ELDERLY PATIENTS WITH ACUTE CHOLANGITIS

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Aims Acute cholangitis may deteriorate the patients condition due to sepsis, therefore antibiotic therapy and biliary decompression is mandatory. Endoscopic retrograde cholangiopancreatography (ERCP) is the first line procedure used for biliary drainage. Our aim was to define the clinical impact of ERCP timing in elderly patients with acute cholangitis.

Methods We retrospectively investigated patients >70 years with acute cholangitis between January 2016 and December 2017 at the Gastroenterology Department of the Timis Emergency County Hospital, Romania. Patients were divided in two groups according to their timing when the ERCP was performed – in the first 48 hours and beyond 48 hours. We assessed their severity according to the 2018 Tokyo Guideline criteria and we analyzed the outcomes of mortality and length of hospital stay (LOHS).

Results A total of 114 patients was included in this study with a mean age of 78.5 ± 11.5 years old. The female to male ratio was 1.48. Most patients had grade I (mild) severity of cholangitis – 51/114 (44.7%). Grade II (moderate) severity of cholangitis was met in 36/114 (31.6%) patients and grade III (severe) in 27/114 (23.7%) patients. Analyzing the timing of ERCP, 56/114 (49.1%) patients underwent the procedure in less than 48 hours and 58/114 (50.9%) patients had their ERCP done in more than 48 hours. Delayed ERCP and a higher grade of severity was correlated with a longer hospital stay, a mean LOHS of 7 days. Early ERCP and mild grade of severity had a mean LOHS of 4.7 days. We found no differences in mortality associated with the timing of the procedure.

Conclusions Elderly patients have a high incidence of sever cholangitis, therefore ERCP needs to be performed as soon as possible. Delaying the procedure was not associated with an increased mortality rate, but significantly influenced the length of hospital stay.

eP120 ENDOSCOPIC RESECTION OF ADVANCED AMPULLARY ADENOMAS: OUTCOMES OF A SINGLE-CENTER RETROSPECTIVE STUDY

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Aims Ampullary adenomas have a potential of malignant transformation, so complete removal is essential for curative therapy. Endoscopic resection should only be performed in patients without evidence of invasive cancer. This study aims to evaluate the outcome of endoscopic resection of ampullary adenomas in a tertiary endoscopy department.

Methods We investigated all patients referred for endoscopic ampullectomy between January 2014 – January 2017 at the Regional Institute of Gastroenterology and Hepatology Cluj-Napoca, Romania. All patients had a benign pathological result prior to the endoscopic resection. Post-procedural complications such as bleeding, perforation, cholangitis, pancreatitis and mortality were analyzed. Data about resection type, post resection histology and 1 year follow-up was also processed.

Results We included 19 patients with a mean age of 63.5 ± 17.7 years. The mean size of the tumor was 17.4 ± 7.8 mm and all patients had an endoscopic resection. The male to female ratio is 0.7. ‘En bloc’ resection was done in most cases 15/19 (78.9%), Bleeding occurred in 6 cases (31.6%) and two patients (10.5%) developed acute pancreatitis. The average days of hospitalization after endoscopic ampullectomy were 5.7 with a range from 2 to 25 days. Adenocarcinoma was described in the last histopathological result in 4/19 cases (21.1%). One year follow-up noted a recurrence rate of 15.8% (3/19 cases).

Conclusions In conclusion, endoscopic resection of ampullary adenomas is a high risk procedure with an increased risk of complications, but performed by experienced endoscopists in selected patients is safe and surgery can be avoided.
eP121 ASSOCIATED FACTORS WITH ABSENCE OF BILE DUCT STONE AT ENDOSCOPIC RETROGRADE CHOLANGIO-PANCREATOGRAPHY (ERCP) IN PATIENTS WITH CHOLEDOCHOLITHIASIS DOCUMENTED ON MAGNETIC RESONANCE CHOLANGIO-PANCREATOGRAPHY (MRCP)

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Aims Determine factors associated with absence of bile duct stone at ERCP in patients with choledocholithiasis documented on MRCP.

Methods A retrospective, cross-sectional, analytical study of patients with choledocholithiasis on MRCP undergoing ERCP from January 2016 to January 2018 at a referral endoscopy center. The clinical, biochemical, radiological and ERCP findings were analyzed.

Results Two hundred eighteen patients with choledocholithiasis documented on magnetic resonance MRCP undergoing ERCP were included. Most patients were female (66.5%) with a median age of 66.5 years (range 18 – 96). MRCP findings were as follows: mean bile stone size 7 mm. (range 2 – 20), mean bile duct diameter 11 mm (range 6 – 27), median number of stones at bile duct 1 (range 1 – 15). Mean bile duct size on MRCP and ERCP was 19 (range 1 – 173). Laboratory values before ERCP were: white blood cells 7.05 x 10⁹/mm³, total bilirubin 3.18 mg/dL, range 0.15 – 18.4, direct bilirubin 2.7 mg/dL, range 0.1 – 18, alkaline phosphatase 230 UI/L, range 34 – 923, GGT 405 UI/L (10 – 3020), AST 45 UI/L (range 10 – 827), ALT 45 (range 3 – 970).

At ERCP stone was found on 173 patients (79.4%). Patients without bile duct stone on ERCP had lower alkaline phosphatase levels (139 vs. 220 UI/L, p = 0.017), lower mean bile duct diameter on MRCP (11 vs. 12 mm, p = 0.009) and lower bile duct stone size on MRCP (6 vs. 9 mm, p = 0.002) than patients with bile duct stone at ERCP.

Predictors of bile duct absence at ERCP: bile duct diameter < 10 mm on MRCP (OR 0.31 95% CI 0.14 – 0.67), bile duct stone size < 6 mm on MRCP (OR 0.32 CI 95% 0.13 – 0.78) and a cut-off value of 129 UI/L alkaline phosphatase before ERCP (OR 0.40 95% CI 0.19 – 0.83).

Conclusions Normal phosphatase, common bile duct diameter < 10 mm and bile duct stone size < 6 mm on MRCP were predictive factors of stone absense at ERCP on patients with choledocholithiasis on MRCP.

eP122 PROPHYLACTIC EFFICACY OF 7-CM PANCREATIC STENT PLACEMENT FOR POST ENDOSCOPIC AMPULLECTOMY PANCREATITIS

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Aims Endoscopic ampullectomy is a minimally invasive therapy for duodenal ampullary adenoma. With advances in endoscopic devices and methods, it became a safe and efficacious therapeutic procedure that can avoid the need for open surgery. However, there are few reports on suitable pancreatic stents after endoscopic ampullectomy. The placed pancreatic duct stent becomes unstable because of Oddi sphincter removal, so it may be better to use a relatively longer and double flapped pancreatic stent. We evaluated the length of pancreatic stent for prevention of post ampullectomy pancreatitis (PAP) retrospectively.

Methods This retrospective study was conducted from 2013 to 2018. Patients with pathologically proven ampullary adenoma who underwent endoscopic ampullectomy were enrolled. Predictive factors of PAP were evaluated by univariate analysis.

Results We reviewed 40 consecutive patients who underwent endoscopic ampullectomy without chronic pancreatitis or IPMN. After endoscopic ampullectomy, either straight 5 Fr, 5 cm or shorter plastic stent (n = 18) or a 5 Fr 7 cm or longer plastic stent (n = 22) was placed to pancreatic duct. PAP occurred 9 patients (17.5%) in our cohort. An incidence of PAP in the patient with short pancreatic stent (n = 8, 44.4%) was significantly higher than those with long pancreatic stent (n = 1, 4.5%). Univariate analysis for post ampullectomy pancreatitis showed that a short stent placement was significant risk factor for PAP (Odds ratio 16.8, 95% CI 1.8 – 153.3, p < 0.001). The reason for only one patient who developed PAP after inserting a long stent was considered to be due to perforation and pancreatic fistula associated with the mucosal resection.

Conclusions 5Fr, 7 cm or longer pancreatic plastic stent should be used for prevention of pancreatitis after ampullectomy.

eP123 IMAGING CHARACTERISTICS RELATED TO DIFFICULTY OF CANNULATION IN ENDOSCOPIC RETROGRADE CHOLANGIO-PANCREATOGRAPHY

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Aims The aim of this study was to investigate the imaging characteristics and clinical factors related to difficulty of cannulation in endoscopic retrograde cholangio-pancreatoigraphy (ERCP).

Methods Data of imaging studies (CT or MR) and clinical findings of the patients underwent ERCP were retrospectively analyzed. Between January 2017 and August 2018, we compared the endoscopic result about cannulation time, success rate and use of rescue therapy such as pre-cut. Only patients undergoing first time ERCP were included in the study.

Results A total of 192 patients were included in the analysis. The overall cannulation success was 99.0% (190/192) and use of rescue therapy was 5.8% (11/190). Use of guide-wire assisted technique was 11.0% (21/190) and double-guide wire technique was 2.1% (4/190). The median time for all successful cannulations was 90 seconds (range 16 – 1308). Imaging characteristics associated with difficult cannulation were presence of large duodenal diverticulum in CT scan, acute angle of common bile duct-duodenal wall and prominent peri-ampullary mucosa. Major papilla located inside the diverticulum was considered as a significant factor for difficult selective cannulation. There was no significant factors (age, gender, body weight) related with cannulation time.

Conclusions Characteristic image findings can be useful in predicting the difficulty of cannulation before ERCP. More attention would be required to performing ERCP procedure in patients with risk factors.

eP124 ENDOSCOPIC MANAGEMENT OF OCCLUDED SELF-EXPANDABLE METAL STENTS USED FOR MALIGNANT STRICTURES OF THE BILE DUCT: RESULTS OF A SINGLE-CENTER RETROSPECTIVE STUDY

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Aims Endoscopic ampullectomy is a minimally invasive therapy for duodenal ampullary adenoma. With advances in endoscopic devices and methods, it become a safe and efficacious therapeutic procedure that can avoid the need for open surgery. However, there are few reports on suitable pancreatic stents after endoscopic ampullectomy. The placed pancreatic duct stent becomes unstable because of Oddi sphincter removal, so it may be better to use a relatively longer and double flapped pancreatic stent. We evaluated the length of pancreatic stent for prevention of post ampullectomy pancreatitis (PAP) retrospectively.

Methods This retrospective study was conducted from 2013 to 2018. Patients with pathologically proven ampullary adenoma who underwent endoscopic ampullectomy were enrolled. Predictive factors of PAP were evaluated by univariate analysis.

Results We reviewed 40 consecutive patients who underwent endoscopic ampullectomy without chronic pancreatitis or IPMN. After endoscopic ampullectomy, either straight 5 Fr, 5 cm or shorter plastic stent (n = 18) or a 5 Fr 7 cm or longer plastic stent (n = 22) was placed to pancreatic duct. PAP occurred 9 patients (17.5%) in our cohort. An incidence of PAP in the patient with short pancreatic stent (n = 8, 44.4%) was significantly higher than those with long pancreatic stent (n = 1, 4.5%). Univariate analysis for post ampullectomy pancreatitis showed that a short stent placement was significant risk factor for PAP (Odds ratio 16.8, 95% CI 1.8 – 153.3, p < 0.001). The reason for only one patient who developed PAP after inserting a long stent was considered to be due to perforation and pancreatic fistula associated with the mucosal resection.

Conclusions 5Fr, 7 cm or longer pancreatic plastic stent should be used for prevention of pancreatitis after ampullectomy.
Aims Self-expandable metal stents (SEMS) have become a mainstay of palliation for cholestasis in patients with malignant strictures of the bile duct, providing longer patency than plastic stents. There is, however, limited data regarding management of stent dysfunction in these patients, with current guidelines supporting use of both plastic and metal stents. We report our experience with management of SEMS dysfunction.

Methods We conducted a retrospective analysis of a prospectively updated database of ERCP procedures in a referral center for endoscopy. We identified all patients who had at least 1 SEMS implanted for a malignant stricture of the bile duct and cases with at least one more endoscopic intervention for stent dysfunction after SEMS implantation were included in the final analysis. Stent dysfunction was defined using a combination clinical, biochemical and imaging data, as per ESGE guidelines. Patient age, gender, diagnosis and bilirubin levels were retrieved, along with data regarding the initial procedure as well as the subsequent management of stent dysfunction.

Results One hundred seventeen consecutive patients treated by means of a SEMS for malignant biliary obstruction in our service between October 2016–October 2018 were identified and 18 patients (15.3%) with subsequent stent dysfunction were included in the final analysis. Pancreatic tumors were the most common indication for stenting (11/18). 16/18 patients had an uncovered SEMS initially implanted, with 5 patients having previous plastic stents. Median stent patency was 3 months (range 1–26 months). Stent dysfunction was successfully treated by the SEMS-in-SEMS technique in 13/18 cases (72.0%). Mechanical cleaning with a balloon in 3 cases and plastic stenting in 1 case.

Conclusions In our study, relatively few patients presented with stent dysfunction after SEMS implantation. Treatment was usually achieved by means of an additional metal stent; however, plastic stenting or mechanical cleaning were also successfully employed in some cases.

eP125 CHOLANGIOSCOPY AND PANCREATOSCOPY ARE SAFE AND ARE ASSOCIATED WITH HIGH CLINICAL IMPACT

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Aims Diagnosis and effective management of complex biliary and pancreatic duct abnormalities is challenging. We evaluate the utility of peroral cholangioscopy and pancreatoscopy with targeted biopsy in these patients.

Methods Procedures were done under deep sedation by an anesthesiologist. An Olympus TJF-Q180V-duodenoscope and a disposable SpyGlass cholangioscope (Boston Scientific) were used. The advancement of the cholangioscope was accomplished after standard biliary or pancreatic papillotomy with insertion of a guide wire to the target area under fluoroscopy. Prophylactic antibiotics were used for all patients. All patients were selected for cholangioscopy after standard diagnostic and therapeutic techniques failed. All procedures were performed by highly skilled and experienced endoscopists.

Results Since January 2016, 22 procedures (19 cholangioscopies and 3 pancreatoscopies) were done on 21 patients (9 Females). Median age was 65.8 (range 31 – 86). The diagnostic findings (non-exclusive) were: biliary lithiasis in twelve patients, pancreatic lithiasis in 2, benign biliary strictures in 6, PSC with cholangiocarcinoma, malignant CBD polyp, IPMN and Intraductal papillary neoplasm, each in one patient. Stone extraction was performed in eleven patients. Five and one patients respectively underwent complete or partial laser lithotripsy and stone removal from the bile ducts and pancreatic duct. One patient underwent a polypectomy from the distal CBD. Eight biopsies were taken from the CBD and one from the PD. Malignancy and high grade dysplasia was confirmed in two cases and was ruled out in one. The mean duration was 65 (range 50 – 90) minutes. All patients recovered fully and no severe adverse events were seen.

Conclusions Cholangioscopy and pancreatoscopy is safe, was associated with high procedural success and may have clinical impact on the management of highly selected, complex cases.

eP126 EVALUATION OF PREDICTORS FACTORS OF FAILURE IN ENDOSCOPIC BILIARY DRAINAGE IN MALIGNANT HILAR BILIARY STRICTURE

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Aims To evaluate the clinical success of biliary drainage by ERCP in patients with primary or secondary malignant hilar biliary stenosis and to analyze the predictors factors of failure.

Methods This is a retrospective, observational study, in a tertiary oncologic center in Brazil. We included all the patients with malignant hilar biliary stricture (Bismuth ≥ II) submitted to a biliary drainage by ERCP, between January 2010 and December 2017. Clinical success was defined as a decrease in the direct bilirubin level to ≤ 50% of the pretreatment value within 2 weeks.

Results 82 patients were included. Bismuth classification grades II, IIIA, IIIB, and IV were noted in 23.2%, 15.9%, 14.6% and 46.3%, respectively. The indication of ERCP was palliative drainage in 56.1%, cholangitis in 29.3% and in previous stent obstruction in 13.4%. About 39% of the patients had a previous stent; 35.4% had plastic stent and 3.7% had metallic stent. The mean direct bilirubin was 8.2 mg/dL. In 7.3% stent placement technically failed. In 20.7% one hepatic lobe was drainage, in 64.6% more than one lobe was drainage and in 7.3 the stent was placed distal to the confluence of the biliary hepatic branch. The clinical success rate was 53.7%.

The strictures Bismuth IV were related with lower clinical success rate when compared with others strictures (Table 1).

Tab. 1 Predictors of clinical failure for biliary stents

<table>
<thead>
<tr>
<th>Model and variable</th>
<th>B (SE)</th>
<th>Hazard ratio (95% CI)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biliary strictures Bismuth IV</td>
<td>1.65 (0.71)</td>
<td>5.18 (1.28–20.88)</td>
<td>0.027</td>
</tr>
<tr>
<td>Lobes ≥ 1 lobe</td>
<td>0.84 (0.67)</td>
<td>2.31 (0.62–8.59)</td>
<td>0.213</td>
</tr>
<tr>
<td>Cholangitis Presence</td>
<td>1.42 (0.83)</td>
<td>4.15 (0.78–22.04)</td>
<td>0.099</td>
</tr>
<tr>
<td>Bilirubin levels</td>
<td>0.07 (0.04)</td>
<td>1.07 (0.99–11.15)</td>
<td>0.052</td>
</tr>
</tbody>
</table>

Conclusions Endoscopic biliary drainage for malignant hilar biliary stenosis still has limited clinical success rate. The proximal strictures (Bismuth IV) are associated with lower clinical success rate.

eP127 PLACE OF ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY IN THE MANAGEMENT OF ECHINOCOCCAL CYSTS COMMUNICATING WITH BILE DUCTS: A SINGLE CENTER EXPERIENCE

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Aims The aim of our study is to specify the efficacy of ERCP in the management of hydatid cysts communicating with bile ducts.

Methods This is a retrospective study, conducted from January 2002 to September 2018 in the gastroenterology II department of the military teaching hospital of Rabat, including all patients followed for a liver hydatid cyst communicating with bile ducts. ERCP and endoscopic biliary sphincterotomy were performed before surgery in 20 patients, and in postoperative for 22 patients.

Results Among ERCP performed in our department in the period of the study, 2,4% (n = 42) was for a liver hydatid cyst communicating with bile ducts.
The mean age was 47 years old, with a higher prevalence in male (65%). The persistent external biliary fistula in postoperative were complicating the hydatid cyst communicating with bile ducts in 34%. All our patients underwent an endoscopic biliary sphincterotomy allowing the clearing of the bile duct from hydatid material using balloon or dormia basket. The follow up was marked by the disappearance of jaundice in 5 to 12 days on average after ERCP and resolve of the biliar fistula in 10 to 12 days. The global success which was defined by the definitive clearance of the common bile duct was obtained in 100% of our patients.

Conclusions Our study confirm the efficacy and safety of ERCP and biliary endoscopic sphincterotomy in the management of echinococcal cysts communicating with bile ducts. It leads to decrease duration of hospital stay and to avoid a heavy surgery.

**eP128V** BALLOON SPHINCTEROPLASTY IS A SAFE AND RELIABLE METHOD TO ACHIEVE BILIARY CLEARANCE IN AN AT RISK CHOLEDOCOLITHIASIS COHORT

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**DOI** 10.1055/s-0039-1681871

**Introduction** Endoscopic balloon sphincteroplasty (EBP) has been recommended by ESGE as an alternative to Endoscopic Sphincterotomy (ES) in patients with coagulopathy or alternate anatomy.

**Aim** To investigate the effectiveness of EBP versus ES in managing selected patients with choledocholithiasis at Ttuh.

**Method** Over one year, patients with untreated coagulopathy or abnormal anatomy, with choledocholithiasis were recruited. Indication, demographics, diagnosis, duct clearance rates, sedation and complications were recorded. EBP was performed with an 8 mm Hurricane Biliary Balloon for ≥4 minutes under direct and fluoroscopic control, with subsequent stone extraction using standard techniques. Outcomes were compared to age and sex matched ES choledocholithiasis patients.

**Results** Of 577 ERCP’s, 19 EBPs were performed and compared to 57 matched ES cases. Mean age 62 (21 – 91), 29 (38%) males. Indications: gall-stone pancreatitis 4 (5%), choledochoolithiasis alone 72 (95%). Findings: Confirmed choledochoolithiasis, 15/19 (79%) and 42/57 (74%), normal balloon trawl, 3/19 (16%) and 15/57 (26%) in EBP and ES groups respectively and 1/19 (5%) EPB stricture. While failure of duct clearance was less common in EBP patients (OR 0.65), the difference was not significant; 87% (13/15) EBP vs. 81% (34/42) ES, p = 0.47. Despite EBP patients being coagulopathic, ES intra-procedural bleeding rates were higher (OR 3.3), again non-significant; EBP 1/19 (5%) vs. ES 9/57 (16%), p = 0.4. There were no significant post-procedure complications; procedure duration and mean sedation were comparable.

**Conclusion** EBP was not inferior to ES in selected patients with choledocholithiasis. A low bleeding rate despite coagulopathy, with effective duct clearance suggests EBP warrants further investigation.

**eP130V** TWO CASES OF DELAYED REMOVAL OF MIGRATED PANCREATIC STENT SOLVED WITH THE SAME TECHNIQUE – FOREIGN-BODY FORCEPS

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**DOI** 10.1055/s-0039-1681873

Pancreatic stenting has been increasingly used for a variety of pancreatic conditions during therapeutic endoscopic retrograde cholangiopancreatography (ERCP). Proximal migration of pancreatic stents is an infrequent complication of pancreatic stenting and its management is difficult to tackle despite the several different methods described.

We present two well-documented cases of delayed removal of proximal migrated pancreatic stents, which were previously placed to prevent post-ERCP pancreatitis. In both cases the main pancreatic duct was not dilated and the pancreatic stent migrated beyond the pancreas genu. A variety of devices were tried, however only the foreign-body forceps was successful. Round cup forceps was used as it may be less traumatic. Despite the manipulation of pancreatic duct (PD), there were no procedure-related complications. The use of foreign-body forceps for endoscopic retrieval of migrated PD stents seems safe, effective and simple to use. We prefer a round-cup rather than tooth-rat forceps. To our knowledge, this is the first time that the use of round-cup forceps for PD stent removal has been reported. The removal strategy will always have to be tailored to each patient condition, but we consider that foreign-body forceps might be a good first approach, especially when the PD is not dilated.
eP131  ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY IN THE MANAGEMENT OF BILIARY COMPLICATIONS AFTER ORTHOTOPIC LIVER TRANSPLANTATION

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Aims  Biliary complications are frequent after orthotopic liver transplantation. Management of these complications with endoscopic retrograde cholangiopancreatography (ERCP) is available. The aim of the present study was to analyze the experience in the endoscopic management of biliary complications after liver transplantation in a third level center, and to determine the factors associated with higher rates of technical and clinical success.

Methods  Observational retrospective study including ERCPs performed in patients with biliary complications after liver transplantation between February 2012 and January 2017. Factors analyzed were: demographics, time between transplantation and ERCP, indications for ERCP, strategy of stenting (only plastic stents, only self-expandable metallic stents, plastic followed by metallic stents, and metallic followed by plastic stents), technical and clinical success, and complications.

Results  One hundred and sixty-eight endoscopies were performed in 58 patients. Thirty-three patients (56.9%) presented with early complications. The most frequent indication for ERCP was anastomosis stenosis (57.8%). Technical success in the first ERCP was achieved in 43 patients (74.1%). Early onset of the biliary complications was associated with higher rates of technical success (OR: 6.49; p: 0.036). Clinical success was obtained in 36 cases (62.1%). Patients with early complications presented higher probability of having good clinical response (OR: 11.16; p: 0.033). Results were worse in patients receiving only plastic stents (50% of clinical success). Eleven complications were observed among 168 ERCPs (6.54%), including 2 pancreatitis, 5 bleeding events, 3 cholangitis and 1 micro-perforation.

Conclusions  ERCP is safe and useful in the management of biliary complications after liver transplantation. Early onset of the complications is associated with better results. Some patients will need repeated procedures to obtain a good clinical response.

eP132V  ENDOLUMINAL RADIOFREQUENCY ABLATION WITH SPYGLASS IN THE MANAGEMENT OF CHOLANGIOCARCINOMA

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Male patient of 38 years. Medical history: ambulatory clinical follow-up due to cryptogenic liver cirrhosis. Admitted in April 2018 for spontaneous bacterial peritonitis (SBP). During abdominal MRI admission, a lesion was reported in the hepatic hilum with hilar adenopathies compatible with cholangiocarcinoma. Due to marked portal hypertension and poor clinical improvement, a TIPS was placed 2 months after admission without clinical changes. On July 18, ERCP with SpyGlass was applied, biliary stents placement with biliary biopsy of suspicious lesion was taken. We took only one sample due easy bleeding. Pathology report: suspicious but not conclusive with cholangiocarcinoma. After that, the patient presented remarkable clinical improvement. PET-CT was performed to confirm malignant diagnosis, reporting hilar cholangiocarcinoma with tumor viability signs, with intrahepatic bile ducts dilation. Sepsis concurrent SBP and antibiotic therapy was initiated with multiple antibiotic schemes by multiresistant bacteria for 2 months. Endocarditis and other endovascular infections were ruled out. Four months after admission, oncology committee requested to repeat biliary biopsies and get adenopathies biopsy. Endoscopic ultrasound with FNA in August 2018 confirmed metastatic lymphadenopathies. In September 2018, second ERCP with SpyGlass system was performed; Endoscopic biopsy by SpyBite confirmed cholangiocarcinoma. With these findings, the patient did not meet Mayo Clinic criteria for curative resection, so endoluminal radiofrequency with Spyglass was offered as palliative treatment. An 18 mm temperature-controlled radiofrequency (RFA) catheter (ELRA STARmed, Korea) through duodenoscope working channel into the papilla of Vater was inserted. RFA was applied at 10 watts for a time period of 2 minutes under 80°C of intraductal temperature. A temperature sensor inside the electrode provided accurate temperature measurements. The power and impedance settings were automatically made from the VIVA generator (STARmed Korea). After the procedure, patient presented mild self-limited abdominal pain for 12 hours, with no other complications 15 days after the procedure.

eP133V  PERCUTANEOUS ENDOSCOPIC ASSISTED HEPATIC ABDOMINAL ABSCESS DRAINAGE

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Duodeno-pancreatic resection is the preferred operative approach in malignant mass lesions of the pancreatic head. One serious long-term complication of the procedure is benign or malignant stenosis of the biliobiliary anastomosis and associated cholangitis. We present the case of 64-year-old female operated for adenocarcinoma of the pancreatic head. A Whipple procedure was done followed by postoperative chemotherapy. Unfortunately, a year later there was a progression of the disease with mass lesion in the liver hilum and concomitant stenosis of the hepaticojugal anastomosis. A self-expandable metal stent was placed to relieve the obstructive jaundice and a new cycle of chemotherapy was initiated. Six months later the patient presented in the emergency unit with fever and elevated levels CRP and leukocytes. Upon further ultrasound examination an abscess cavity with solid debris and liquid content was observed in the right liver lobe. The patient was not suitable candidate for surgery and a 10fr drainage catheter was placed percutaneously. However, after few days of continuous lavage with saline and intravenous antibiotics, there were no significant improvement in patient condition. After multidisciplinary team meeting a decision was made to clear the debris with a gastroscope inserted through a previously, percutaneously placed self-expandable metal stent. Under ultrasound and fluoroscopy guidance a guidewire was placed in the cavity followed by metal stent insertion. That made possible direct communication between abscess cavity and skin. The lumen of the stent was dilated to 12 mm to facilitate scope passage. The abscess cavity was revealed with a gastroscope and the solid debris were cleared. After the procedure the patient condition improved, and she was discharged from the hospital a few days later.

In our case this innovative technique helped in improving patient condition. It is applicable in selected cases in a tertiary centers with a prepared multidisciplinary team.
**Aims** Biliary complications are common in liver transplant recipients with incidence as high as 32%. The most common complications are biliary strictures and biliary leak. ERCP is a primary treatment modality in those patients; clinical success depends on the type of complication. The aim of our study was to assess frequency and outcome of biliary complications in a single, large volume transplant centre.

**Methods** We retrospectively reviewed medical records of all adult patients who underwent orthotopic liver transplantation (OLT) between January 2005 and November 2016. We analysed all cases of biliary complications and evaluated outcome of endoscopic treatment. We compared survival rate and retransplantation rate of patients with and without biliary complications.

**Results** In selected period 1037 patients underwent OLT, 248 (23.9%) of them were diagnosed with biliary complication; 142 patients had biliary stenosis (57.2%), biliary leak occurred in 85 patients (34.2%), the remaining 21 patients had other complication (8.6%). A total of 811 ERCPs were performed in 199 patients. Endoscopic treatment led to resolution of biliary complication in 162 cases (81.8%); the average number of procedures required for clinical success was four. Treatment success differed significantly in the group of patients with biliary stenosis and leak (92% vs. 42%; p = 0.001). There was a statistically significant difference in survival and retransplantation rates between patients who had biliary complication compared to a control group (24% vs. 13.9%; p = 0.004, respectively 11.6% vs. 3.9%; p = 0.001).

**Conclusions** Biliary complications after liver transplantation have significant impact on patients and liver-graft survival. Endoscopic therapy was effective in treatment of biliary strictures, the success rate in biliary leak was unsatisfactory.

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**eP135 BILARY OBSTRUCTION AFTER TIPS PLACEMENT IN A LIVER TRANSPLANT PATIENT**

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**DOI** 10.1055/s-0039-1681878

**Aims** Transjugular intrahepatic portosystemic shunt (TIPS) is a method conventionally used in portal hypertension treatment. Refractory ascites and bleeding from esophageal varices are the most common indications. Complications frequently observed include bleeding and development of liver encephalopathy, those affecting the biliary tree as bilioporal fistula and biliary stenosis are much less common. Placement of TIPS in a liver transplant patient is rare and implicates a technically challenging procedure.

**Methods** None.

**Results** A forty year old male patient diagnosed with alcoholic cirrhosis underwent whole liver transplantation. Postoperatively, no major complications were observed and the patient was discharged early. He was admitted to our clinic with ascites and fluidoethorax approximately two months later. The portosystemic gradient was 28 mm Hg and gastroesophageal varices were found on gastroscopy. Liver biopsy showed microvascular damage corresponding with the diagnosis of sinusoidal obstruction syndrome (SOS). Placement of TIPS resulted in regression of ascites and fluidoethorax. However, an apparent rise in cholestatic enzymes level occurred and MRCP showed dilatation of the dorsal right-lobe bile ducts with parenchyma abscesses. ERCP discovered a tight stenosis of the right posterior duct caused by external impression by the previously implanted stentgraft. An attempt of bridging the stricture endoscopically with a stent was unsuccessful. Therefore, a percutaneous transhepatic external-internal drainage drain was inserted resulting in resolution of cholestasis and liver abscesses.

**Conclusions** Our case report describes biliary stenosis, a rare complication of TIPS placement, which was successfully treated by percutaneous transhepatic drainage. It is the first complication of this type ever described in a liver transplant patient.

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**eP136 SCREENING FOR HEAD AND NECK SECOND PRIMARY TUMORS IN PATIENTS WITH ESOPHAGEAL SQUAMOUS CELL CANCER: A SYSTEMATIC REVIEW AND META-ANALYSIS**

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**Aims** Esophageal squamous cell carcinoma (ESCC) is often accompanied by second primary tumors in the head and neck region. Patients with an additional head and neck second primary tumor (HNSPT) have a worse prognosis than those with only ESCC. Therefore, early detection of HNSPTs may improve the overall outcome of esophageal cancer patients. The aim of this study was to review the literature to investigate the yield of endoscopic head and neck screening to detect HNSPTs in patients with ESCC. Secondary aims were to investigate whether screening should be performed synchronously or metachronously, and to investigate whether there is enough evidence to justify endoscopic screening in the Western world.

**Methods** A systematic literature search was conducted until January 2018 to retrieve studies from Embase, MEDLINE, Web of Science, Cochrane Central and Google Scholar. Studies in which ESCC patients were endoscopically screened for the detection of HNSPTs were included. MINORS- and relevance-criteria were used to assess the study quality. The primary outcome was the pooled prevalence of HNSPTs.

**Results** Eight studies were included in this systematic review and meta-analysis with a total of 4295 patients; all studies were performed in Japan. The pooled prevalence of HNSPTs was 5.4% (95% confidence interval (CI) 3.6–8.1). The overall heterogeneity (I² = 88%, p < 0.0001) was high across the studies. Most SPTs were located in the hypopharynx (59%), classified as low-stage (85%), and detected metachronously (69%).

**Conclusions** Based on our results, the pooled prevalence of HNSPTs was 5.4% (95% CI 3.6–8.1). The majority of HNSPTs were classified as low-stage, which can be treated curatively and have an excellent prognosis. Therefore, (metachronous) endoscopic screening could be considered in patients with ESCC. Since all studies were performed in Japan, it is not clear if this consideration applies to the Western world.

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**eP137 FACTORS INFLUENCING THE LONG TERM OUTCOME OF CAUSTIC ESOPHAGEAL STRICURE DILATATION USING SAVARY DILATORS**

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**DOI** 10.1055/s-0039-1681880

**Aims** Less is known in the literature about the management and long-term outcome of Caustic esophageal stricture (CES). It is reported from developing
countries particularly in pediatric and adolescent age group. The study is aimed to assess the long-term outcome of CES dilatation using Savary Gilliard dilator and also the factors associated with better outcome.

Methods We retrospectively reviewed the medical record of patients who underwent CES dilatation using Savary Gilliard dilators from July 2008 to July 2018. Rule of three was used for the esophageal stricture dilatation. Data is expressed in frequency, percentage, mean and standard deviation. Mann-whitney U test is used to determine the factors associated with better outcome.

Results Twenty one patients were included in study, mean age of patients was 21 ± 19.4. Out of twenty one 12 (57.1%) were males. More than half of them were in pediatric age group 11 (52.4%). Acid ingestion was seen in 14 (66.7%) while 7 (33.3%) patient had alkali ingestion. Accidental corrosive intake was found in 16 (76.2%), however 5 (23.8%) patients had taken it with suicidal intent. Most of patient had zargar’s class IIA 12 (57.1%) injury. Mean length of stricture was 7.3 ± 4.5 cm and range of number of dilatation required was 4 to 59 sessions. Over all pediatric patients required less number of session as compare to adults (p value = 0.008). Four patients had complex stricture. Complete resolution of stricture was noted in 18 (85.7%) patients while 3 (14.5%) patients with complex stricture still require dilations. Six patients had associated pyloric stenosis, managed via CRE balloon dilatation and while two required gastrojuejeno-omy. One patients developed minor perforation during the procedure.

Conclusions CES can be successfully managed via savary dilatations, long and complicated stricture required more sessions of dilatations while pediatric patients are better responders to treatment.

eP139 SELF-EXPANDABLE METALLIC STENTS (SEMS) IN ESOPHAGEAL VARICES POST BAND ULCER REFRACTORY BLEEDING, A RETROSPECTIVE STUDY

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Aims Evaluate efficacy of SEMS in control of variceal post band ulcer bleeding and 42 days survival outcome.

Methods A retrospective study conducted on 28 patients (at Hepatology and gastroenterology department) National Liver Institute, Menoufia university, Egypt whom received SEMS as a management of their refractory bleeding from post variceal band ligation ulcer. Patients followed up for 42 days.

Results Patients age (mean ± SD) (57.8 ± 8.6) years and 24 were males. Their child class (A/B/C) 3/15/10 respectively with 5 patients had early stage HCC. Admission prognostic scores were MELD (15.7 ± 6.3) MELD Na (20 ± 6.4) ALBI score (-1.36 ± 0.58) and CLIF-C AD (57.96 ± 10.21) (mean ± SD). Their hospital stay range were (1 ± 33) days.

As regard control of bleeding, 3 patients had uncontrolled bleeding and 2 patients experienced re-bleeding after initial control and well control of bleeding achieved in 23 (82.1%) patients.7 (25%) patients died. (4 from bleeding, 1 from multiple organ failure MOF & 2 from sepisis), 6 (21.4%) stents were ing achieved in 23 (82.1%) patients. 7 (25%) patients died. (4 from bleeding, 1 from multiple organ failure MOF & 2 from sepisis). 6 (21.4%) stents were ing achieved in 23 (82.1%) patients. 7 (25%) patients died. (4 from bleeding, 1 from multiple organ failure MOF & 2 from sepisis).

Conclusions SEMS is a promising maneuver to control post band ulcer bleeding but individualized approach in respect of type of the ulcer is advised for better survival outcomes.

eP140 NBI GUIDED CRUSH CYTOLOGY COMPARED TO HISTOPATHOLOGY – EARLY DIAGNOSIS & FASTER TREMENT INITIATION

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Aims To Prove the Utility of Crush Cytology as compared to standard histopathology.

Methods Crush cytology for gastrointestinal (GI) lesions is not studied much. We studied utility of crush cytology in diagnosis of GI lesions compared to conventional histopathology. 94 suspected cases of malignancy of esophagus, stomach, ampulla and colorectum, undergoing endoscopy from August 2018 to November 2018 were included in the study. For any tumor, an area was targeted for biopsy using NBI criteria, first 2 biopsies taken on a slide, crush smears made, stained with H&E and studied. then Correlation done with conventional histopathology from remaining biopsies. Diagnostic values, accuracy, sensitivity, specificity, and positive and negative predictive values calculated.

Results There were 72 cases of histologically confirmed carcinomas and 65 cases were positive for carcinoma by crush smear cytology. Thus, the diagnostic performance of crush cytology and histopathology was 90.3% vs. 100%; p>0.05 which revealed no significant difference between two tests. Male/ female ratio of 2.6:1 and mean age of 60.3 years:Incidence of carcinomas was highest in seventh decade, with 36.6% cases. Most common site was colorectal (52.4%) followed by esophagus (22.9%), stomach (17.1%), ampulla (4.3%) and GE junction with 2.8% cases each. Most common histologic types of colorectal and gastric malignancy were well-differentiated adenocarcinoma (83.8% & 69.2%) and poorly differentiated adenocarcinoma (2.7% & 30.8%), respectively. Squamous cell carcinoma (18.8%) was the most common malignancy of esophagus. Crush smears were not conclusive in 7 cases in which they revealed high grade dysplasia and final biopsy was malignant, Sensitivity of crush cytology was 79.5%, specificity 85.5%, PPV 90.3%, and NPV of 19.8%. Diagnostic accuracy 82.5%.

Conclusions Crush cytology is Easy and rapidly performed technique. The diagnostic yield is very high. It is comparable to histopathology. Final pathological certain in > 90%. Treatment/surgery can be initiated faster without awaiting HPE report.

eP141 EARLY DIAGNOSIS IS ASSOCIATED WITH IMPROVED CLINICAL OUTCOME IN BENIGN ESOPHAGEAL PERFORATIONS: AN INDIVIDUAL PATIENT DATA META-ANALYSIS

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Aims Benign esophageal perforations (BEP) are subdivided in two groups; 1. spontaneous esophageal perforations, also known as Boerhaave’s syndrome, and 2. iatrogenic esophageal perforations.

Timing between onset and diagnosis of BEP is regarded as an important risk factor for poor outcome. However, no strong evidence exists to support this finding. We investigated whether timing between onset and diagnosis is associated with clinical outcome of patients with BEP.
Methods A systematic review (PROSPERO: CRD42018093473) was performed following PRISMA guidelines. Clinical studies of patients treated for BEP were identified from Medline, Embase and Cochrane databases. After study inclusion, corresponding authors were invited to share individual patient data (IPD) and a meta-analysis was performed. Patients were subdivided in two groups; (1) early diagnosis (≤24hours); and (2) late diagnosis (>24hours), after symptom onset. We used multi-level mixed model logistic regression analysis to compare both groups while correcting for age, gender, ethnicity, esophageal length and initial treatment strategy. Outcome included mortality, intensive care unit (ICU) admittance and re-interventions.

Results The systematic search yielded 146 studies eligible for inclusion. If possible, we invited corresponding authors of included studies (n = 115) to share IPD. In total, 25 authors (22%) responded and shared IPD. Out of 960 patients, 672 patients (iatrogenic n = 411, spontaneous n = 261) were included in the IPD meta-analysis. After multivariable logistic regression analysis, late diagnosis (>24h) was associated with 6% increase in mortality (95% CI 1.20 - 4.10, OR 2.2, p = 0.01), 17% increase in ICU admittance (95% CI 1.21 - 3.34, OR 2.0, p = 0.007), and 19% increase in need for re-intervention (95% CI 1.48 - 3.35, OR 2.2, p < 0.001), when compared with early diagnosis (≤24h) of BEP.

Conclusions This real-world IPD meta-analysis shows that late (>24h) diagnosis is associated with higher mortality, ICU admittance and re-intervention rates, when compared with early (≤24h) diagnosed patients with BEP. This association confirms results from previously published small cohort studies and expert opinion.

eP143 DIAGNOSIS OF BARRETT’S ESOPHAGUS IN UNIVERSITY HOSPITAL CENTRE ZAGREB BETWEEN 2012 AND 2017

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Aims To evaluate basic epidemiology situation and demographic data of patients diagnosed with Barrett’s esophagus in University Hospital Centre Zagreb between January 2012 and December 2017.
Methods In a 6 year period, upper GI endoscopy was obtained in 19,950 patients. We have analysed our endoscopy data base and hospital data system regarding pathohistological diagnosis and demographic data of patients diagnosed with Barrett’s esophagus as well.
Results Endoscopy suspicion of esophageal metaplasia (ESEM) was set in 592 patients. Pathohistological confirmation of Barrett’s esophagus was established in 163 patients (8.8%). Intestinal metaplasia without dysplasia was diagnosed in 137 patients, confirmed low grade dysplasia in 20 patients, high grade dysplasia in three and early cancer in Barrett esophagus in three patients.
In the group of 163 patients with confirmed Barrett’s esophagus 116 (71%) were male and 47 (29%) were female with median age of 58 years. Hiatal hernia was observed during endoscopy in 92 patients (56%). Patients with high grade dysplasia and early cancer have been treated with bandEMR and then radio frequency ablation (RFA), and all the patients with confirmed low grade dysplasia have been treated with RFA.
Conclusions Barrett’s esophagus still has a low incidence in Croatia, even in a high volume tertiary referral Centre.

eP144 DIAGNOSIS AND TREATMENT OF PATIENTS SUFFERING FROM AUTOIMMUNE DISEASES OF THE ESOPHAGUS, COMPLICATED BY BENIGN STRicture

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Aims Identification of the clinical features, diagnosis and treatment of 4 nosological units: mucous membrane pemphigoid (MMP), lichen planus (LP), eosinophilic esophagitis (EoE) and Crohn’s disease (CD).
Methods From 2003 to 2017, 57 patients with esophageal strictures caused by autoimmune diseases were treated. EoE – 24 cases (42%), LP – 15 (26%), CD – 10 (18%), and RP – 8 (14%) patients. An Rg-contrast study revealed that in most cases MMP and LP were complicated by the stricture of the proximal esophagus, EoE and CD were complicated by the strictures of the distal esophagus, and in 7 patients with EoE the esophagus was narrowed throughout. Patients with MMP, LP and CD had multiple erosions and superficial ulcers of the esophagus, unlike them in EoE. Autoimmune genesis of stricture development was morphologically confirmed in 100% of cases. The method of choice is a combination of endoscopic treatment and specific treatment. Each dilation session provokes the main disease, and forced bougienage can lead to complications, so endoscopic manual should be performed in stages, in a “gentle” mode.
Results On the 14th day after dilation, all patients reported an improvement in the condition – the result of treatment in all 57 patients (100%) was

Conclusions Our study demonstrated high effectiveness and safety of Hybrid-APC for treatment of dysplastic BE. 3-year follow-up didn’t reveal any recurrence, buried metaplasia or any major complications. Since Hybrid-APC is an operator dependent technique our data emphasizes the importance of a proper training to provide reliable long-term outcomes.
good. A year later, 48 (84%) patients were under observation, 12 of them (25%) were compensated, and no data for recurrent stricture were obtained. In 28 (58%) patients with dysphagia of 2–3 points, X-rays showed that they had a recurrent stricture, which required repeated complex treatment. After 3 years 39 (68%) patients were inspected. A satisfactory result was in 9 (23%) patients; a recurrence of stricture was detected in 30 (77%) patients.

**Conclusions** The main minimally invasive method of treatment is endoscopic bougienage, which should be carried out in stages, in a “gentle” mode, and certainly with the specific treatment to autoimmune diseases.

**eP145 RISK FACTORS FOR PREDICTING EARLY VARICEAL REBLEEDING AFTER ENDOSCOPIC VARICEAL LIGATION (EVL)**

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**Aims** The aim of this study is to determine the factors predicting the occurrence of post LVO bleeding and its mortality.

**Methods** Between April 2010 and April 2018, 587 LVOs were performed in the gastroenterology endoscopy unit in 393 patients with cirrhotic portal hypertension. Early rebleeding following EVL is mainly due to early spontaneous slippage of rubber bands leaving the unhealed ulcer.

**Results** The complication occurred in 32 patients (8.1%) whose mean age was 49.9, twenty-five patients were admitted through emergency departments for gastrointestinal bleeding while 21.2% were under secondary prevention protocol by ligation. This EGD was performed by a junior doctor at 21 patients with the establishment on average 4.7 rings [2.9]. All our patients received octreotide for an average of 3.8 days, whereas none of them was put under PPIs after the realization of this 1st EGD. The pressure bleeding occurred within an average delay of 7.4 days. It induced haemodynamic instability in 8 patients (25%) requiring transfusion in 78% of patients. univariate analysis, the risk factors for the occurrence of this hemorrhagic event were: ligation in the setting (p = 0.004), the presence of ascites (p = 0.001), the hepatic encephalopathy (p = 0.001), the platelet count < 70 000 (p = 0.04), the presence of a portal hypertensive gastropathy (p = 0.001), an advanced child Pugh score (p = 0.0034) and the achievement of the EGD by a junior (p = 0.004). The multi-varied analysis concluded that only a low platelet count is statistically associated with the occurrence of fall of eschar. Mortality was 31.2% (n = 10) following this complication.

**Conclusions** Early rebleeding following EVL in cirrhotic patients is a serious complication, especially in cases of emergency recruitment. The occurrence of this complication was statistically linked to low platelet count and a high mortality rate.

**eP146 ENDOSCOPY IN PREVENTION AND TREATMENT OF ESOPHAGEAL AND GASTRIC VARICEL BLEEDINGS**

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**Aims** Estimate and improve methods of treatment of the patients with esophageal and gastric varices, control of portal bleedings using the method of endoscopic varices ligation (EVL) in esophagus and stomach and the role and limitations of placing of Danish stent.

**Methods** We applied plastic ligatures and ligating device in esophagus and stomach. We applied rubber-band ligators only in esophagus. We placed Danish stent in cases of severe portal bleeding and when we had to postpone emergency EVL because of severe erosive esophagitis combined with bleeding.

**Results** We perform EVL since 1998 year. We analized 325 EVL to 216 patients with the portal hypertension and large esophageal and gastric varices (Baveno VI). We ligated varices in subcardia and gastric fundus with plastic ligatures in 34% of cases with 86% of efficandy. We never used rubber-band ligators for it. Complications after EVL: cutting of ligated varices in stomach – 2 (1.8%).

We placed Danish stent in 9 cases. Haemostasis in 100% of cases. Four patients died in 1–2 days because of hepatic failure. Others received postponed EVL after stent extraction. The follow-up is up to 12 years. Subsequent examinations were held every 6–12 months. Patients with Child-Pugh C (27%) had the worst prognosis. Most of them died from hepatic failure or accidents, deaths not related with bleeding.

All the patients received combined drug therapy.

**Conclusions** EVL with plastic ligatures is effective in prophylaxis and treatment of variceal bleeding, even in stomach. Danish stent can temporary control the bleeding and allow to postpone EVL. Endoscopic treatment of esophageal and gastric varices decreases the rate of death because of variceal bleedings, but does not treat the main disease. Patients with Child-Pugh C assembe the group of a high risk of complications and mortality.

**eP147V ESD OF CIRCUMFERENTIAL ESOPHAGEAL SQUAMOUS CELL CARCINOMA, “MUCOSAL BRIDGE TRACTION TECHNIQUE”**

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**DOI** 10.1055/s-0039-1681889

**Introduction** We present the case of a circumferential oesophageal submucosal endoscopic dissection in a 56-year-old patient who presented a squamous oesophageal squamous carcinoma of 10 cm in superficial length, without evidence of lymph node involvement by EUS, CT and PET-Scan. ESD was decided as the preferred first-line treatment according to the patient decision.

**Brief description of the technique** The procedure was performed in the operating room, with the patient in supine position, intubated under mechanical ventilation, PEEP +5.

After marking the limits of the lesion, a circumferential mucosal incision was made with flush knife 1.5 mm at the anal side of the lesion. Then a semi-circumferential proximal mucosal incision was made. Tunneling with flush knife and IT nana was done.

'Mucosal bridge traction technique’: Before completing submucosal dissection, 2 mucosal ‘bridges’ were left on the oral side, to help traction of the lesion, when doing submucosal tunneling dissection. At the end of the procedure the mucosal bridges were cut. The procedure was completed in 2 hours and 45 minutes.

The final histology showed an intramucosal squamous cell carcinoma that contact the muscularis mucosa (M3) at two points, without evidence of lymphovascular or submucosal involvement.

The patient presented a stenosis after 3 weeks of the procedure, despite corticosteroid treatment, requiring endoscopies treatments 9 months after the intervention there is no evidence of local or distant recurrence, and the patient has a normal diet, having required 17 endoscopic balloon dilation sessions to date.

**Conclusions** The tunneling technique is useful in the submucosal dissection of extensive oesophageal lesions. This novel technique, ‘mucosal bridge trac-
tion technique” might be helpful in some cases of ESD, as an alternative traction technique.

**eP148V SUCCESSFUL COMPLETE ERADICATION OF BARRETT’S ADENOCARcinoma WITH UNDERLYING ESOPHAGEAL VARICES WITH MODIFIED EMR TECHNIQUE AND RADIOFREQUENCY ABLATION**

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**Case** We present the case of a 63-year-old patient with alcohol liver cirrhosis, with portal hypertension and esophageal varices in prophylaxis with beta-blocker.

During follow-up upper endoscopy a 0-IIa lesion is detected on a barrett’s esophagus.

A modified band ligation EMR technique was performed, with histology showing intramuscular adenocarcinoma, clear margins.

Three sessions of radiofrequency ablation with HALO 360 and 90 of the remaining Barrett’s esophagus were performed with the standard technique. In each session, intravenous somatostatin was administered starting before the procedure, and maintaining it 24 hours. Prophylactic antibiotic was administered peri-procedure. After each session hospital discharge was performed at 24 hours, there were no incidents or complications during or after the procedure.

In the last follow-up endoscopy Barrett eradication was confirmed endoscopically and histologically.

**Comments** Radiofrequency (HALO) ablation can be performed in selected cases of patients with esophageal varices and dysplastic Barrett, taking into account the risks and benefits of the technique.

In the present case Barrett’s esophagus (T1a) in a cirrhotic patient with esophageal varices, was successfully eradicated following radio frequency ablation (HALO), without complications.

**eP149 RISK FACTORS OF DYSPLASIA AND ADENOCARCINOMA IN BARRETT’S ESOPHAGUS**

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**Aims** Barrett’s esophagus (BE) is a rare lesion that can progress to adenocarcinoma of the lower esophagus Endoscopic and histological monitoring is necessary to detect these lesions early and to propose appropriate management.

The purpose of this work was to determine the risk factors of dysplasia or degeneration during BE.

**Methods** A retrospective descriptive study (2009–2016) including all patients presenting a Barrett’s esophagus in the endoscopy was conducted. The BE was classified according to Prague and the diagnosis was retained on the histological data of the esophageal biopsies. The patients were divided into two groups: group 1 (G 1) BE without dysplasia, group 2 (G2) BE with dysplasia (low or high grade) or adenocarcinoma. A statistical study (SPSS 23.0 software, p significant if < 0.05) was performed to compare the two groups.

**Results** Eighty-three patients with histologically confirmed BE were included.

They were distributed as follows: group 1: 70 patients and group 2: 13 patients. Of these, eight patients (9.6%) had dysplasia, only one of high grade, and five patients (6%) had adenocarcinoma. Comparing the two groups, the risk factors identified of dysplasia or degeneration were age with mean age (56 years old vs. 61 years old) respectively in groups 1 and 2 (p = 0.04) and dysphagia as functional sign (8%, vs. 46%, p = 0.003, OR = 9.1). There was no significant difference in sex ratio [H/F] (1.25 vs. 1.6, p = 0.08) neither in the other signs (anemia, gastroesophageal reflux). The two groups were comparable in the mean length of the BE (17 mm vs. 26 mm, p = 0.33) and the HP infestation rate (46% vs. 46%, p = 0.98).

**Conclusions** Only advanced age and dysphagia were predictive of dysplasia or degeneration during BE. An intensification of the monitoring protocol of these patients could be proposed to allow detection and early management of dysplasia.

**eP150 INJECTION OF CYANOACRYLATE FOR THE TREATMENT OF GASTRIC VARICES BLEEDING**

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**Aims** The aim of our study is to evaluate the efficacy and safety of gastric varices injection with cyanoacrylate.

**Methods** A prospective study between May 2015 and November 2018, all patients with gastric variceal bleeding was hospitalized and underwent endoscopic treatment. Success was defined as an absence of recurrent bleeding after the cyanoacrylate injection, and safety was evaluated by looking for side effects.

**Results** Thirty three Cyanoacrylate injections were done for 23 patients (13 women and 10 men, the sex ratio was 0.76), the mean age was 43 (ranging from 15 to 77 years old).

All patients had portal hypertension, 17 due to intra-hepatic cause (73.9%), 5 patients had extra-hepatic portal hypertension, and unidentified cause for one patient.

All patients was admitted to the emergency unit for upper gastrointestinal bleeding (hematemesis and melena in 73%), 25% was hemodynamically unstable. The hemoglobin mean rate was 7.2 g/dl (3.8 – 9.8). All patients received early vaso-actif treatment.

The esophagastroduodenoscopy (EGD) was done in less than 24 hours after the hemorrhage. We found GOV 2 in 82%, GOV 2 and IGV1 in 12.55%.

Commerciaflexible sclerotherapy injectors with a 6 mm/21-gauge needle were used for gastric variceal injection. N2BC was mixed with Lipiodol at the same proportion (1cc-1cc) with the average of 2 injections spot in every session.

All patients achieved immediate hemostasis so the treatment was successful in 100%, without any complications (epigastric discomfort, fever, embolism, thrombosis) and no endoscope was damaged.

The re-bleeding was noticed in 6 patients, from new gastric varices.

Two patients died from uncontrolled bleeding away from the N2BC injection.

**Conclusions** The study confirm the efficacy of and safety of cyanoacrylate injection for the treatment and second prophylaxis of gastric varices bleeding. To confirm it efficacy in the primary prophylaxis, other studies are needed.

**eP151 ANTIREFLUX MUCOSECTOMY. PRELIMINARY RESULTS OF A PROSPECTIVE STUDY**

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**Aims** Gastroesophageal reflux disease (GERD) is very prevalent and has a significant impact on quality of life. Proton pump inhibitors (PPIs) are the mainstay of treatment, but up to 30% of patients do not respond. Several endoscopic treatment systems have been developed, with disparate results. Anti-reflux mucosectomy (ARMS) is based on the resection of the gastric
mucosa distal to the cardia, which, after healing, results in a retraction that remodels the cardial valve, and rectifies the angle of Hiss. The main objective of the study is to evaluate the efficacy of ARMS by pH-metry and specific quality of life questionnaires.

**Methods** All patients submitted to ARMS, with dependent on conventional treatment who did not present a hiatus hernia, have been included consecutively and prospectively.

**Results** Since April 2018, the technique has been performed in 7 patients, average age of 41 years, a baseline deMeester score of 37.1 (mean), and a GERD questionnaire score of 19 points (mean). The average time of completion was 45 minutes, with slight bleeding occurring in three of them. The average stay was 1.5 days, without complications. The control gastroscopy at month showed the formation of a fully competent neovalve in all patients, except one. There was improvement in the GERD questionnaire, with an average decrease of 16 points and the 4 patients evaluated in the third month after technique had managed to suspend the PPIs. Of the 4 pH-metrics performed on that date, 2 of them showed a normal deMeester score. The third patient remained unchanged, in which a fully competent neovalve was not achieved, despite which he presented a significant decrease in the GERD score and suspended the PPIs.

**Conclusions** The preliminary results of this study indicate that the ARMS manages to reshape the cardial valve and achieve effective control of GERD, with an excellent safety profile.

**eP152 A MULTICENTER STUDY ON THE PREVALENCE OF EOSINOPHILIC ESOPHAGITIS IN THE CENTRAL REGION OF THE RUSSIAN FEDERATION AMONG ADULTS UNDERGOING UPPER GASTROINTESTINAL ENDOSCOPY**

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**DOI** 10.1055/s-0039-1681894

**Aims** The aim of this study was to evaluate the prevalence of eosinophilic esophagitis (EoE) in the central region of the Russian Federation among adult patients undergoing upper gastrointestinal (UGI) due to upper gastrointestinal symptoms.

**Methods** This study was conducted in 5 endoscopy departments in the central region of the Russian Federation (4 in Moscow, 1 in Yaroslavl). During a 12 month period (from October 2017 to October 2018) 23740 adult patients (aged 18 - 80 years) were evaluated using UGI endoscopy due to symptoms (heartburn, dysphagia, food impaction, acid regurgitation, chest pain, epigastric pain, nausea, vomiting). In patients with endoscopic findings of EoE (e.g., ma, rings, exudates, furrows, and strictures) 8 biopsies were obtained from the proximal and distal esophagus to quantify the maximum eosinophil count per high-power field (eos/hpf; hpf = 0.24 mm2) by a gastrointestinal pathologist. EoE was defined by ≥15 eosinophils/high-power field.

**Results** UGI endoscopy revealed typical endoscopic features of EoE in 47 patients. Esophageal biopsy confirmed EoE in 18 (0.076%) cases (male – 77.7%, female – 22.3%). The average age was 37.25 years (rank 21 – 67), 88.8% of patients were under 45 years of age. Individuals with EoE suffered from dysphagia (61.1%), heartburn (50%), food impaction (33.3%), and nausea (36.8%). 83.3% of EoE patients had a past history of gastroesophageal reflux disease, 27.7% suffered from allergic rhinitis, 33.3% had atopic dermatitis, 11.1% asthma. 1 patient had a family history of EoE (his sibling and mother also suffered from dysphagia due to EoE).

**Conclusions** The prevalence of EoE among adult patients undergoing upper endoscopy in the Russian Federation is 0.076% (1 case for 1319 UGI endoscopy). The characteristic findings of EoE patients included predominantly male gender, age under 45 years and history of atopic diseases.

**eP153 ACHALASIA: ENDOSCOPIC DILATATION RESULTS AND PREDICTIVE FACTORS OF FAILURE**

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**DOI** 10.1055/s-0039-1681895

**Aims** Achalasia is a primary motor disorder of the esophagus. Its treatment consists of decreasing the pressure at the lower esophageal sphincter (LES). Pneumatic dilatation is an efficient therapeutic method compared to surgery. The aim of our work is to study the results of endoscopic dilatation and to identify the predictive factors of failure.

**Methods** We have performed a retrospective analytical study from 2014 to 2018 including patients treated with pneumatic dilatation for mega-esophageal. Patients who have previously undergone Heller surgery or who received a medical treatment were not included. Treatment failure is defined as the persistence of dysphagia after 3 dilatations or relapse within 2 years. The studied parameters were the epidemiological, clinical, manometric data and the results of dilatation.

**Results** Seventeen patients were enrolled with an average age of 47 years and a sex ratio F/H = 1.4. Patients had mean Eckardt score = 7 and chest pain in 41% of cases. 35% of patients were of type I achalasia, whereas 65% were of type II. Seven patients had a resting pressure of LES > 35 mmHg and 72% had a residual pressure of LES > 10 mm Hg. 16 patients had a first dilatation with a 30 mm balloon. The mean number of dilatations was 2.8 and no serious complications were detected except a case of GERD. 47% of patients did not respond to dilatation. In bivariate analysis, only young age < 40 years and the presence of chest pain were predictive of failure (p = 0.008). However, no factor was found in multivariate analysis.

**Conclusions** In this study, endoscopic dilatation represents an efficient method in the treatment of achalasia with a success rate exceeding 50%. The response could have been better once we have included patients with a satisfactory number of dilatations. As mentioned in the literature, young patients and those with chest pain are advised to have Heller myotomy immediately or POEM.

**eP154 REAL LIFE DATA FOR DYSPLASTIC BARRETT’S ESOPHAGUS MANAGEMENT AND FOLLOW-UP**

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**Aims** Real life data concerning the management and outcome of patients with dysplastic Barrett esophagus (BE) are scarce. Evaluate the management and outcome of patients with dysplastic BE.

**Methods** Analyze 10 years data from a single center. All patients had dysplastic BE on ≥2 consecutive endoscopies confirmed by ≥2 dedicated pathologists.

**Results** 47 out of 55 dysplastic patients fulfilled the inclusion criteria [40 LGD, 5 high grade dysplasia (HGD) and 2 with intramuscular adenocarcinoma (IMAC) at the initial diagnosis]. Age: 58.7 ± 16.2 years, 37 males, with a follow-up of 2666 patient-months (range: 1 – 134, Q1 = 6, Q3 = 36). BE length > 3 cm in 15 patients. The grade of dysplasia progressed in 4 patients, all with BE > 3 cm and during the first 12 months after the initial diagnosis (2 LGD to HGD and 2 HGD to cancer). Among 31 patients with LGD without endoscopic intervention and a follow-up of 1914 months, 11 regressed to non-dysplastic BE (2 –
eP155 PREDICTORS OF FAILURE OF PNEUMATIC DILATION IN ACHALASIA

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Aims Although endoscopic peroral endoscopic myotomy (POEM) is an innovative and promising technique, its place remains to be defined and the first line treatment is still based on pneumatic dilation (PD) in several countries. The purpose of this study is to assess the results of endoscopic dilation and to determine the predictive factors for failure of this treatment.

Methods Patients with achalasia undergoing DP between 2000 and 2017 in our department were included and evaluated retrospectively. The dilations were performed with balloons of 30 to 35 mm. The efficacy of the treatment was judged on the clinical improvement of the symptoms (Eckart score). Failure was defined by a number of dilations > 2 or surgical treatment.

Results Sixty-eight patients were included. The average age was 47 years old with female to male ratio of 1.3. Manometry confirmed the diagnosis by showing esophageal aperistalsis present in all patients. The average pressure of the lower esophageal sphincter (LES) was 32 mm Hg (5 – 60 mm Hg). A total of 93 PDs were performed with an average of 1.3 dilations per patient. Clinical recurrence requiring a second dilation session was found in 22% of patients. Failure of endoscopic treatment was noted in 6% of cases. In a univariate analytical study, age under 30 years (p = 0.002), number of dilations (p < 0.0001), initial pressure of LES < 35 mm Hg (p < 0.0001) and vigorous achalasia (p = 0.002) were significantly associated with dilatation failure. In multivariate analysis, only young age (p = 0.004), low pressure of LES (p = 0.003) and vigorous achalasia (p < 0.001) were independent predictors of PD failure. In our study sex was not significantly associated with treatment failure.

Conclusions Pneumatic dilation is an effective, simple and well tolerated technique. However, in case of clinical and manometric predictive factors of PD failure, another endoscopic treatment such as POEM should be proposed as first line.
tioned dysmorphic left cervical distention which was deteriorated in size by food intake, last month. The laboratory findings of oesophagogram, manometry and OGD reconfirmed the presence of achalasia. CT scan revealed a large oesophageal tube with significant tortuosity that caused an extreme anatomical deviation of aorta and neighbor anatomy, explaining the above mentioned dysmorphic picture. A successful anterior POEM was performed.

Results The second post procedural day the barium oesophagogram showed the easy emptying of barium through the LOS. Patient was able to swallow and was discharged on antibiotics and progressive diet. Seven days later the patient assured that cervical distention had completely disappeared, obviously due to the reduction of LOS pressure. On follow up, CT scans confirmed an impressive correction of the normal anatomy after 2 months and complete restoration after 12 months. Clinical as well aesthetic success is preserved, too.

Conclusions In conclusion, the aesthetic advantage of POEM is not limited only on the profound lack of skin scars but may also be expanded to other not expected accompanied situations, as above described.

eP158V A CASE OF EOSINOPHILIC ESOPHAGITIS: HEARTBURN DOES NOT ALWAYS MEAN GASTROESOPHAGEAL REFLUX DISEASE

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A 27-year-old Caucasian man visited a gastrointestinal clinic because of intermittent heartburn and substernal chest discomfort for 6 months. He did not have any allergic histories and family histories of an atopic disease, but he had obesity grade 2 and essential hypertension. Physical examination was unremarkable, and there were no abnormalities in laboratory test results. The primary care doctor diagnosed gastroesophageal reflux disease (GERD) and referred to oesophagastroduodenoscopy (EGD). EGD showed: edema, decreased vascularity, longitudinal furrows, and white exudate on the lower and mid esophagus. Biopsies were obtained: 3 specimens at the proximal and distal esophagus, and also at stomach and duodenum. Whereas histology of stomach and duodenum was normal, eosinophilic infiltration (> 80 eos/hpf) was observed on the esophageal mucosa. Moreover esophageal impedance-pH monitoring did not reveal pathological gastroesophageal reflux (acid exposure time = 0.4%). High-resolution manometry detected normal esophageal motility. Based on the clinical, endoscopic and histological findings, the patient was diagnosed with eosinophilic esophagitis (EoE). Proton pump inhibitors (PPIs) and an empiric six-food elimination diet were prescribed. The patient noted the resolution of symptoms during that therapy. After a 12-week initial therapy course the follow-up endoscopy revealed edema, decreased vascularity, longitudinal furrows, white exudate in the distal esophagus despite of treatment. Magnifying endoscopy with narrow spectrum (i-scan OE) demonstrated dot-shaped intrapapillary capillary loops (IPCL) and absent cyan vessels, which were described in literature for EoE [Tanaka K, et al., 2013] and also multiple white plaques on the mucosal surface. Mucosal biopsies showed maintenance epithelial eosinophil infiltration (> 30 eos/hpf), eosinophil microabscesses and basal zone hyperplasia. Topical corticosteroids were added to therapy. Our case report demonstrates that the proper examination of patients with heartburn provides the correct diagnosis of EoE and helps to distinguish EoE from GERD, which is the most common esophageal disorder with heartburn and sometimes esophageal eosinophilia.

eP159 DIAGNOSTIC ADEQUACY OF BARRETT’S ESOPHAGUS IN A TERTIARY REFERENCE CENTER. PRELIMINARY ANALYSIS

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Aims Some patients are wrongly typified with Barrett’s esophagus (BE) in spite they don’t meet criteria: presence of intestinal metaplasia (IM) and columnar segment longer than 1 cm. We didn’t find studies focused on this fact so we decided to assess it and estimate the number of unnecessary follow-ups and factors contributing to a wrong categorization.

Methods Retrospective-descriptive study, tertiary reference endoscopy unit in Spain. Search in ENDBASE server for any endoscopy including “Barrett” in its indication, description or diagnosis in endoscopies between December 2013 and May 2018. We excluded follow-up endoscopies due to reasons different from BE.

Results 1178 endoscopies in 712 patients were included. 63,2% of cohort (745/1178) didn’t meet BE criteria, 30,2% did and in 6,5% it wasn’t possible to know due to lack of reporting. 58,9% of specimens showed no IM, 32,8% showed IM and in 8,2% it wasn’t possible to know. 29,9% of patients had a columnar segment shorter than 1 cm. Within the 745 endoscopies not meeting BE criteria, 37,7% (281/745) corresponded to 1st or later follow-up endoscopies and 18,9% (141/745) to 2nd or later follow-up endoscopies. Thus, at least 50.2% (141/281) of follow-up endoscopies were likely unnecessary during the study period. In 90.5% of endoscopies (1066/1178) the word “Barrett” was utilized (BE suspicious for Barrett, rule out BE, ultrashort Barrett, etc.) in diagnostic section. A gastroenterologist requested 67,1% of procedures. C or M length weren’t reported in 8,9% and 12,2% of endoscopies.

Conclusions In our area, BE is over-diagnosed mostly due to absence of IM. Half of endoscopies for BE surveillance during the study period could be unnecessary. Improvements in BE follow-up indication, pathology and endoscopic reporting are warranted. Further descriptive and multicenter studies focused on BE diagnostic adequacy-reporting are needed.

eP160 GASTRIC PERORAL ENDOSCOPIC MYOTOMY (G-POEM) – FIRST EXPERIENCE

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Aims Gastroparesis is defined as delayed stomach emptying in the absence of obstruction. Symptoms include vomiting, nausea, post-prandial fullness, epigastric pain, weight loss and early satiety. Etiology varies between post-surgical injury of the vagus nerve, diabetes mellitus or medication, yet one third of the cases are idiopathic.

Methods This is a retrospective single center case series of 8 patients treated with G-POEM. All patients received a gastric emptying scintigraphy (GES) and a 13C-octanoic acid breath test before the procedure. POEM was performed using a triangle knife with water jet function (Olympus) and HF-generator (VID 300D, ERBE) and a distal cap on the endoscope (Olympus, Distal Attachement, ø12,4 mm). The first step was to inject 5 ml of saline with indigocarmine at the greater curvature in the antrum in a distance of 4 cm to the pylorus. A small incision of 10 – 15 mm of the mucosa was performed (EndoCut-Q) and subsequently submucosal injection was performed. Tunneling in the submucosa was performed until the muscle of the pylorus was visible. The
pylorus was cut over a length of 1 cm (EndoCut-Q). Finally, the incision was closed by using through-the-scope (TTS) clips (Olympus, standard clip).

Results In all 8 cases, G-POEM was technically successful. The mean age of patients was 55 years. The etiology of gastroparesis was post-surgical in 6 cases and idiopathic in 2 cases. The mean procedure duration was 112 minutes (range 39 to 159). Technical success was 100%. The closure with TTS clips was successful in all cases. No acute complications occurred. Six out of 8 patients had clinical improvement within 3 months. Mean GES time decreased from 33 minutes preoperative to 14 minutes after G-POEM.

Conclusions G-POEM seems to be a safe and promising treatment option for gastroparesis, if indication was chosen carefully. However, long-term follow-up and randomized trials are necessary to evaluate this new technique.

Friday, April 5, 2019
PediaTC Endoscopy
09:00 – 17:00
ePosters

eP161 UPPER GASTROINTESTINAL TRACT INVOLVEMENT IN PEDIATRIC CROHN’S DISEASE: A SINGLE-CENTER EXPERIENCE
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Aims Crohn’s disease (CD) may involve any part of the intestine, but the prevalence of upper gastrointestinal (UGI) lesions has greatly varied. This aim of this study was to evaluate the prevalence and associated factors of UGI involvement in pediatric CD.

Methods We retrospectively analyzed 586 patients who were younger than 18 years of age at CD diagnosis between 1987 and 2013. They were classified according to the Paris classification. The frequency of UGI involvement and associations between risk factors and presence of UGI involvement were evaluated.

Results Of 586 patients, 152 (25.9%) presented with UGI involvement at the time of diagnosis. The male-to-female ratio was 2:5:1. The median age at CD diagnosis was younger (14.3 vs. 15.0, p < 0.001) in patients with UGI involvement. Isolated UGI involvement was seen in only 10 (1.7%) patients. Patients with UGI involvement were more likely to have growth failure (19.7 vs. 8.3, p < 0.001) and complicated behavior (19.7 vs. 7.8, p < 0.001) at diagnosis. In multivariate analysis, growth failure (HR: 2.44, CI: 1.42 – 4.16, p = 0.001) and complicated behavior (HR: 2.60, CI: 1.51 – 4.47, p = 0.001) at diagnosis were significant associated factors of UGI involvement.

Conclusions UGI involvement was relatively common, although isolated UGI involvement was rare. Growth failure and complicated behavior at diagnosis were identified as the main predictive factors for such involvement at CD diagnosis.

Methods We analyzed in retrospective-prospective study data (demographic details, associated anomalies, clinical presentation, diagnostics features, outcomes) of 14 patients with delayed diagnosis of CDM who were treated at the National Children Specialized Hospital “Ohmatdet” (Kyiv, Ukraine) during 2001 – 2018 years.

Results The age of patients was range 6 month to 15 years. There was female sex predilection (M: F = 1:2.5). Most patients had associated anomalies or syndrome: Down’s syndrome (n = 6), malformations of the cardiovascular system (n = 4), congenital pathology of the spine (n = 1), Meckel’s diverticulum (n = 1). The most frequent symptoms were recurrent episodes of vomiting n = 14 (100%), failure to thrive n = 7 (50%), aspiration n = 3 (21%) and gastrointestinal bleeding n = 4 (29%). The incomplete nature of the obstruction results in difficult and delayed diagnosis, because of the gradual onset of atony and ineffective peristalsis in the dilated duodenum. In all patients, we received the necessary confirmation using ultrasound, radiography and endoscopy. Diagnostics features during endoscopy includes: much expanded pylorus, ‘smooth’ nonfolding mucosa of dilated part of duodenum, dilated proximal segment of duodenum, which often recognized as ‘second stomach’ (the so-called “patulous pylorus”, “windsock sign” or “thumb of a glove”), inflammatory changes of the mucosa up to ulcers and erosions due to constant stagnation of food, atypical folds which surrounded the opening.

Conclusions The diagnosis of CD must always be kept in mind with the clinical presentations of high intestinal obstruction in children of different age. Endoscopy is the most informative diagnostic method.

eP164 BATTERY INGESTION COMPLICATIONS IN CHILDREN: CASE SERIES
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Aims Accidental ingestion of foreign bodies is common in children and is a medical emergency when it comes to battery intakes. According to data from a study conducted in the USA in the period 1986 – 2009, 56,535 cases of ingestion of batteries were recorded. It is important to note that 90% are asymptomatic or present with sialorrhea, dysphagia, food refusal, vomiting, hematemesis, cough, hematochezia, peritonitis and mediastinitis. The diagnosis is based on anamnesis and imaging tests. The main complications are tracheoesophageal fistula, esophageal perforation, esophageal stricture and death.

Methods Six patients were treated with complications resulting from battery impaction in the esophagus and were followed up at the Hospital Felício Rocho, the Hospital João Paulo II and João XXIII in Belo Horizonte, Brazil from January 2009 to March 2018. All of them presented severe complications secondary to the impaction of the battery in the esophagus and were followed up until hospital discharge. The patient’s complications were: patient 1: perforation of the esophagus, mediastinitis and pneumothorax/pneumomediastinum; patient 2: esophagomediastinal fistula; patient 3, 4 and 5: esophageal ulcer and esophageal stenosis; and patient 6: esophagotracheal fistula and mediastinitis.

Results Three patients evolved with esophageal stenosis and dilations were performed, with good evolution in all. One patient evolved with esophageal stenosis and esophagomediastinal fistula with conservative treatment. One patient required cervical esophagostomy, gastrostomy and awaiting esophageal reconstruction. One patient underwent tracheostomy, gastrostomy, jejunostomy and closure of esophagotracheal fistula.

Methods Congenital duodenal membrane (CDM) is anomaly characterized by luminal gastrointestinal obstruction and consists of a diaphragm with openings. Clinical presentation in such malformations occur from the first days of life, in some cases – much later, depends on the degree of the duodenum stenosis. The aim of our study is to describe the management and characterize endoscopic findings of patients with delayed presentation of CDM.

Results
In all 8 cases, G-POEM was technically successful. The mean age of patients was 55 years. The etiology of gastroparesis was post-surgical in 6 cases and idiopathic in 2 cases. The mean procedure duration was 112 minutes (range 39 to 159). Technical success was 100%. The closure with TTS clips was successful in all cases. No acute complications occurred. Six out of 8 patients had clinical improvement within 3 months. Mean GES time decreased from 33 minutes preoperative to 14 minutes after G-POEM.

Conclusions G-POEM seems to be a safe and promising treatment option for gastroparesis, if indication was chosen carefully. However, long-term follow-up and randomized trials are necessary to evaluate this new technique.
**Conclusions** The impact of batteries in the esophagus is a medical emergency and its prevention is very important, mainly by the parents, since all the accidents happen in their homes.

**eP166V** BLUE RUBBER BLEB NEVUS SYNDROME IN A 7-YEAR-OLD CHILD TREATED WITH LOOP LIGATION FACILITATED BY DOUBLE-BALLOON ENTEROSCOPY

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**Aims** The aim was to screen patients with juvenile systemic lupus erythematosus for Celiac disease.

**Methods** 100 patients with juvenile systemic lupus erythematosus were subjected to detailed history taking, clinical examination with thorough joint examination, laboratory test for assessment of lupus activity using SLEDAI score, serum levels of anti-IgA Ab lgA and IgG, esophagogastroduodenoscopy (EGD) for those with positive serology for Celiac disease.

**Results** Of the 100 recruited patients with juvenile systemic lupus erythematosus, 10 patients had positive serological evidence of Celiac disease. Of the 10 patients, 3 patients had mild elevation of IgG Anti Ttg (less than 20 U/ml) and seven patients had serum levels of Anti-IgT more than 20 U/ml. Correlation of Serum Anti-IgT levels with SLEDAI score was positive (p < 0.05) denoting strong association between Celiac disease and activity of SLE. EGD was done to all 10 patients with positive serology for Celiac disease revealing six patients with manifest Celiac (positive serology & positive endoscopy/biopsy) and four cases of latent Celiac (positive serology & negative endoscopy/biopsy).

**Conclusions** From the results of the present study we conclude that the possibility of concomitant presence of both Celiac disease & SLE is high (10%). The masking of Celiac disease manifestations (intestinal and extra-intestinal) by SLE manifestations make diagnosis of Celiac disease missed in almost all cases and leaves screening for Celiac disease using serology as the gold standard for its detection among juvenile SLE patients.

**eP168** THE EFFECT OF REBAMIPIDE ON NSAID-INDUCED GASTROENTEROPATHY COMPARED WITH LANSOPRAZOLE: A MULTI-CENTER, RANDOMIZED, OPEN LABELED, PILOT STUDY

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**Aims** Long-term use of Nonsteroidal anti-inflammatory drugs (NSAIDs) can cause gastroenteropathy. Proton pump inhibitors (PPIs) have been proved to be helpful for NSAID-induced gastroenteropathy and have been widely used. However, the impact of PPIs on small bowel injury induced by NSAIDs is controversial. Rebamipide is also known to be effective against NSAID-induced gastroenteritis, including small intestinal damage, although few studies have been reported in comparison with PPI.

**Methods** This was a multi-center, randomized, open labeled, pilot study. Patients with musculoskeletal disease, such as rheumatoid arthritis and osteoarthritis, who required more than 3 months of NSAIDs were enrolled, and all these patients were treated with meloxicam. The study group received rebamipide three times daily, and the control group received lansoprazole one time daily. Esophagogastroduodenoscopy, capsule endoscopy, laboratory test, and gastrointestinal symptoms were measured before and 12 weeks after.

**Results** A total of 33 patients were included with 15 in the study group and 18 in the control group. NSAID-induced gastric ulcer, which was the primary outcome of this study, did not occur in both groups. The change in the number of small bowel erosions and ulcers was -0.6 ± 3.06 in the study group and 1.33 ± 4.71 in the control group. The number of subjects with mucosal breaks, defined as multiple erosions and/or ulcers, was 3 (20%) in the study group and 6 (40%) in the control group (p = 0.427). No serious adverse events occurred in both groups. But, adverse events such as dyspepsia and skin rash occurred in 6 (32%) in the study group and 13 (65%) in the control group (p = 0.036).

**Conclusions** There was a trend that rebamipide decreased NSAID-induced mucosal damage compared to PPI, although there was no statistical difference. Moreover, rebamipide had fewer adverse effects than lansoprazole.
Endoscopy of such patient can be challenging. Dieulafoy stomy (PEG) fistula in such patients is usually narrow for standard gastroscope. Gastroscopy in the best way treat upper GI bleeding. In some medical

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Introduction Bariatric endoscopy is rapidly emerging as an effective and less invasive alternative to bariatric surgery. IGB placement is one of the most common procedures performed for the treatment of obesity. The authors report a rare, but potentially serious, complication of IGB placement.

Case report A 46-year-old woman with an initial BMI of 31.6 kg/m², with no other comorbidities. The patient was submitted to intragastric balloon (IGB) placement to treat mild obesity. Three months after the procedure, she had lost a total of 16 kg. At three months after the IGB placement, the patient consulted the bariatric endoscopy service due to epigastric pain over 48 hours, nausea, vomiting and abdominal distension. The patient reported progressive worsening of the pain, abdominal distension and vomiting. On physical examination, the patient had bulging of the upper abdominal and presented diffuse pain on palpation, but with no other signs of peritoneal irritation or hemodynamic instability. An abdominal X-ray was performed showing an increase in the diameter of the IGB. The patient was admitted to the emergency department and was treated with intravenous scopolamine, dipryone and bromopride, which provided symptomatic relief. Due to the improvement of symptoms including the pain on palpation, the patient was fasted for 12 hours to try to reduce the gastric contents and diminish the risk of pulmonary aspiration, and an esophaagogastroduodenoscopy with endotraacheal intubation. After inspection of the gastric cavity and aspiration of a large quantity of gastric residues, IGB hyperinsufflation was confirmed and it was decided to empty the balloon. However, the IGB ruptured after puncturing it with the needle. The liquid contents of the IGB were aspirated and the balloon was later removed using endoscopic tweezers without further complications. The patient had clinical improvement and she was discharged on the same day as the procedure.

eP170 URGENT GASTROSCOPY THROUGH PEG FISTULA APPROACH

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Aims Gastroscopy in the best way treat upper GI bleeding. In some medical condition natural feeding way is closed. Percutaneous endoscopic gastrostomy (PEG) fistula in such patients is usually narrow for standard gastroscope. Endoscopy of such patient can be challenging. Dieulafoy’s lesion is rare cause of GI bleeding.

Methods 64-year old patient with liver cirrhosis, who had laryngectomy due to carcinoma was admitted in hospital because of hematochezia. In past 6 months he was several times hospitalized because of massive, intermittent, GI bleeding. Gastroscopy throw the natural way couldn’t be done because of oesophageal stricture (lumen 3 mm). He had 16Fr PEG and tracheostomy. During earlier examination CT scans didn’t show bleeding site. Varices of oesophagus was suspected to bleed. Bleedings was successfully treated with conservative measures.

Results We perform gastroscopy with paediatric endoscope throw the PEG fistula. Procedure was unsuccessful because of food filled stomach. Than we do colonoscopy which didn’t showed bleeding site in the lower GI. Next day we repeat gastroscopy with retrograde oesophagoscopy up to stricture. There was no varical or other cause of bleeding. In stomach we confirmed 8 mm angiodysplasia with artery in the center (Dieulafoy’s lesion) without active bleeding. We couldn’t treat lesion because of no working chanel in paediatric endoscope. Few days later in propofol sedation we surgically wide fistula enough for adult gastroscope. First we treated lesion with 2,5ml of 1% sclerovin, than applied three clips on. At the end we applied 20 Fr PEG tube. Until then, patient had no any GI haemorrhage.

Conclusions PEG fistula can also be access port for treatment of upper GI bleeding. Diagnose can be made with paediatric gastroscope. Treatment with adult gastroscope can be done after surgically widening fistula in sediment. Dieulafoy’s lesion can be treat with combination therapy.

Keywords PEG, Dieulafoy, bleeding.

eP171 PATENCY CAPSULE IN CLINICAL PRACTICE – EXPERIENCE OF A TERTIARY REFERENCE CENTER

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Aims Videocapsule endoscopy (VCE) is a non-invasive method for examining the small bowel. VCE retention is the most significant complication of these devices and a patency capsule (PC) may be used to safely perform VCE, in patients with an increased risk of VCE retention.

To describe their experience with PC exams and to evaluate the indications, results and safety profile of its use in the clinical practice.

Methods Retrospective single-center including all PillCam CP exams performed between 2010 and 2017. PC detection with radiofrequency identification scanner and symptoms evaluation were assessed 30 hours after ingestion. The intestinal tract was considered to be patent if the capsule was not detected by the scanner 30 h after ingestion, or if the capsule was later excrated intact. Patients with a positive scanner detection of PC did not performed VCE.

Results 716 PC were performed (57% women; mean age of 42 ± 15 years). Main indications included Crohn’s disease (CD) (44%), suspected CD (41%), suspected small-bowel neoplasia (9%), previous abdominal surgery (4%), NSAID enteropathy/radiation enteritis (0.5%). 11% of patients had a previous diagnosis of small-bowel strictures in abdominal imaging or endoscopic exams and 33% had a history of previous abdominal surgery. The retention rate 30 h after CP ingestion was 28%, however 32 (5%) patients excrated an intact CP later. Two (0.2%) patients with CD required hospital admission due to small-bowel obstruction, which was successfully managed with intravenous corticosteroids. The history of small-bowel strictures was associated with non-patency of the small-bowel (p < 0.001). All 551 (77%) patients with small-bowel patency subsequently performed VCE without incidents.

Conclusions PC has proven to be a safe and effective exam. As expected, the history of prior intestinal strictures was associated with non-patency of the small-bowel. The rate of PC retention (23%) was similar to that described in other series.

eP172 RESULTS OF ENDOSCOPIC BALLOON DILATATION IN PATIENTS WITH GASTRIC OUTLET OBSTRUCTION RELATED TO PEPITIC ULCER DISEASE

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Aims Pyloric and bulb barstenosis is a rare complication of peptic ulcer disease (PUD). Surgery has been the conventional treatment, but it is associated with significant morbidity. Endoscopic balloon dilatation (EBD) with medical treatment showed short- and long-term efficacy and safety. The aim of our study was to evaluate the results of the EBD in patients with Pyloric and bulb barstenosis related to PUD and to determine the predictive factors of poor response to EBD.
Methods We conducted a retrospective descriptive study, including all patients who underwent an EBD for pyloric and bulbar stenosis related to PUD, between January 1997 and January 2017. The stenosis was defined by the inability to pass a 12-mm-diameter endoscope beyond the obstruction. The patients received a double-dose proton-pump inhibitor intravenously for 7–10 days and underwent a control endoscopic examination. If the obstruction persisted, an EBD was performed.

Results Seventy patients were included with a mean age of 51 years old (20–81). The sex ratio was 5.6. Seventy percent of patients were smokers and 7% were taking non-steroidal anti-inflammatory drugs. Thirty-four patients had a history of PUD. All patients were suffering from abdominal pain and vomiting. The median number of EBD sessions per patient was 1.67 (1–4). The median diameter of the balloon was 16 mm (12–20 mm). A duodenal perforation occurred in one case. The EBD was successful in 72.6% of cases. A surgical treatment was necessary on 20 patients.

Predictive factors for an unsuccessful EBD were: the failure of HP eradication, a number of sessions> 3 with p respectively, 0.03 and 0.045.

Conclusions The EBD associated with HP eradication is an effective and safe treatment of pyloric and bulbar stenosis related to PUD.

eP174 MULTIPLE NEUROENDOCRINE TUMOR OF THE SMALL BOWEL DIAGNOSED BY CAPSULE ENDOSCOPY

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Aims Primary malignant tumors of the small bowel constitute only about 1–2% of all gastrointestinal neoplasms. Although neuroendocrine tumors (NETs) are relatively rare, they still represent the second most common malignancy of the small bowel (after adenocarcinoma). Clinical manifestations include abdominal pain, bowel obstruction, diarrhea, weight loss and bleeding. The differential diagnosis of obscure gastrointestinal bleeding can sometimes be challenging for endoscopic as well as for radiological methods.

The aim of the lecture is to present the diagnostic and therapeutic management of a patient with NET of the small bowel.

Methods A literature research (in MEDLINE, PubMed and Google Scholar databases) was done focusing on diagnostics, endoscopic and surgical treatment of neuroendocrine tumor of the small bowel.

Results We present a case of an 80-year-old man suffering from severe hypochromic anemia. Routine endoscopic methods did not show any any pathology explaining the severe anemia. Finally, a single ulcerative infiltration of the ileum was diagnosed by capsule endoscopy (CE). CT enterography did not reveal any other lesions. In accordance with a positive chromogranin A, endoscopic and radiological methods, a suspicion of NET was expressed. During the surgery 7 lesions were found and a resection of 120 cm of ileum was performed. The histology confirmed a diagnosis of NET grade 1, with a total number of 15 NET lesions in the specimen.

Conclusions NETs located in the duodenum up to 1 cm in size can be treated endoscopically and are mostly isolated lesions. On the other hand, surgical treatment is recommended for NETs in the jejunum and ileum. They have a greater propensity to metastasize and NETs in this localization can even form more lesions.

We present a patient with 15 NET lesions in the ileum diagnosed by CE and successfully treated by surgical resection of the ileum.

eP175V DOUBLE PIGTAIL STENT INSERTION FOR EFFERENT LOOP SYNDROME

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Aims To describe the successful treatment of a patient with effenter loop syndrome with the insertion of two double pigtail stents.

Methods A 58-year-old man, who had undergone total pancreatectomy for a pancreatic head adenocarcinoma before 28 days, was admitted to the hospital with abdominal discomfort and bilious vomiting. Upper gastrointestinal endoscopy revealed a dilated gastric remnant and the endoscope could not be advanced into the effenter loop due to excessive kinking. The effenter loop was easily accessed and appeared normal. Gastrografin swallow showed nearly complete obstruction of the effenter loop at the level of its opening. The patient was initially treated with nasogastric tube decompression and total parenteral nutrition, without significant improvement. Five days later a repeat endoscopy was performed and two double pigtail stents (4 and 7 cm, respectively; 7Fr both) were inserted through the effenter loop stenosis over a guide wire and under combined endoscopic and radiologic guidance.

Results Following the procedure the patient experienced immediate symptomatic relief and could gradually tolerate oral intake. Ten days later plain abdominal films confirmed migration of both stents, while the patient remained asymptomatic.

Conclusions Insertion of two double pigtail stents relieved symptoms from effenter loop obstruction and may be considered as a treatment option in such cases.
Persistent symptoms- Referred to our institute. Discharged on supportive medical treatment. Close clinical observation and conservative medical management.

H/o accidental ingestion of metal pin.

Vomiting- one episode, non-bilious.

Nausea.

A 27 year old male.

Case report We present the usage of ligation-assisted EMR for the en-bloc resection of a 15 mm flat duodenal adenoma in a cirrhotic patient with ectopic duodenal varices. A 48-year old woman was referred to our department for screening EGD regarding her newly diagnosed cirrhosis. Endoscopy revealed except from small esophageal varices, additional ectopic duodenal varices. A flat (Paris classification 0-IIa) duodenal adenoma was also detected opposite the major papilla. Ligation-assisted EMR was chosen for the en-bloc resection due to the efficiency of the method in extruding the muscularis propria layer and entrapping only the mucosa and portions of the submucosa with lower risk of perforation in the thin duodenal wall. Secondly, the ligation band device could guide the operator more accurately in ensnaring with the plastic band the adenomatous polypoid tissue and transform the flat (0-IIa) duodenal polyp to a sessile one (0-Ia). The resected specimen was controlled without a target sign. The mucosal defect in the duodenal wall revealed minimal intraprocedural bleeding that was managed with small amount of adrenaline diluted into normal saline and sprayed above the bleeding defect. Finally, EMR defect was closed with 3 metallic clips in order to prevent delayed bleeding. The patient discharged the same day without any complications and the final histology closed with 3 metallic clips in order to prevent delayed bleeding. The patient discharged the same day without any complications and the final histology

Conclusions Ligation-assisted EMR could be a safe and accurate method for the removal of flat duodenal adenomas even in cirrhotic patients where the possibility of an acute bleeding is higher and the restoration of a perforation probably more difficult.

eP177V  A RARE CASE OF BURIED AND PERFORATING SHARP FOREIGN BODY (METAL PIN) FROM ANTRUM TO GB FOSSA – REMOVED USING ESD

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Case A 27 year old male.

Abdominal pain over right hypochondrium. Nausea. Vomiting- one episode, non-bilious.

H/o accidental ingestion of metal pin. Patient was admitted at government medical college for 15 days. Close clinical observation and conservative medical management. Multiple serial X-rays- s/o persistent position of FB in stomach. Discharged on supportive medical treatment. Persistent symptoms- Referred to our institute.

CT Findings NCCT revealed a Foreign body in the pre pyloric region of the stomach with its distal end extending into the gall bladder fossa with very minimal adjacent free fluid and few air foci s/o perforation.

Method Endoscopy revealed a bulge in the antrum with mucosal cover and the FB was imbedded deep in the bulge. We located it under fluoroscopy, marked the tip and then marked with a dual knife surround the area of the tip. Did a deep mucosal incision with ESD technique over the marked tip. After deep dissection we probed the area with a rat tooth forceps and again taking the help of fluoroscopy we caught the tip of the needle and removed it safely. There was little ooze from the raw area and hemostasis was secured with gold probe coagulation. Fluoroscopy confirmed no free CO2 leak from the area.

Conclusion ESD technique was useful in removal of a buried and perforating sharp foreign body from the antrum while using fluoroscopy guidance. The technique shows the importance of using resources at hand to remove difficult foreign bodies in the GI tract.

eP178 ASSOCIATION OF PROTON PUMP INHIBITORS WITH RISK OF DEMENTIA: A NATIONWIDE POPULATION-BASED COHORT STUDY IN SOUTH KOREA

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Aims The present study was performed to investigate the association between PPI use and dementia using the Korean National Health Insurance Service (KNHIS), to follow the development of dementia in users and non-users of PPIs in a Korean population over a > 10-year period (2002 – 2013).

Methods We used a retrospective, case-control design in which both cases and controls had exposure to a new PPI prescription and from which a definite period (12 months) of observation was accrued from the first PPI dispensing date until the onset of dementia or December 31, 2013.

Results These observations indicated that the PPI cohort had a significantly elevated risk of dementia compared to the control cohort (IRR: 1.34, 95% CI: 1.24 – 1.43). Subgroup analysis revealed similarly elevated risks of dementia in the PPI cohort for most variables. The risk of dementia in the PPI cohort increased at all ages, but risk ratio compared with the controls decreased with age, and there was no difference among subjects in their 80 s or older. The risk of dementia in the PPI cohort increased at all levels of household income and was increased in the low household income in both the PPI cohort and controls. The PPI cohort showed increased risk of dementia for all comorbidities.

Conclusions In our retrospective cohort study from the National Health Insurance Database of Korea, the risk of all-cause dementia was shown to be significantly associated with PPI use over 90 DDD, as compared to a matched control group.

eP179 REFRACTORY GAVE TREATED WITH RADIOFREQUENCY ABLATION BY THROUGH-THE-SCOPE CATHETER: THREE CASES OF COMPLETE RESPONSE

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Aims Gastric antral vascular ectasia (GAVE), or watermelon stomach, is an uncommon cause of upper gastrointestinal bleeding. One emerging and promising endoscopic treatment for GAVE is radiofrequency ablation (RFA) with focal catheters (e.g. HALO90 and HALO180). We present three cases of refractory GAVE treated with radiofrequency ablation with the smaller and more handling through-the-scope (TTS) catheter, with long-term response.
Methods Three patients (1st patient male 68 years old, 2nd patient male 81 years old, 3rd patient female 71 years old) with endoscopic and histological diagnosis of GAVE and chronic anemia dependent on blood transfusions, previously treated with argon plasma coagulation or endoscopic band ligation without clinical response, underwent RFA with the Barrx through-the-scope catheter. Every session was performed placing the device at 12 or 6 o'clock, starting at the pylorus and working proximally providing a maximum of 2 hits in the same area with an energy density of 12 J/cm². The average duration of each session was 35 minutes, with a number of applications ranging from 60 to 80.

Results The 1st and the 2nd patients were treated with two sessions while the 3rd patient with 3 sessions of RFA. Every session reached a full technical success without any complication during or after the procedure. After a mean follow-up of 9 months, in each of the 3 cases Hemoglobin rose by at least 2 g/dl with values above the threshold of 10 g/dl and no further transfusion has been required confirming a good clinical outcome.

Conclusions Radiofrequency ablation with the Barrx is a new, promising technique for endoscopic treatment of GAVE. Current evidence supports its effectiveness, in the absence of major adverse events. In contrast to other reports, we used the through-the-scope RFA catheter since it is more handy and can be inserted through the working channel providing a better maneuverability and avoiding multiple endoscope introductions.

eP180 PERCUTANEOUS ENDOSCOPIC GASTROSTOMY AND JEJUNOSTOMY – ONE CENTRE REVIEW (SUMMARY DATA 2002 – 2018)

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DOI 10.1055/s-0039-1681920

Aims The aim of study was to review number of percutaneous gastrostomies (PEG) and jejunostomies (PEJ) in PEG Center of Internal Clinic 3rd Medical Faculty of Charles University and Thomayer’s Hospital Prague.

Methods PEG is method of choice for application of enteral nutrition for more than 4 – 6 weeks, PEJ is introduced, when jejunal nutrition is indicated or introduction of PEG is contraindicated (stomach cancer) or technically impossible.

Results Since 2002 to 2018 1587 PEGs in 1526 patients (707 men, 819 women, aver. age 69.5 years, 6 weeks – 98 years) were introduced, 830 PEGs in patients over 70 years (351 men, 479 women), 169 PEGs in children under 15 years (80 boys, 59 girls, aver. age 2.1 years) 35 PEJs were introduced in 35 patients in the average age of 52.4 years (23 men, 12 women), 15 of them with stomach cancer.

312 patients (20.6%) have had Oncological diagnose (225 men, 89 women, aver age 57.3 years), in 227 of them (14.8%) Head end neck cancer was found (165 men, 62 women, aver age 61.4 years), in 92 patients PEG were introduced before radiotherapy of surgery, in 153 patients pull technique (Gau-derer-Ponsky or Sacks-Vine) and in 74 push-through technique (Russell) were used.

37 pts have had after stomach resection, in 36 of them PEG and in next 18 PEJ were successfully introduced, in 2 of them transthoracally.

The rate of early complications (in 30 days) was low – 10.5%, the mortality was 0.06% (1 patient), 2.4% had serious complications (2.1% aspiration pneumonia) and 9.2% of complications were non-serious (light) (8.4% stoma site infection.

Conclusions Percutaneous endoscopic gastrostomy and jejunostomy are safe and easy to perform methods for long term application of enteral nutrition.

eP181 SURVIVAL OF PATIENTS WHO UNDERWENT PERCUTANEOUS ENDOSCOPIC GASTROSTOMY TUBE PLACEMENT IN THE INTENSIVE CARE UNIT: FOUR YEARS OF FOLLOW-UP

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Aims We compared Intensive Care Unit (ICU) patients’ survival to the survival of patients hospitalized in the General Medical Ward (GMW) after percutaneous endoscopic gastrostomy (PEG) tube placement in a tertiary hospital in Athens, Greece.

Methods Using the hospital records, we retrospectively identified consecutive patients who underwent PEG tube placement and we retrieved their demographic, clinical and survival data (overall, 28th day, 3months and 6months mortality).

Results Between January 1st, 2015 and September 10th 2018, 116 patients [70 (60.3%) men, 63.4±19.5 years old] underwent PEG tube placement. The 28 (24.1%) ICU patients [21, (75.0%) men] were significantly younger compared to those hospitalized in the GMW (55.4±23.4 vs. 70.1±16.8 years, p = 0.001). As compared to GMW, similar number (9 vs. 8) of patients with head injury, and significantly fewer (p = 0.01) patients with neurological diseases/psychomotor retardation (12 vs. 34), dementia (5 vs. 32) and head and neck cancer (2 vs. 14) were hospitalized in the ICU. Survival data after PEG tube placement were available for 112/116 (96.5%) patients. Overall the median survival was similar between patients hospitalized in the ICU and GMW [135; 95% CI (37.9 – 232.1) vs. 60; 95% CI (3.7 – 116.2) days, p = 0.17]. 28th day (95% vs. 77.5%, p = 0.07), 3months (75% vs. 67.2%, p = 0.36) and 6months (65% vs. 57.1%, p = 0.37) survival rates were also similar between the two groups. During the follow-up period, PEG tube was removed in 3 ICU and 4 GMW patients, following restoration of the swallowing function.

Conclusions Survival after PEG tube placement is similar among ICU and GMW patients despite their different epidemiological and clinical characteristics.

eP182 SHORT AND MID TERM RESULTS OF ENDOSCOPIC SUBMUCOSAL DISSECTION IN EARLY GASTRIC CANCER: PROSPECTIVE STUDY IN PERU 2012 – 2018

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Aims Endoscopic submucosal dissection (ESD) is a treatment modality for superficial gastric neoplasms that has proven to be useful in multiple oriental studies; however, given its technical difficulty, it is not commonly used in the West. In the present study we evaluate the short and mid term results of ESD in the treatment of early gastric cancer (EGC) in two reference centers in Peru.

Methods We prospectively included all patients undergoing ESD for EGC from July 2012 to July 2018 in two medical centers. The rate of en bloc, complete and curative resections were calculated, as well as the complication rate. The rate of recurrences and the appearance of metachronous lesions were determined. In addition, a global and disease-free survival analysis were performed after resection.

Results in the period described, a total of 94 patients with 105 EGC were included. The medians of the measurement of the lesions and the time of the procedure were 20 mm and 50 min, respectively. The rates of en bloc, com-
plete and curative resection were 99%, 98% and 92%, respectively. There were 7 cases of perforation (6.7%) and 4 cases of late bleeding (3.8%). A patient with perforation had to undergo surgery. Within the group of curative resections there was a case of local recurrence (1.4%) and four cases of metachronous EGC (6%).

**Conclusions** Gastric ESD is a feasible treatment modality to be performed in our country, being effective and safe when performed by trained endoscopists and in reference centers.

**eP184 INTEREST OF UPPER GASTROINTESTINAL ENDOSCOPY BEFORE BARIATIC SURGERY**

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**DOI** 10.1055/s-0039-1681923  
**Aims** The search for Helicobacter Pylori (HP) infection is recommended systematically before bariatric surgery. The aim of our study is to determine the endoscopic and histological aspects of gastric lesions in patients with morbid obesity.

**Methods** This is a retrospective study including all patients proposed for bariatric surgery between January 2013 and September 2018. All patients had a preoperative exploration by upper gastrointestunal endoscopy (UGE) with 5 gastric biopsies between January 2015 and September 2018. The histological examination allowed us in addition to the existence of HP, studying the activity of gastritis, gastric atrophy and intestinal metaplasia according to the Sydney System.

**Results** Among 355 patients who had UGE with gastric biopsies, 248 patients (96 men and 152 women, mean age 47 years) had chronic HP gastritis (70%). Sixty patients (20%) were smokers. Anemia was present in 80 patients (22%). Congestive or erythematous gastritis was the most common endoscopic lesion (n = 158, 63.7%). Other endoscopic findings were: nodular gastritis (n = 49), erosive gastritis (n = 13), ulcerated gastritis (n = 17), congestive gastroeo-bulbitis (n = 16), bulbuls erosive (n = 12), gastric ulcer (n = 9) and ulcerated bulbuls (n = 9). Chronic gastritis was active in 90% of cases with mild to moderate activity in most patients (88%). The prevalence of gastric atrophy was 19%. It was present in the fundus in 3.6% of cases. The prevalence of intestinal metaplasia was 9%. Only one patient had low grade dysplasia. The presence of HP was associated with smoking (p = 0.04) and the presence of anemia (p = 0.05).

**Conclusions** In our series, the prevalence of chronic HP gastritis was 70%. The presence of HP was associated with smoking and anemia. Intestinal metaplasia, fundic atrophy and dysplasia were present in 9%, 3.6% and 0.5% of cases, respectively.

**eP185 ENDOSCOPIC AND HISTOLOGICAL ASPECTS OF HELICOBACTER PYLORI GASTRITIS**

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**DOI** 10.1055/s-0039-1681924  
**Aims** The responsibility for Helicobacter pylori (HP) in the genesis of peptic ulcer is well established. Its role in gastric carcinogenesis has also been demonstrated. The purpose of our work was to determine the endoscopic and histological aspects of HP gastritis.

**Methods** This is a retrospective study including all the patients who had a first upper gastrointestinal endoscopy (UGE) with 5 gastric biopsies between January 2015 and September 2018. The histological examination allowed us in reference to the existence of HP, studying the activity of gastritis, gastric atrophy and intestinal metaplasia according to the Sydney System.

**Results** Among 355 patients who had UGE with gastric biopsies, 248 patients (96 men and 152 women, mean age 47 years) had chronic HP gastritis (70%). Sixty patients (20%) were smokers. Anemia was present in 80 patients (22%). Congestive or erythematous gastritis was the most common endoscopic lesion (n = 158, 63.7%). Other endoscopic findings were: nodular gastritis (n = 49), erosive gastritis (n = 13), ulcerated gastritis (n = 17), congestive gastroeo-bulbitis (n = 16), bulbuls erosive (n = 12), gastric ulcer (n = 9) and ulcerated bulbuls (n = 9). Chronic gastritis was active in 90% of cases with mild to moderate activity in most patients (88%). The prevalence of gastric atrophy was 19%. It was present in the fundus in 3.6% of cases. The prevalence of intestinal metaplasia was 9%. Only one patient had low grade dysplasia. The presence of HP was associated with smoking (p = 0.04) and the presence of anemia (p = 0.05).

**Conclusions** In our series, the prevalence of chronic HP gastritis was 70%. The presence of HP was associated with smoking and anemia. Intestinal metaplasia, fundic atrophy and dysplasia were present in 9%, 3.6% and 0.5% of cases, respectively.
eP187 ANALYSIS OF THE PERFORMANCE OF THE ENDOSCOPIC TREATMENT OF OBESITY WITH INTRAGASTRIC BALLOON. IS THE SECOND HOUR OF GASTRIC EMPTYING THE CRUCIAL FACTOR?

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Aims Morbid obese Patients are treated very efficiently by the various Bariatric surgery techniques, while overweight patients have good results with drug interventions and changes in lifestyle. For the patients who are at the intersection of these two strategies, the endoscopic treatment of obesity with the intragastric balloon is a very interesting and widely used alternative. Understanding the mechanism of action of intragastric balloon is an important research factor for better use of the method. Changing the rate of gastric emptying is one of the probable hypotheses of function of the accessory during the treatment.

Methods Twenty patients were retrospectively evaluated for weight loss performance immediately after IGB implantation and six months afterwards. The velocity of gastric emptying was measured before and after IGB implantation by scintigraphy. The relationship between gastric motility alteration and final weight loss was also examined.

Results The sample consisted of adults, with a mean age of 34.19 ± 6.16 years (minimum age: 23 years, maximum age: 48 years). The mean weight loss between before IGB placement and immediately after IGB removal (16.68 ± 5.71 Kg, p < 0.01), before and after six months of IGB withdrawal (14.42 ± 6.65 kg, p < 0.01), and between IGB withdrawal and six months of follow-up (2.47 ± 4.07 kg, p = 0.02) were significant. There was a significant increase between the mean retention of the test meal (%) post-implant of the IGB for the analyzes of 1 h (Before: 71.6 ± 14.12, After: 86.2 ± 21.89, p = 0.02) and 2 h (28.1 ± 16.99, 67.99 ± 29.32, p < 0.01).

Conclusions IGB treatment is efficient in the treatment of obesity grade I and II, promoting an important decrease in gastric emptying speed during the use of the accessory, especially on the second hour collaborating to the fullness sensation between meals.

eP188 TEN YEARS OF UPPER GASTROINTESTINAL BLEEDING IN A LARGE VOLUME EMERGENCY DEPARTMENT

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Aims To analyse the etiologies of upper gastrointestinal bleeding (UGIB) in a public hospital from the city centre of Brussels. To test two risk scores – Rockall Score (RS) and Glasgow-Blatchford Score (GBS) – in UGIB and to analyse how they perform for predicting outcomes.

Methods Based on in-hospital records, we retrospectively studied 243 adults who were hospitalized from the emergency room for UGIB between the 01/01/2004 and the 31/12/2014 at the CHU St Pierre in Brussels, Belgium.

We collected data regarding etiologies of UGIB, need of intervention (blood transfusion, endoscopic therapy, surgical treatment), the rebleeding rate and in-hospital mortality.

We applied RS and GBS to respectively 238 and 242 patients.

Results The most common etiology of UGIB was peptic ulcer (67.9%). No etiology was found for 12.4% of patients. Regarding interventions, 57.2% of patients required blood transfusion, 42.8% needed endoscopic therapy and 7.4% underwent surgery. Rebleeding rate was 11.9%. Mortality was 6.6%.

The RS had a greater discriminating capacity for mortality risk (AUC 0.82) than for predicting rebleeding rate (AUC 0.65).

The GBS had a similar discriminating capacity for mortality (AUC 0.76) and for blood transfusion (AUC 0.86) and was less discriminant for the need of intervention (AUC 0.65).

Applying the usual threshold for management of UGIB as outpatients (<1), GBS identified correctly 106/107 patients who needed intervention, but one patient with a score of 0 needed transfusion and endoscopic therapy.

Conclusions Despite major advances in management of UGIB, mortality remains significant in our inpatient population where peptic ulcer remains the principal cause of UGIB.

The GBS is an interesting discrimination tool regarding mortality and for predicting the need of blood transfusion. The need of excluding patients with recent abdominal surgery from GBS for outpatient management assessment should be evaluated in larger prospective studies.

eP189 EARLY EXPERIENCE OF ENDOSCOPIC SUBSEROSAL DISSECTION (ESSD) FOR GASTRIC TUMORS

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Aims Most of gastric subepithelial tumors confined to submucosa can be resected by endoscopy. The endoscopic submucosal resection for lesions originating from muscularis propria has been performed for the mass with submucosal or intramuscular growing only. Until now, the data for endoscopic subserosal dissection of gastric tumor was very rare.

Methods We analyzed to know the effectiveness of endoscopic subserosal resection (ESSD) in the gastric epithelial or subepithelial tumor with exophytic growing, retrospectively. ESSD was performed for 11 lesions, from August 2011 until May 2018. We wanted to evaluate about complete resection, procedure time and complication.

Results There were 3 male and 8 female, with mean age of 62.4 (51 – 72). Pathologic Diagnoses were 3 GISTs, 6 leiomyomas and 2 tubular adenomas with severe fibrosis. The site of lesions were gastric antrum in 2 and gastric body in 9. The mean size of resected specimens was 21 mm (12 – 36 mm). Mean procedure time was 36 min (11 – 72 min). En bloc resection rate was 11/11 (100%) and complete resection was achieved in 9/11 (82%). Perforation was occurred in 2 cases and managed conservatively.

Conclusions We think that Endoscopic subserosal dissection may be used as effective tool in the treatment of some gastric subepithelial tumor with subserosal or intramural growing. Further study is needed for evaluation for safety of ESSD.
eP190  CAPSULE ENDOSCOPY WITHOUT LESIONS: SIGNIFICANT FINDINGS IN OBSCURE BLEEDING – IS POOR PREPARATION ASSOCIATED WITH GREATER BLEEDING RECURRENCE?

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Aims  False negative capsule endoscopy (CE) performed for obscure gastro-intestinal bleeding (OGIB) can occur in about 20–30% of patients. Poor bowel preparation may impair CE’s accuracy. The aim of this study was to evaluate bleeding recurrence in patients with OGIB with CE without significant findings, taking into account the bowel preparation.

Methods  Retrospective study that included CE performed 2010 – 2014 for OGIB and with negative significant results (CE without findings or P0/P1 lesions according to Saurin classification). Bleeding recurrence was defined as need for transfusional support, presence of melena/haematochezia or haemoglobin drop of 2 g/dL. Bowel preparation was classified according to qualitative scale of Brotz.

Results  Four hundred fifty-nine CE were evaluated and 86 were included (64% female, mean age 67 years). Of these patients 12% had manifest OGIB and 88% had occult OGIB. The CE showed no lesions in 63%, P0 in 7% and P1 in 30%. The CE preparation was rated as excellent in 7%, good in 29%, fair in 36% and poor in 28%. 15% of the patients had bleeding recurrence, which was not related with bowel preparation (p = 0.8). 12% of patients performed another method for the study small bowl and significant findings were found in 3 patients (2 angiectasias and 1 gastrointestinal stromal tumor) – these patients presented in the initial CE good or fair bowel preparations.

Conclusions  In this sample, patients with CE with negative significant findings the quality of the preparation did not interfere in the bleeding recurrence that was 15%.

eP191  HISTOLOGICAL PROFILE OF HELICOBACTER PYLORI-INDUCED CHRONIC GASTRITIS: ABOUT 227 CASES

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Aims  The aim of our work is to define the different histological aspects of gastritis associated with HP infection.

Methods  A retrospective study was performed, collating 227 patients admitted to our unit between August 2016 and November 2016 for upper endoscopy. Inclusion criterion was presence of chronic HP gastritis on the histological examination. Gastritis in the vicinity of malignant neoplasia or peptic ulcer were excluded.

Results  Average age of patients was 47.2 years (extremes ranging from 14 to 85 years) with a sex ratio M/F of 0.8. The inflammation rate was light in 19.8% of the cases, moderate in 75.8% of the cases, and severe in 4.4% of the cases. The gastritis was not active in 18.5% of the cases, light in 37.0% of the cases, moderate in 36.6% of the cases, and severe in 7.9% of the cases. Density of colonization was HP+ in 40.1% of the cases, HP++ in 42.3% of the cases, and HP+++ in 17.6% of the cases.

Gastritis was atrophic in 29.5% of the cases. The atrophy was light in 68.7% of the cases, moderate in 28.3% of the cases, and severe in 3.0% of the cases. The prevalence of follicular gastritis was 15.0%. Intestinal metaplasia was found in 7.9% of the cases. In 6.6% of the patients, intestinal metaplasia was associated with gastric atrophy.

In univariate analysis, age, inflammation intensity, gastritis activity, and HP colonization density were associated with gastric atrophy (p = 0.001, p = 0.030, p = 0.044, and p = 0.016, respectively). In multivariate analysis, only age was associated with gastric atrophy (p = 0.002).

Conclusions  In our study, gastric atrophy was present in almost 1/3 of the cases and was associated with older age. Follicular gastritis and intestinal metaplasia were infrequent.

eP192  HEREDITARY HEMORRHAGIC TELANGECTASIA: DEMOGRAPHIC AND ENDOCOSCOPIC CHARACTERISTICS OF A LATINO AMERICAN COHORT

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Aims  Primary: To describe the demographic characteristics and endoscopic findings of patients with HHT in a third-level center in Mexico. Secondary: To determine the number and type of endoscopic studies and treatment used.

Methods  Retrospective study of patients with diagnosis of THH made between 1997 – 2017. Review of clinical records and endoscopic reports was made. The frequency of epistaxis, GI hemorrhage, anemia, type of endoscopic treatment, rebleeding and death were determined. To summarize the results, descriptive statistics were used (with STATA v.14.1 program).

Results  We reviewed 30 cases and 225 endoscopic studies. 50% were women, median age at diagnosis: 41 years (6 – 69). The most frequent place of origin was Mexico City (n = 14, 47%). The most frequent comorbidities were GI pathologies (n = 8, 27%). 23% of patients did not require endoscopic evaluation. 28% of patients had hemorrhage without evidence of clinical hemorrhage. 70% had epistaxis. 14 patients were assessed for GI tract hemorrhage (46.7%). The median of studies per patient was 4.5 (IQ 3 – 15); the most frequently upper endoscopy (76%, n = 171); only 2% (n = 5) were VCE. Most of telangiectasia were found in the upper digestive tract (greater curvature, 60%), however the data of active bleeding were more frequent in the middle intestine (2/5 studies, 40%). In relation to endoscopic treatment, the majority (n = 13, 43.3%) was treated with APC. Only 3 patients (10%) were under medical treatment with antiangiogenic drugs. 33% (n = 10) was hospitalized for anemia and/or GI bleeding and 43.3% (n = 13) went to the ER for this reason. 26.7% (n = 8) presented rebleeding despite endoscopic treatment. Two patients died due to recurrent hemorrhage and severe anemia.

Conclusions  THH is present in our country. Most cases originate in Mexico City. Upper endoscopy was the most frequently performed study for anemia and overt gastrointestinal bleeding. The multidisciplinary management of these patients is indispensable for the treatment of recurrent hemorrhage.

eP193  SHOULD WE SYSTEMATICALLY PERFORM AN ESOPHAGOGASTRODUODENOSCOPY (EGD) IN ANY PATIENT WITH IBD?

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Aims  Certain complementary examinations are essential to make the diagnosis of inflammatory bowel disease (IBD), as well as to establish an initial mapping that seems to be a crucial element in the therapeutic choice. However, the systematic search for lesions in the upper digestive tract is still controversial. The aim of this work is to study the contribution EGD in IBD.
Methods It is a retrospective study, between January 2005 and April 2018 including all the patients followed for an IBD and having benefited from an EGD within the department of gastroentero-hepatology of the CHU Hassan II of Fez.

Results Among 740 patients followed for IBD, 207 were included. The mean age was 36.8 years. 131 patients had Crohn disease and 75 patients had ulcerative colitis (UC). EGD was almost normal in 131 patients (63.6%), and revealed: oesophagitis in 15 patients (7.28%), nodular or atrophic gastritis in 11 patients (5.3%), a the presence of a the loss of duodenal folds in 17 patients (8.25%), and gastroduodenal aphthous ulcerations suggestive of a high localization of Crohn’s disease in 18 cases (8.7%). Histology confirmed the diagnosis of Crohn’s disease in 4 patients, and showed associated celiac disease in 11 patients (5.3%), 10 of whom were Crohn’s, whereas in 175 patients (85%), it was nonspecific. HP was found in 55.8% (n = 115) of patients.

Conclusions In our series, the EGD was almost normal in 63.6% of cases and showed associated high involvement in 18 patients (8.6%) and an association with celiac disease in 11 patients (1.4%). Of all IBDs.

The results elucidated recommend the FOGD as a systematic examination in IBD. It seems to be useful especially in case of upper digestive symptomatology.

eP194 INTRAHEPATIC DILATED BILE DUCTS IN OSLER-WEBER-RENDU SYNDROME

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Aims Osler-Weber-Rendu syndrome, is a rare autosomal dominant disorder (incidence in the general population is 1–2/100,000 while the race and gender distribution are homogeneous). It is characterized by abnormal blood vessel formation in the skin, the mucous membranes and often within other organs such as the lungs, liver and brain. Epistaxis is the earliest and most frequent manifestation, followed by telangiectasias in the oral mucosa, tongue, lips, fingers and skin.

Methods A 40 years old woman was referred to our department for abdominal pain on the right upper quadrant. Laboratory tests showed anemia. She was evaluated with abdominal ultrasound, computed tomography, upper abdominal MRI-MRCP, with findings suggesting multiple intrahepatic arteriovenous malformations, seen in Osler-Weber-Rendu syndrome with hepatic involvement. ENT evaluation showed telangiectasias in the nasal mucosa. A telangiectasia on the lower lip was spotted from the physical examination. Her past medical history included recurrent epistaxis, which started seven years ago, mitral valve prolapse, Hashimoto’s thyroiditis. Patient reported that both her mother and sister were diagnosed with the same syndrome.

Results Diagnosis was made based on the four Curacao criteria:
1. recurrent epistaxis,
2. visceral arteriovenous malformations,
3. mucocutaneous telangiectasias
4. a positive family history.

Conclusions The mutations that have been identified with molecular testing are ENG, ALK1 and SMAD4 and are responsible for 87% occurrence within families. Molecular testing of individuals with a known mutation in the family, reduces the costs of repeated screening in relatives being in risk of developing the syndrome.

eP195V PRIMARY EPITHELIOID ANGIOSARCOMA OF THE JEJUNUM: A RARE CAUSE OF UPPER GASTROINTESTINAL BLEED

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Background Gastrointestinal angiosarcoma is a rare and highly malignant soft tissue tumor constituting < 1% of all gastrointestinal malignancies and only 1% of all sarcomas. The objective of this case report, is to increase awareness of this rare tumour.

Case description A 73 year old man with type 2 diabetes, COPD, hypertension and obstructive sleep apnoea was admitted to hospital with melaena. He had a 5 year history of iron deficiency anaemia. Initially, the anaemia was mild (Hb 11 – 12 g/dl) but over the past 5 months, became more severe and symptomatic (Hb 4.5 – 8 g/dl), requiring 24 units of blood over 3 months. Gastroscopy and colonoscopy were normal whilst CT scan showed lytic lesions in the spine (T6/T8). Targeted spinal biopsies were inconclusive. Capsule endoscopy showed a punched out bleeding ulcer in the jejunum. Double Balloon Enteroscopy (DBE) via the anal route failed to find any abnormality. DBE via the oral route did locate the jejunal ulcer, and 30 cm distal to the ulcer, there was a 2 cm polyp which was not seen on capsule endoscopy or CT. The ulcer was biopsied and the polyp was resected en bloc using Endoscopic Mucosal Resection. The histology of the jejunal polyp and ulcer showed epithelioid angiosarcoma; the tumour cells were strongly positive for CD31. Review of biopsies from the spinal lytic lesions revealed metastasis from this primary jejunal angiosarcoma. The patient was referred to a specialist Sarcoma Unit but died 3 months after diagnosis.

Conclusion The diagnosis of small bowel angiosarcoma is challenging due to the non-specific clinical, radiological and histopathological features. Enteroscopy may help detect the source of bleeding and biopsies/polypectomy with immunohistochemical studies may provide definitive diagnosis. A high degree of suspicion is required to ensure early diagnosis and treatment.


eP196 DIAGNOSTIC OF HELICOBACTER PYLORI VIA ENDOSCOPY: THE CLINICAL ISSUE OF SUPPRESSIVE CONDITIONS

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Aims Testing for Helicobacter pylori (H. p.) is frequently conducted during esophagogastroduodenoscopy (EGD). Proton-pump inhibitors (PPI), upper gastrointestinal bleedings and recent antibiotic treatment deteriorate H. p. test quality.

Aim of our study was to evaluate the pattern of H. p. suppressive conditions in patients undergoing elective EGD in a large German university hospital.

Methods The survey was performed as a single center study in outpatients as well as inpatients. Over 6 months, every elective EGD was included and suppressive conditions were assessed. If H. p. testing was indicated according to guidelines, always both histology and rapid urease test (RUT) were conducted in analogy to the Sydney classification.

Results 1631 patients were included (median 61 years, 36.0% outpatients, 64.0% inpatients). Overall, 76.5% were under H. p. suppressive conditions. Major suppressive condition was the intake of PPI (70.7%). 50.2% of all patients were tested. 82.7% were negative for both tests. Of those, 70.0% were tested under suppressive conditions with a high risk of false negative results. 17.3% had a positive H. p. testing. Here, only 9.9% showed an incongruent

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result (14.1% positive for RUT only and 85.7% positive for histology only). These discrepancies only occurred under suppressive conditions. 

**Conclusions** Obviously, guidelines unanimously recommend H. p. testing under non-suppressive conditions. However, this often does not meet the clinical requirements. Especially, the demanded withdrawal of proton-pump inhibitors can often not be realized.

Our data represent the real clinical circumstances of testing in patients undergoing EGD with more than 60% of outpatients and even more than 80% of inpatients showing suppressive conditions leading to potentially more false negative results. In this respect, the present guidelines might not be expedient enough. Further research is needed to improve and clarify everyday clinical practice.

**eP197** THE VALUE OF THE UPPER GASTRO-INTESTINAL TRACT ENDOSCOPY IN CASE OF BLEACH INGESTION: ABOUT 80 CASES

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**DOI** 10.1055/s-0039-1681936

**Aims** Evaluate the input of the upper gastro-intestinal tract endoscopy in case of a bleach ingestion.

**Methods** It is a retrospective study over 5 years length period, from November 2013 to July 2018, collecting the results of gastrointestinal endoscopy performed on patients who ingested bleach.

**Results** Eighty patients, with a mean age of 27.71 years and extremes between 14 and 70 years old, majority of whom are females (81.25%) and a sex ratio of 4.33. A oesophagitis stage I was found in 20 cases, stage IIa in 12, stage IIb in 5 others and a normal esophageal mucosa in 43 cases. A gastritis stage I was concluded in 51 patients, stage Ila in 17, a gastritis stage IIb in 3, stage IIIa in 1 case and a normal gastric mucosa in 8 patients. A bulbo duodenite stage I was objectified in 15 cases and 65 others have a strictly normal bulbo-duodenal mucosa.

**Conclusions** The upper gastro-intestinal tract endoscopy seem to be of no use in case of a bleach ingestion due to the very low severity of lesions induced.

**eP198** DEVELOPMENT AND FEASIBILITY OF A METHOD TO IMPROVE THE DIAGNOSTIC VALUE OF MAGNETICALLY ASSISTED CAPSULE ENDOSCOPY IN THE DETECTION OF ESOPHAGEAL DISORDERS

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**DOI** 10.1055/s-0039-1681937

**Aims** Esophageal disorders, especially reflex esophagitis and Barrett’s esophagus are common diseases. The non-invasive visualization of the esophagus is not solved yet. Esophagogastroduodenoscopy (EGD) is the gold standard diagnostic test, however it is uncomfortable for patients without sedation. The aim of the current study was to develop a method with magnetically assisted capsule endoscopy (MACE) for esophageal investigation and to perform a feasibility study of its use in patients.

**Methods** We developed a method for stationing the MACE capsule in the distal esophagus. First an ex vivo artificial esophagus was prepared and tested to find the optimal position and parameter settings to restrain the MACE capsule approximately 5 cm above the cardia. After the ex vivo development phase, we performed a feasibility study in 20 volunteers (median age: 47.65 years; 60% female; all had both MACE and EGD examinations within 3 months). All patients were laid on their left side, the upper body was raised 45 degrees with the examining table. The magnetic C-arm of MACE system was positioned next to their backs and the magnetic vector was positioned 90° and -90° to hold the capsule perpendicular to the esophageal lumen. We recorded every examination, both MACE and EGD, and analyzed the videos independently.

**Results** With our new protocol we could restrain the capsule in the esophagus in 90% of the cases (18/20). Esophagitis and visualization times were 91.9 s with MACE and 46.2 s with EGD on average. The diagnostic abnormalities with EGD and MACE were comparable, while the diagnostic yield with UGE was higher than MACE regarding minor reflux erosions (12/6).

**Conclusions** Our protocol is a promising method to investigate the esophagus non-invasively with MACE to exclude major pathology in low risk groups. Further capsule development (cameras on both end, higher frame rate, higher resolution) may improve the diagnostic accuracy of this method.
eP200 MUCOSAL ENDOSCOPIC RESECTION OF LARGE LESIONS OF THE UPPER DIGESTIVE TRACT

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Aims Endoscopic mucosal resection (EMR) of upper digestive tract (UDT) lesions presents a good success rate and an excellent safety profile. The aim is to investigate the efficacy and safety of EMR of significant lesions of UDT in our center.

Methods Observational, uncentered, retrospective study of a cohort of patients with large UDT lesions (>15 mm) treated by EMR in the last 7 years. Demographic, endoscopic and histological variables were collected. The endpoints were the resection rate R0 (free margins) and complications.

Results During the study period, 89 of a total of 172 EMR were performed in lesions greater than 15 mm. Sixty-one percent of patients had associated comorbidities, being diabetes mellitus (11%) and cardiovascular disease (6%) the commonest. Antplatelet and anticoagulant treatment was present in 26% and 16% (n = 23 and 14) of our patients. Lesions were larger than 20 mm in 57 (64%) of patients. Lesions were located in the stomach in 70 patients (79%), in the esophagus in 14 (15%) and in duodenum in 5 (6%) patients. The most common EMR used technique included diathermy snare with prior submucosal injection (56, 63%). R0 rate was achieved in 65 (73%) patients. Complications occurred in 12 (13%) patients: bleeding in 9 (10%) patients, 1 postpolypectomy syndrome and 2 perforations. Endoscopic follow-up was performed in 17 patients with high risk lesions (19%). There were 6 recurrences. 4 of them were rescued endoscopically, and two required surgical treatment.

Conclusions EMR is a safe and efficacious technique to treat large lesions in the UDT. These results are similar to those described in the literature.

References

A systematic literature search was carried out in three major data bases which are as follows: PubMed, Scopus, and Web of Science covering the period 2000 – 2018. The analysis was performed using the population intervention comparison outcome (PICCO) format: (P) patients undergoing EUS-FNA for diagnosis of gastric submucosal lesions; different immunohistochemical genetic biomarkers (I) and cytological analysis (C) were carried out on the samples obtained by EUS-FNA, the outcome (O) being the diagnostic accuracy of the biomarkers.

Results 20 articles were selected for the systematic review. Overall, the studies have reported the following biomarkers: c-kit (CD177), CD34, MIB-1, Ki67 index, DOG1, desmin, S-100, smooth muscle actin, gene mutation (KIT, PDGFRα). No pathogenic alterations were found in PIK3CA, BRAF, KRAS, NRAS, or FGFR3. GISTs are defined as (CD 117)-positive tumors, leiomyomas as desmin-positive and c-kit-negative tumors while schwannomas are S-100-positive and c-kit-negative tumors.

Conclusions The biomarkers must be further investigated in various combinations in order to select the optimal panel for clinical use.

eP202 COMPARISON OF TWO DIFFERENT CLEANSING PROTOCOLS FOR SMALL BOWEL CAPSULE ENDOSCOPY

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Aims: Introduction ESGE recently published a technical review on capsule endoscopy, where the recommendation is to use cleansing protocols before small bowel capsule endoscopy. Nevertheless, the optimal timing for taking purgatives is yet to be established.

Aim To compare two different cleansing strategies before capsule endoscopy.

Methods We have retrospectively reviewed small bowel capsule procedures performed in 2 different years. Group A used 2L of PEG the evening before capsule while group B used 1L of Moviprep before capsule ingestion.

Results Group A included 61 patients, 58 in group B. Demographic characteristics were similar in both groups, although there were more inpatients in group A (74.44% vs. 57.58%). Mean total transit time was 222.38 min for group A vs. 224.96 for group B (p = n.s). Adequate cleansing level was described in 93.33% of group A and 94.64% in group B (p = n.s). Regarding the percentage of complete procedures (capsule reaching the cecum), we found 90.26% in group A and 81.03% in group B (p = n.s).

Conclusions The use of 2L of PEG the day before compared to 1L of Moviprep the same day of capsule ingestion did not make any difference in cleansing level or total transit time. The number of complete procedures was slightly higher in the PEG group however the differences were not statistically significant. Our results suggest that the use of 1L of Moviprep before capsule ingestion is not inferior to 2L of PEG the day before. As low volume laxatives seem to be better tolerated, this protocol can be considered a good option for small bowel capsule endoscopy.

eP203 ENTEROSCOPY IN PATIENTS WITH MODIFIED GASTROINTESTINAL ANATOMY; EXPERIENCE OF THE NATIONAL INSTITUTE OF MEDICAL SCIENCES

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Aims Describe the diagnostic capacity, therapeutic performance and technical success of enteroscopy in patients with surgical changes of the gastrointestinal anatomy.

Methods Retrospective analysis of enteroscopies performed in the Department of Gastrointestinal Endoscopy of INCMSNZ in the period between December 2014 and June 2018. The number of procedures, procedure pathway, indications, depth of insertion, procedure time, diagnoses obtained, type of therapy used and the presence of complications of the procedures performed in patients with surgical changes of the gastrointestinal anatomy, who had not undergone pancreatic or biliary manipulation were evaluated.
Results A total of 315 enteroscopies were performed in the study period. Of the total of enteroscopies, 103 studies were performed in patients with abdominal surgeries, 69 (66%) were female, 83 of the studies corresponded to endoscopic retrograde cholangiopancreatography, so they were excluded, 20 studies corresponded to enteroscopies in patients with abdominal surgeries. 80% of antegrade and 20% retrograde studies were performed, the median depth of insertion was 102 cm, the median time of procedure was 64 minutes. Within the previous surgeries 15% of the patients corresponded to Roux-en-Y, 25% small bowel resections, 10% Whipple surgery, 30% hepato-jejunal anastomosis, 5% Billroth I, 15% Billroth II. The indications for the procedures were 45% gastrointestinal bleeding, 5% anemia, 40% anastomosis stenosis, 10% tumors. The findings were 20% stenosis, 20% ulcers, 20% active bleeding, 5% tumors, 5% erosions, 5% Dieulafoy, 15% obstruction due to adhesions, 10% normal studies. The therapeutic interventions were application of argon plasma 11%, clip placement 45%, dilatation 33%, jejunostomy in 11%. The diagnostic yield was 85%, the therapeutic yield 50% and the technical success was 90%.

Conclusions Enteroscopy is safe and effective in patients with abdominal surgeries, compared to patients with normal anatomy.

eP204 EVALUATION OF THE RELATIONSHIP BETWEEN HELICOBACTER PYLORI AND THE SMALL WHITE SPOT LESIONS OF THE DUODENUM

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Aims Most of the time we are unable to pinpoint the clear cause or clinical equivalent of the small white spot lesions of the duodenum which we often encounter during routine endoscopic evaluation and identify as duodenal lymphangiectasia (DL). We aimed to evaluate the frequency of these small white spot lesions in the duodenum and their relationship with Helicobacter pylori (H. pylori).

Methods In our study, endoscopic findings of 445 patients,231 of which were females and who underwent gastroscopy for complaints of dyspepsia in a period of 3 months, were evaluated via white light endoscopy by the same endoscopist. Biopsy samples from the duodenum and antrum in these patients whose endoscopic evaluation revealed were examined histologically and in terms of H.pylori.

Results Gastroscopic findings of 445 patients were evaluated. In the reports examined, white spot lesions in the duodenum were detected in 39 (8.8%) patients. Mean age of the patients with DL was found as 44.4 years, and that of those without DL was 47.2 years (p = 0.327). Of the patients with DL 19 were male and there was no statistically significant difference between the groups with and without DL in terms of gender (p = 0.958). Biopsy samplings were taken from 28 of the 39 patients that we reported as having DL, and these biopsy samplings revealed DL in 5 patients (17.8%) and edema in 11 patients (39.2%). While H.pylori was detected as positive in 19 patients (48.7%) in the evaluation of H.pylori in biopsy samplings, there was no statistical difference in terms of H.pylori positivity between the patients identified as positively DL pathologic as well and those in the negative group (p = 0.695).

Conclusions The incidence of DL was found as8.8% in routine gastroscopy, and the positivity of H.pylori in this group was detected as48.7%. The presence of H.pylori was not detected to pose a significant difference between the group of patients in whom DL was identified pathologically as well and the group where it was found to be negative.

eP205V A RHABDOID CAVITATED JEJUNAL ADENOCARCINOMA DIAGNOSED BY DOUBLE-BALLOON ASSISTED ENTEROSCOPY

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Introduction The rhabdoid phenotypic characteristic in digestive tumors is exceptional. In the jejunum, the primitive undifferentiated adenocarcinoma rarely grows up to invade other organs and appears as a cavitated mass.

Case report A 64 years-old patient with multifactorial anemia and transfusional requirements underwent a normal gastroscopy and colonoscopy. This last procedure confirmed a 2 cm flat lesion in the right colon and the histopathological analysis reported adenocarcinoma. Furthermore, a CT confirmed a mass dependent of small bowel and a PET-CT reported mesenteric implants with an extension on both adrenal glands and swollen lymph nodes. The biopsy of a peripheral adenopathy was an undifferentiated adenocarcinoma.

Thus, an oral double-balloon enteroscopy was performed. The procedure showed a large cavitated mass in jejunum consisting of a very irregular mucous membrane with proliferative, necrotic areas and diffuse as well as a ongoing mild-bleeding. Biopsies were taken. The endoscope could assess the mass intracavitary, in retroversion, and the ‘outcoming’ inside of the small bowel was visualized.

Finally, an undifferentiated rhabdoid carcinoma (vimentin, Ckae1-be3 *) was confirmed by the histopathological analysis, excluding GIST or neural origin. The CT ruled out pneumoperitoneum, showing peritoneal and pleural neo- plastic progression. Subsequent pathologic study of all samples of the various organs gave similar results. The patient was treated by chemotherapy.

Conclusions Small bowel undifferentiated rhabdoid carcinoma is rare, with a great aggressiveness and bad prognosis. At this location, there are only 11 cases described, almost the half of them in the jejunum. This case has affected other organs (including colon) with multorgan metastases. Endoscopically, a big and cavitated jejunal is also a rarity, only described in eccentrics GIST. There are no previous publications described this entity by flexible enteroscopy.

eP206 A TROUBLESOME ENTEROSCOPIC ATTEMPT TO REMOVE MIGRATED BILIARY STENTS IN THE SMALL BOWEL IN A PATIENT WITH ALTERED ANATOMY

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Aims The management of migrated stents is variable and is generally dictated by the site, type of stent, and anticipated likelihood of complications. Enteroscopy can be useful for stents migrated deeply in the small bowel, although very challenging especially in patients with altered anatomy.

Methods We describe a case of a patient undergoing single balloon enteroscopy (SBE) through a LAMS, placed by EUS-guided gastro-jejunoscopy in a Roux-en-Y reconstruction, in order to remove two migrated biliary stents.

Results In 2015 the patient underwent a left hepatectomy + bilo-jejunal Roux-en-Y anastomosis for infiltrating cholangiocarcinoma. After few months the disease recurred, followed by relapsing episodes of cholangitis, treated with percutaneous drainage (2 metal stents) and intra-luminal brachytherapy. Due to the complications of percutaneous approach (fever, subcutaneous abscess) an ERC through a EUS-guided gastro-jejunoscopy (Hot Axios stent, 15 × 10 mm) was performed, placing two metal stents
inside the previously placed ones. The patient was then asymptomatic, but after one month an abdominal X-ray showed migration in the small bowel of two biliary stents. An antegrade SBE (Olympus XSIF-180-JY) was then performed through the gastro-jejunal anastomosis, inside the LAMS: after 10 push-pull cycles the two stents were found, with their proximal flange deeply buried into the mucosa of the distal jejunum with granulation tissue. Several attempts of removal with rat-tooth grasping forceps and polypectomy snare, after injection of saline were unsuccessful. Considering the high risk of perforation related to removal, the small bowel patency, the absence of symptoms and the poor patient’s prognosis, the stents were left in situ and a close follow-up was scheduled. No procedural complications occurred.

Conclusions Enteroscopy is a safe and feasible procedure, even in cases of surgically altered anatomy. EUS-guided gastrointestinal anastomoses with LAMS may facilitate deep enteroscopic intubation for removing migrated stents. A careful balance of the risks and benefits of the procedure is mandatory.

**eP207 ROLE OF THE NOVEL INTRODUCED PAN-INTESTINAL CAPSULE ENDOSCOPY SYSTEM IN CELIAC DISEASE**

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Aims Capsule endoscopy has proven its efficacy in diagnosing villous atrophy and lymphoma in patients with celiac disease. Most recently, a novel capsule endoscopy system was introduced, allowing for visualization of the small and large bowel. Its role in patients with celiac disease has not been evaluated yet. Primary objective of the study was to evaluate the role of the novel pan-intestinal capsule system in patients with established celiac disease.

Methods Consecutive patients with established celiac disease (Marsh 0–3c) were included in this prospective single-center study. All patients received standard bowel preparation prior to the examination. Diagnostic yield, therapeutic impact and safety were analysed. In addition, concordance of capsule findings with histology and nutritional status in patients with symptomatic or refractory celiac disease were assessed.

Results Pan-intestinal capsule endoscopy was feasible in all cases and acceptable quality was also achieved in all cases following the standard bowel preparation. Villous atrophy was correctly identified in all patients with Marsh 3. Concordance of capsule findings with histology for villous atrophy showed a good correlation (kappa 0.45). No lymphomas were detected. Evaluation of the large bowel revealed diminutive polyps (size 4 mm in median) in 30% of patients.

Conclusions The novel introduced pan-intestinal capsule endoscopy system shows a fair correlation with histology and nutritional status in patients with symptomatic or refractory celiac disease. Of note, the capsule revealed colon polyps in up to 30% of patients. Therefore, the novel pan-intestinal capsule endoscopy system should be considered for patients with celiac disease and an indication for small-bowel endoscopy.

**eP208V DUODENAL NEUROENDOCRINE TUMOUR RESECTION WITH A NEW DUODENAL FULL THICKNESS RESECTION DEVICE**

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Introduction and aims Most well-differentiated, non-functional duodenal NETs limited to the mucosa/submucosa can be treated effectively with endoscopic resection. Full-thickness resection device (FTRD; Ovesco Endoscopy) enables transmural resection of suitable lesions with a fast minimally invasive technique. Colonic FTRD was used for duodenal lesions as an “of-label” indication with good clinical outcomes and a complications’ rate compared to duodenal endoscopic mucosal resection (EMR). A duodenal FTRD (d-FTRD) with smaller diameter (19.5 mm vs. 21 mm), balloon assisted insertion and less clip interdental space was developed allowing easier upper esophageal sphincter (UES) passage and minimizing bleeding risk.

Methods We describe a 74-year-old male with a 10 mm post-pyloric bulbar submucosal lesion with biopsies showing a well-differentiated NET. Endoscopic ultrasonography (EUS) showed a submucosal lesion. EUS and 68-Ga-DOTA-NOC PET/CT displayed no lymph node involvement or distant metastases. An attempt to resect with band ligation EMR failed because of an absence of aspiration into the cap.

Transmural resection with the d-FTRD was scheduled in the operating room under general anaesthesia. Lesion borders were marked with APC. UES dilation was performed with Savary-Gilliard bougie dilator (15–18 mm) allowing d-FTRD insertion.

A paediatric colonoscope was then advanced to the duodenum with the d-FTRD attached. Traction of the lesion to the cap with the grasper and aspiration was done, followed by over-the-scope clip release (OTSC). The pseudopolyp produced by the OTSC was resected with a 15 mm diathermic snare.

Results There were no immediate or delayed complications. Histology showed a NET G1 (< 3 mitosis/10 high power field, Ki67 < 3%) with infiltration of the muscularis propria. There was no lymphatic or perineural invasion. The lateral margin of the lesion in the pyloric side was coincident to the resection margin.

Conclusions d-FTRD is a new device that should be considered for the resection of subepithelial or non-lifting epithelial duodenal lesions.

**eP209V A GIANT ILEAL PSEUDOPOLYP IN CROHN’S DISEASE RESECTED BY DOUBLE-BALLOON ENTEROSCOPY**

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Aims Giant pseudopolyps (> 1.5 cm) are unusual in Crohn’s Disease (CD), and oftenly cause intestinal obstruction among other complications that may require surgical management. Endoscopic therapy could be an alternative in such circumstances. We describe a case report of a giant pseudopolyp treated by enteroscopy.

Case report A 63-year-old patient diagnosed with CD presented unexplained iron-deficiency anemia and subocclusive symptoms. Therefore, capsule endoscopy was performed, identifying an ulcerated ileal mass with leafy hypertrophic villi near a typical substenosis of CD. By Double-Balloon Enteroscopy (DBE) with 3.2 mm working channel and CO2 insufflation, a 4 cm ulcerated mass was identified prolapsing through the substenosis. Diluted adrenaline (1:10000) was injected at its base, and lastly, the lesion was resected with a snare and removed using fishnet basket. Histology was consistent with the diagnosis of a CD associated pseudolyp. The patient now remains asymptomatic.

Conclusions Giant pseudopolyps are uncommon in the small bowel. When symptomatic, they are usually diagnosed and treated by surgery. Resection by
DBE with large working channel can be a feasible and safe approach in some patients.

**eP210  THE MANAGEMENT OF GASTRIC MALT LYMPHOMA**

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**Aims**  
Helicobacter pylori (H. pylori) eradication is an effective treatment in H. pylori-positive mucosa-associated lymphoid tissue (MALT) lymphoma. However, the complete remission (CR) rates after H. pylori eradication in H. pylori-negative MALT lymphoma is very low and the treatment strategy remains controversial. We investigated the effectiveness of each treatment option for H. pylori-negative MALT lymphoma and H. pylori-positive MALT lymphoma with treatment failure after H. pylori eradication.

**Methods**  
We conducted retrospective single center study using medical records of patients who were diagnosed with gastric MALT lymphoma in Yeungnam University Medical Center between January 2005 and December 2016. Response to each treatment options and relapse after CR were evaluated by pathologic base using endoscopic biopsy.

**Results**  
Of the 68 patients, 50 patients were enrolled. Mean ages were 55.4 ± 11.7 years and mean follow-up periods were 42.5 ± 31.0 months (range: 3 – 133.6). H. pylori infection was detected in 42 patients (84.0%). Of these H. pylori-positive MALT lymphoma, 36 patients (81.7%) were treated with H. pylori eradication as primary treatment and the CR rates after H. pylori eradication was 72.2% (n = 26). Patients without CR after H. pylori eradication (n = 10, 27.8%) were received radiotherapy as secondary treatment. All of them were shown CR and no one had relapse after radiotherapy. 2 patients (4.8%) of H. pylori-positive MALT lymphoma were treated with radiotherapy as primary manner and all reached CR. 1 of them (50%) had relapse after treatment, but another CR had been achieved after secondary radiotherapy. All patients with H. pylori-negative MALT lymphoma (n = 8, 16.0%) were treated with radiotherapy as primary treatment. The CR rates after radiotherapy was 100% and no one had had relapse after radiotherapy.

**Conclusions**  
Although H. pylori eradication is effective treatment in H. pylori-positive MALT lymphoma, radiotherapy may be worthwhile treatment option in H. pylori-negative MALT lymphoma and H. pylori-positive MALT lymphoma as 2ndary treatment after H. pylori eradication.

**eP211 CLINICAL SIGNIFICANCE OF REGIONAL LYMPH NODE ENLARGEMENT IN PATIENTS WITH EGC WITHIN THE EXPANDED CRITERIA FOR ESD**

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**Aims**  
Lymph node (LN) metastasis is negligible in early gastric cancer (EGC) within expanded criteria for endoscopic submucosal dissection (ESD). However, regional lymph nodes in abdominal CT scans are sometimes enlarged in patients with EGC within the expanded criteria for endoscopic submucosal dissection (ESD). In this study, we investigated the clinical significance of regional lymph node enlargement on abdominal CT scan in patients with EGC within the expanded criteria for ESD.

**Methods**  
From December 2010 to April 2015, among 301 patients with EGC within the ESD expanded criteria, 47 patients with regional lymph node enlargement shown by abdominal CT scan were prospectively enrolled. We performed surgical resection or periodic follow-up with abdominal CT scans and upper endoscopy every 6 months to evaluate whether the enlarged lymph nodes are due to metastasis or a reactive change.

**Results**  
The mean age of the 47 patients (36 males, 11 female) was 65.1 years. The enlarged lymph nodes were usually single (26/47, 44.6%) and sized as follows: 7 nodes were ≤ 5 mm, 23 were 6 – 10 mm, and 17 were ≥ 10 mm. Four of the 47 patients initially underwent surgical resection, and 8 patients underwent surgical resection after ESD. However, there was no lymph node metastasis in surgical specimens. Thirty-five patients received ESD and periodically followed up at a median duration of 57 months (range: 36 – 88 month). The enlarged lymph node disappeared in 12 of 35 patients, decreased in 9 patients and remained the same size in 13 patients, and increased in 1 patient.

**Conclusions**  
Regional lymph node enlargement on abdominal CT scan in patients within expanded criteria for ESD of EGC may be not due to metastasis but a reactive change.
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