localization of 42 pulmonary nodules (mean size, 7.3 mm; range, 4-18 mm). A 7 cm platinum micro coil was inserted into pulmonary nodules under CT guidance using a 21-gauge chiba needle. The technical details, surgical and pathologic findings associated with micro coil localizations were retrospectively evaluated. **Result(s):** All nodules were localized by CT guided micro coil with 100% technical success with mean time 13.4 minutes (range 8- 26 minutes). 6 patients developed Mild parenchyma lung hemorrhage along with needle tract and 7 patient developed mild pneumothorax all are asymptomatic and no intervention needed. 3 patients developed moderate pneumothorax for which needle aspiration was performed but not chest tube was inserted. No other complication occurred. All micro coils were identified during the surgery except one which was dislodged and attached to chest wall (41 out of 42 micro coils) 97.6 % clinical success and all nodule were surgically resected. Pathology revealed 28 metastatic pulmonary nodules, 1 primary adenocarcinoma-in-situ and 13 benign pulmonary nodules. Micro coils did not affect the histopathology examination. **Conclusion(s):** CT-guided micro coil localization is an effective and safe pre-operative localization procedure prior to VATS, enabling accurate resection and diagnosis of pulmonary nodules.

OC2.11

Re-Establishing Patency of Occluded Metallic Biliary Stents by Endobiliary-Radiofrequency Ablation Technique

Shorav Bhatnagar, Alka Goyal¹

QRG Central Hospital, ¹AIIMS, New Delhi, India.

E-mail: drshorav@yahoo.com

Background: Biliary drainage with the use of metallic biliary stents (MBS) is a well-accepted palliative therapy for patients with unresectable malignant hilar obstruction. These stents often lose their patency over a period of 6-9 months secondary to tumor ingrowth or overgrowth, epithelial hyperplasia. Occlusion caused by sludge deposition or clot or stone formation. Limited treatment options are available for such a condition. Endobiliary radiofrequency ablation (RFA) has been shown to be an effective modality in the treatment of malignant biliary obstruction Here we present our experience with endobiliary RFA technique for restoring the patency of occluded MBS. **Method(s):** Patients were taken with previously placed MBS for malignant aetiology, presented with rising serum bilirubin and signs of cholangitis secondary to occlusion of MBS. Percutaneous trans-hepatic biliary drainage was achieved in all cases. After negotiating guide-wire across the stent, biliary drainage was established. After treating cholangitis, endobiliary-RFA was performed. Post-procedure cholangiogram was performed to ascertain the patency. Periodic clinical follow-up was scheduled for 6-months or till their survival. **Result(s):** The patients were followed up clinically and with USG to a minimum of 6 months or till their survival. The presence of pneumobilia on USG along with normal LFT were considered as the signs of stent patency. All patients showed restoration of patency on cholangiography examination performed on the following day of RFA (restored diameter 6-8 mm). The mean duration of stent patency after the first session of RFA was 3.9 months (range 2-7 months) which was comparable to the primary patency of these stents (4.8 months). This extended period of stent patency ensured administration of additional cycles of chemotherapy in these patients coupled with objective

improvement in the quality of life. **Conclusion(s):** Our experience suggests that endobiliary-RFA with balloon-sweep maneuver can be a safe and useful technique for re-establishing the patency of occluded MBS. Reopened stent with good short term patency offers medical oncologist a chance of administering additional chemotherapy which may improve patient's survival.

OC3.1

Road to Interventional Radiology: Introducing Interventional Radiology to the Global Community

Fabian Laage Gaupp, Ivan Rukundo¹, Azza Naif¹, Erick Mbuguje¹, David Prologo², Andrew Kesselman³, Douglas Silin, Frank Minja

Yale University, New Haven, ²Emory University, Atlanta, ³Cornell University, New York, USA, ¹Muhimbili National Hospital, Dar es Salaam, Tanzania.

E-mail: fabian.laage-gaupp@yale.edu

Background: According to the WHO four billion people around the world lack access to medical imaging, and even more lack access to Interventional Radiology (IR). We performed an assessment of the largest tertiary referral center and teaching hospital in Tanzania, a nation of over 50 million people. This demonstrated that there is currently not a single interventional radiologist in the entire nation, but all relevant imaging modalities, including Ultrasound, CT, and fluoroscopy, are available. **Method(s):** To address the acute shortage of IR in Tanzania, we started training Tanzanian Radiology residents in IR. Over the course of three years (2018-2021), 30 IR teams, each consisting of an IR faculty member, a nurse, and a technologist, travel to Tanzania in two-week blocks with the goal of training three Tanzanian residents per year to be fully competent in general IR and basic neurointerventional procedures. **Result(s):** During the initial two trips in October and November 2018, a total of 37 interventions were performed on 31 patients. Technical success was achieved in 30/31 initial procedures (97%). There were no major complications. Specifically, the following procedures were performed: 15 Core needle biopsies, 6 nephrostomy tube placements, 6 drain checks/internationalizations/exchanges, 4 biliary drain placements, 3 abscess drain placements, 2 cyst aspirations, and a cholecystostomy placement. All procedures were logged via Google forms and follow-up phone calls are performed at one and three months post-procedure. Preliminary follow-up data demonstrates that >90% of patients report no subsequent complications and are satisfied with the procedure and related care. **Conclusion(s):** This early experience demonstrates that IR practices can be established in the resource limited setting. There is potential for expansion of this program to other sites where IR can add great value, in many cases decreasing morbidity and improving patient satisfaction.

OC3.2

Percutaneous Obliteration of Urinary Leakage after Partial Nephrectomy Using Coils and N-butyl-cyanoacrylate

Ji Hoon Shin, Yasir M. Nouri¹, Hee Ho Chu

Asan Medical Center, Seoul, South Korea, ¹King Fahad Hospital, Jeddah, Saudi Arabia.

E-mail: jhshin@amc.seoul.kr

Background: Urinary leakage is uniquely associated with partial nephrectomy (PN) and remains a challenging complication to treat. Recently, minimally invasive percutaneous approach to obliterate the urinary leakage after PN has been developed. **Method(s):** Data of 10 consecutive patients who underwent percutaneous obliteration of urinary leakage after PN using coil and NBCA were reviewed. A urinary fistulography was performed via the drainage catheter previously placed in the urinoma, and a pyelography was performed to locate the fistulous tract. If the fistulous tract was clearly visualized, super-selective embolization of the fistulous tract with coils and urinoma cavity sealing with NBCA were performed. In cases where the fistulous tract could not be clearly visualized, only urinoma cavity sealing was performed. Technical success was defined as complete occlusion of visualized urinary fistulous tract and followed urinoma cavity sealing. Clinical success was defined as control of current urinary leakage and either disappearance or decrease in size of the urinoma on follow-up computed tomography (CT). **Result(s):** In seven (70%) patients who showed obvious urinary fistulous tract, coil embolization of urinary fistulous tract and followed by sealing of urinoma cavity with NBCA was performed. Only sealing of urinoma cavity with NBCA was performed in three patients (30%) who could not visualize the distinct fistulous tract. All of the patients showed gradually decrease in size or complete disappearance of urinoma on follow-up CT without further symptom and sign of urinary leakage during the follow-up period (mean, 44.6 weeks; range, 11-117 weeks). **Conclusion(s):** Percutaneous obliteration of urinary leakage after PN using coils and NBCA is safe and effective. On the basis of the urinary fistulography, assessed by drainage catheter in the urinoma and pyelography, super-selective embolization of fistulous tract with coil and followed sealing of urinoma cavity with NBCA or only sealing of urinoma cavity offer complete occlusion of the urinary leakage.

OC3.3

Combination of Preoperative Ultrasonographic Mapping and Radio-Guided Occult Lesion Localization in Patients with Locally Recurrent/Persistent Papillary Thyroid Cancer a Pilot Study

Amr Maged Elsaadany, Mohamed Alrowaily¹

*Sandwell and West Birmingham Hospital, Birmingham, UK, ²King Faisal Specialist Hospital and Research Center, Riyadh, Saudi Arabia.
E-mail: dramrmaged@hotmail.com*

Background: Better follow-up of patients with thyroid cancer and more sensitive detection leads to detection of recurrences in the neck. Our aim is to explore the feasibility of (ROLL) for radio-iodine negative cervical recurrences from thyroid cancer in patients with previously operated neck compartments to improve the surgical success and reduce the complication rates. **Method(s):** Pre and postoperative thyroglobulin levels and neck US were performed. The results of fine needle aspiration (FNA) cytopathology were available. In the morning of surgery, biopsy proven recurrent/persistent tumoral lesions were injected with Tc-99m labeled macro-aggregated albumin under US guidance. Thyroid bed exploration was carried out based on the location of lesions with the guidance of intra-operative gamma probe and neck map. The lesions showing high count rates were

resected and labeled separately for histopathologic study and to ascertain removal of the radiolabeled lesions. **Result(s):** Total of 13 patients (8 females and 5 males) were included. Technical success rate was achieved in all patients with successful surgical removal of the lesions. All the lesions removed were positive on histopathologic assessment. Significant drop of the TG levels was achieved in all patients. **Conclusion(s):** The ROLL technique is feasible in patients with loco-regional recurrence particularly useful in patients already submitted to cervical dissections and/or with small lesions located in surgically difficult sites. It can therefore have clinical role in the management of cervical recurrences.

OC3.4

Efficacy and Safety of Radiofrequency Ablation for Benign Thyroid Nodules: Initial Clinical Experience in Middle East Area

Kwang Hwi Lee, Hong Dae Kim, Eui Yong Jeon

*Sheikh Khalifa Specialty Hospital, Ras Al Khaimah, UAE.
E-mail: lkh770429@naver.com*

Background: Radiofrequency ablation (RFA) is a minimal invasive treatment modality for variable tumors of liver, kidney, bone etc. RFA has been also used to treat benign thyroid nodules to improve patient's symptoms. However, thyroid RFA has been seldom introduced in middle east area. **Method(s):** A total 58 benign thyroid nodules in 45 patients (M:F= 8:37, mean age: 39 years $\pm$ 12.2) underwent ultrasound (US) guided percutaneous RFA using an internally cooled electrode. We investigated clinical symptom, cosmetic score (4-point scale), composition, thyroid volume. We assessed complications and volume reduction rate (VRR) in follow-up (median: 10 months). **Result(s):** Clinical manifestation was palpable mass (n= 10), discomfort (n=15), dysphagia (n= 16), voice change (n= 1), dyspnea (n=3). Cosmetic score were 3 (n= 25, cosmetic problem on swallowing only) and 4 (n= 20, readily detected cosmetic problem). Composition was predominantly cystic (n= 3), predominantly solid (n= 6), solid (n= 49). Mean initial thyroid volume was 18.13 ml $\pm$ 61.5 (range: 1.12 ~ 208.6). After RFA, mean thyroid volume was 6.07 ml $\pm$ 15.4 (0.16 ~ 75.3). Major complications were not detected. Perithyroid hemorrhage occurred during procedure in 3 patients, and it was spontaneously resolved in a month. All patients reported improvement of their symptoms after RFA. Mean VRR was 70.2% $\pm$ 25.7 (2.6 – 98.8). **Conclusion(s):** RFA is an effective and safe nonsurgical therapeutic method to manage benign thyroid nodules, and it can be widely spread in Middle East area.

OC3.5

Hostile Necks Management: Saudi Experience with Heli-Fx Endoanchors

Samer Koussayer

*King Faisal Specialist Hospital and Research Center, Riyadh, Saudi Arabia.
E-mail: sakous@msn.com*

Background: Most neck challenges comes from short neck which is consider the main exclusion from standard EVAR treatment. ChEVAR and fEVAR are the most common solutions