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Percutaneous Management of Benign Biliary Enteric Anastomotic Strictures after Iatrogenic Bile Duct Injuries

Mustafa Belal Hafeez Chaudhry,
Nauman Alqamari¹, Raza Sayani,
Rana Shoaib Hamid², Rana Shoaib Hamid

The Aga Khan University, ¹Dow Institute of Radiology, Karachi, Pakistan,

²Sultan Qaboos University Hospital, Muscat, Oman.

E-mail: belal.ibnehafeez@gmail.com

Background: To assess the technical success, complications and reintervention rate of percutaneous transhepatic balloon dilatation (PTBD) of biliary enteric anastomotic strictures (BES). **Methods:** A retrospective review of patients who underwent PTBD for benign resistant BES, were previously treated for iatrogenic bile duct injuries, from December 2004 to January 2016 was performed. Diagnostic transhepatic cholangiogram was performed to assess level of obstruction. Strictures were dilated using 8-12 mm diameter balloons followed by placement of 8-10 Fr internal-external drainage catheters, which're removed after 3-5 days post-PTBD cholangiogram. Follow up by clinical assessment, liver function tests and ultrasound was done. Fischer exact test was used to determine if there was a significant association between PTBD sessions and recurrent strictures. **Results:** In total, 37 patients underwent PTBD including 10 (27%) males and 27 (73%) females. Mean age was 41.3 yrs. (range 23-70 yrs.). Out of these, 29 (78.4%) were treated with choledochojunostomy and 8 (21.6%) with hepaticojunostomy. 100% success was achieved in all the PTBD sessions. 19 (51.3%) patients were treated with a single PTBD session. Mean follow-up time was 36 months (Range 1-75 months). 2 (5.4%) patients were lost to follow up after first session of PTBD. 18 (48.7%) patients needed reintervention, out of these, 11 (29.7%) were symptom free after second session on 3 year follow up, 3 (8.1%) were symptom free after the third session of PTBD. No significant difference in risk of recurrent strictures after 1st and 2nd PTBD sessions [18 (48.7%) vs. 7 (39%); $P < 0.5716$]. In 4 (10.9%) patients, the symptoms persisted and the stricture recurred even after third session and were treated by placing metallic stent. In total, 3 (8.1%) patients got complicated with the stone formation; in 2 (5.4%) patients it was successfully removed percutaneously and in 1 (2.7%) percutaneous attempt failed followed by surgical removal. **Conclusions:** PTBD is a safe and useful treatment option for BES for long-term symptoms free time-period. However, there is no significant difference in developing recurrent BES after PTBD sessions. Few patients with resistant strictures might require stent placement.

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Articular Cartilage Protection with Temperature Monitoring During Percutaneous Tumor Thermal Ablation: Novel Technique

Salem Bauones^{1,2}, Julien Garnon²,
Georgia Tsoumakidou², Roberto L Cazzato²,
Afshin Gangi²

¹King Fahd Medical City, Riyadh, Saudi Arabia, ²University Hospitals of Strasbourg, Strasbourg, France. E-mail: sa.bauones@gmail.com

Background: Objective: To review our initial experience in acetabular cartilage protection from thermal injury with temperature monitoring during percutaneous image-guided tumor thermal ablation. **Methods:** Between June 2015 and May 2016, three consecutive oncologic patients (mean age 58 years; range 48-67 years) with acetabular bone metastasis underwent percutaneous image-guided thermal ablation procedures along with hip joint cartilage thermal monitoring. Owing to the close proximity of the metastatic lesion to the acetabular articular cartilage, a thermocouple was placed under CT and fluoroscopic guidance, immediately near to the acetabular roof and next to the ablation zone in order to measure the reached local temperature near to the cartilage. Stand-alone thermal ablation (n = 1) and Combined thermal ablation with cementoplasty (n = 2) had been performed to optimize local palliation or disease control. Follow-up was undertaken every few weeks. Clinical and radiological outcomes at follow-up were assessed. **Results:** Three acetabular metastases were treated with thermal ablation and temperature monitoring of the acetabular articular cartilage during the ablation procedure. Mean size of lesions was 1.6 cm (range 1.5-2 cm). Technical success was achieved in all cases (100%), without complications. No hip cartilage damage on MRI. Good palliation and local disease control in two cases. One case showed local recurrence and distant progression of his metastatic disease after 27 weeks of follow-up. **Conclusions:** Temperature monitoring of the articular cartilage during percutaneous image-guided thermal ablation appears technically feasible with good short-term efficacy in this complex patient subset. Further studies are warranted to confirm these promising initial results.

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The Efficiency of Transhepatic Biliary Decompression in Patients with Failed Endoscopic Therapy

Elie Lteif, Abbas Chamsuddin, Raja Ashou

University of Balamand, Saint George University Medical Center, Beirut, Lebanon. E-mail: achamsuddin@beirutclis.com

Background: To evaluate the efficiency, indications, outcome, complications and safety of Percutaneous Transhepatic Biliary Decompression (PTBD) in patients with benign and malignant biliary obstruction and failed endoscopic therapy. We report a single-center experience of percutaneous biliary drainage in patients with biliary obstruction salvaged with PTBD at St. Georges Hospital University Medical Center (SGHUMC). **Methods:** This study was approved by our institutional review board. Over a period of 18 months (January 2015-June 2016), Endoscopic Retrograde Cholangiopancreatography (ERCP) was performed on 44 patients with biliary obstruction. Of these, 39 patients had malignant obstruction, and 4 patients had benign stone-related obstruction. Failure to properly intubate the ampulla and decompress the biliary tree through the retrograde endoscopic approach by experienced gastroenterologists occurred in 14 patients. These 14 patients were then referred for PTBD. Insertion of biliary drains was performed under fluoroscopic, ultrasound or CT scan guidance by interventional radiologists using Acustik sets and biliary drainage catheters ranging from 10-22 French calibers. **Results:** Drainage and decompression of the biliary system was successful in all 14 patients. 12 patients had

malignant obstruction, 1 patient had occluded pre-placed metallic stent by debris and pus and one patient had a stenotic bilioenteric anastomosis with inadequate history of previous surgery prior to ERCP. Rendez-vous technique was used in 2 patients for eventual placement of metallic stents. Clinical improvement evidenced with dropping bilirubin levels, resolving jaundice and sepsis-related symptoms were seen in all patients. Two-step external drainage with later conversion to internal metallic-stent drainage was performed in 2 patients. Single-step internal-external drainage was performed in 12 patients. No major complications were reported. Minor complications included fever, self-limiting intra-catheter bleed, skin infection, transitional catheter blockage and partial catheter dislodgment. **Conclusions:** PTBD remains an efficient method in the treatment of biliary obstruction in patients with failed retrograde endoscopic therapy. Our small series shows that PTBD remains the final resort in patients with failed endoscopic therapy in addition to its proven role as an initial approach for biliary decompression.

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To Compare the Efficacy and Complications of 16 Gauge and 18 Gauge Trucut Biopsy Needle in Ultrasound Guided Percutaneous Liver Biopsies

Sadia Rashid, Junaid Iqbal

*Dow University of Health Sciences, Karachi, Pakistan.
E-mail: dr_sadiarashid@yahoo.com*

Background: Ultrasound guided percutaneous liver biopsy is the gold standard for characterization of liver lesions and determination of diffuse liver disease and liver fibrosis. It is an easy but invasive method which sometimes may cause severe complications. **Methods:** This is a prospective study conducted from January 2016 to December 2016. A total of 426 patients were included in the study, out of which 244 (57.3%) were males while 182 (42.7%) were females. Mean age of the patients was 54.62 ± 13.25 years. 202 (47.41%) patients underwent liver biopsy by 16 gauge trucut biopsy needle while 224 (52.58%) patients had biopsies using 18 gauge needle. **Results:** Overall, mild pain was found in 86 (20.2%) patients, severe pain in 36 (8.5%) patients, vasovagal in 13 (3.1%) patients, local hematoma in 12 (2.8%), severe hemorrhage in 3 (0.7%), pneumothorax in 2 (0.5%) patients while 20 (4.7%) samples were inadequate. Comparison of complications in both groups showed that except inadequate specimen and severe pain, insignificant association of complications was observed in both group. Number of inadequate specimen was significantly higher in patients who underwent biopsy by 18 gauge trucut needle as compared to the patients who underwent biopsy by 16 gauge needle (P value 0.001). Severe pain was significantly higher in patients who underwent biopsy by 16 gauge needle as compared to 18 gauge needle (P value 0.016). **Conclusions:** Ultrasound guided percutaneous liver biopsy using either 16 or 18 gauge trucut needle is safe and effective method to characterize liver lesions with very low rate of complications. However 16 gauge needle should be preferred as the inadequacy of specimen in our study was higher for 18 gauge needle.

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Percutaneous Cryoablation of Symptomatic Abdominal Wall Endometriosis: Mid-Term Outcomes and Comparison with Surgery Alone in a Single Institution

Francois H. Cornelis, Julie Maillot¹, Jean Luc Brun¹, Nicolas Grenier¹

*Tenon Hospital, Paris, ¹Pellegrin Hospital, Bordeaux, France.
E-mail: francoiscornelis@hotmail.com*

Background: To compare the outcomes of percutaneous image-guided cryoablation of symptomatic abdominal wall endometriosis (AWE) versus surgery alone. **Methods:** From 2004 to 2016, cryoablation or surgery alone was performed for AWE in a single institution in 7 (mean age: 36.1 y) and 13 (mean age: 31.9 y) patients, respectively. Fifteen lesions were treated by cryoablation (mean size: 2.3 cm; range 0.5-7 cm) and 16 by surgery (2.5 cm; 1.1-3.4 cm). Tolerance, efficacy and patient and procedural characteristics were compared. **Results:** Median follow-up was 22.5 (range: 6-42) months after cryoablation and 54 (14-149) after surgery. The median procedure and hospitalization durations were 41.5 minutes (24-66) and 0.8 days (0-1) after cryoablation, and 73.5 minutes (35-160) and 2.8 days (1-12 days) after surgery (both $P = 0.01$). Fifteen patients had general and 5 had local anesthesia (3 cryoablations and 2 surgery). Three patients (23.1%) had severe complications and 9 esthetic sequels (69.2%) after surgery, none after cryoablation ($P = 0.05$). The median 12 and 24-month symptom free-survival rates were 100% and 66.7% [95%CI: 5.4; 94.5] after cryoablation and 92% [55.3; 98.9] after surgery at both time points ($P = 0.45$). **Conclusions:** Cryoablation presents similar effectiveness to surgery alone for local control of AWE while reducing hospitalization duration and complications.

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Efficacy of Trans-arterial Chemoembolization in Combination with Percutaneous Ethanol Injection for Hepatocellular Carcinoma

Muhammad Shozab Ahmed, Atif Rana, Maham Jehangir

*Shifa International Hospital, Islamabad, Pakistan.
E-mail: muhammedshozab@gmail.com*

Background: To evaluate combined efficacy of trans-arterial chemoembolization (TACE) using drug eluting beads, Hepasphere (Merit medical, USA), with percutaneous ethanol injection (PEI) for hepatocellular carcinoma (HCC) a retrospective review was conducted. **Methods:** During January 2015 to January 2017, 34 patients with hepatocellular carcinoma underwent combined therapies (TACE + PEI). Out of these two patient's were excluded because lipid was used. The tumour response at 3 months, 6 months, 12 months and 24 months was evaluated using a pre-defined criterion. **Results:** Most of the tumours were located in right lobe. The tumour size ranged from 1-10 cm with mean size of 4.2 cm. The average amount of alcohol used was 12 ml. The tumour response rates in the combined TACE + PEI showed more than 90% reduction in arterialisation at 3 and