

ity-related (grade 3/4 thrombocytopenia after 25% of the procedures); less frequent was significant hepatotoxicity (grade 3/4 increased aspartate transaminase (AST) and alanine transaminase (ALT) after 8% and 7% of the interventions, respectively). Cardiovascular events comprised four cases of ischemic stroke (3%) and one case of pulmonary embolism (1%).

**Conclusion:** PHP is a safe and effective palliative treatment option for liver-dominant metastatic uveal melanoma. Serious AEs and complications are rare but require a careful patient selection.

#### **Percutaneous image-guided radio-ablation of HCC using BAT-90 – initial results of ongoing first-in-man clinical trial**

Malkhaz Mizandari, Tamta Azrumelashvili, Pier Luigi Carriero, Mariam Tevzadze, Betty Polikar, Gianluca De Danieli, Antonio Amato

**Background:** TARE with 90Y has shown high effectiveness in HCC treatment. It is reasonable to assume that the direct, image-guided, intra-tumoral injection of an appropriate activity of 90Y should have similar efficacy and, possibly, better safety/tolerability results.

**Purpose/Objective:** To present the initial results of HCC radio-ablation using BAT-90, a novel medical device composed of 90Y microspheres embedded in a bio-compatible glue, in a prospective First-in-Human study.

**Materials & Methods:** 5 patients with morphologically proven unresectable HCC underwent percutaneous injection of BAT 90 into tumors between 2 to 5 cm diameter. Pre-procedure imaging included US, MRI and FDG PET-CT. Intra-tumoral injection by a dedicated, coaxial dual-lumen catheter was performed under Real-Time Ultrasound or step-by-step CT guidance via the administration of a pre-determined amount of BAT-90 [injected activity range: 78.56 MBq to 115.26 MBq]. A 25-50-25% or 20-60-20% injection of the whole BAT-90 volume has been administered in the nodule deepest segment, middle point and superficial segment, respectively in the first 3 patients; in the remaining 2 patients the whole BAT-90 volume has been injected in the center of the tumoral mass. Post-procedure imaging included: 90Y PET-CT (within the first 24 hours), FDG PET (after 3 weeks), DW-MRI (after 3 weeks, as well as after the 56th and 90th day).

**Results:** BAT-90 accurate delivery has been achieved as shown by post-procedure imaging studies. Tumor necrosis has been confirmed in the areas of BAT-90 deposition by DW-MRI and other imaging tests performed, documenting a complete ablation of the directly exposed target lesions. No procedure-related adverse events have been reported, all patients tolerated the injection of BAT-90 well.

**Conclusion:** BAT-90 injection into HCC is a safe, feasible and effective procedure; compared to TARE, it does not have contraindications and is a promising cost-saving technique.

#### **Percutaneous lung tumor ablation: a primer**

Brenna Wylie, Taymoor Asghar, Nassim Merrachi, Elizabeth David

**Objective:** To describe the indications for percutaneous lung tumor ablation. To describe equipment and outline different techniques. To share the literature and evidence on outcomes.

**Background:** Percutaneous lung tumor ablation has been increasingly and effectively been used in small lung tumors. It is still not as widely available in comparison to more established treatments such as surgery, chemotherapy or stereotactic body radiation therapy but is particularly useful in non-surgical candidates or those with existing lung disease and radiation pneumonitis.

**Outlines:** We will present the existing guidelines and literature on percutaneous lung tumor ablation. We will demonstrate illustrative cases from our institution of different techniques and challenging cases.

Percutaneous lung tumor ablation has been shown in the literature to be particularly effective for smaller tumors (<3 cm) for both primary and metastatic lesions. It has been shown to be well tolerated in those with pre-existing lung disease or comorbidities which preclude other treatment options. A variety of ablation modalities are available such as microwave, radiofrequency and cryoablation performed with CT guidance. In sensitive areas, adjunctive maneuvers such as iatrogenic pneumothorax or pleural effusions can be used to protect surrounding structures or the lesion can be tethered away from critical structures using stick-freeze function.

**Conclusion:** Percutaneous lung tumor ablation is a good alternative to more established treatments, particularly for smaller tumors in non-surgical patients. Various ablation modalities can be used and most lesions are treatable with adjunctive maneuvers.

#### **Percutaneous management of inadvertent subclavian artery central line insertion using angioseal vascular closure device**

Abdulaziz Almat'hami

**Objective:** Inadvertent arterial puncture during central line placement is not an uncommon complication that carries dangerous and fatal consequences. We report a case in which the patient's condition requires the use of a vascular closure device over the other surgical and endovascular options.

**Background:** Ninety years old lady known as diabetic and hypertensive, presented to the emergency room with signs and symptoms of septic shock on top of pneumonia and urinary tract infection. The primary assessment mandates central venous access for rapid Intravenous hydration and antibiotics treatment. A 7-Fr Triple-lumen central line was inserted inadvertently into the Right Subclavian Artery, utilizing a Right Infra-Clavicular approach, and using the anatomical landmarks technique. The central line was secured in place and labeled (not for use). A few hours later, the patient developed a Right posterior cerebral artery territory stroke. A consensus meeting was arranged between vascular surgery and interventional radiology. Given the general patient's condition, and after reviewing the available options, the decision was made to use the percutaneous closure device. A backup femoral access was made for possible balloon tamponade/stenting. This plan was achieved successfully with no complications using 6-FR Angioseal®. The patient completed her hospital course and was discharged three weeks later.

**Outlines:** Arterial misplacement of the central line catheter is a well-known possibility mainly if performed without image guidance. Complications could include Hematoma, Pneumo-or-Hemothorax, Pseudoaneurysm, Arteriovenous fistula, and Stroke. The patient's condition, the low arterial entry point, and proximity to the dominant Right Subclavian Artery takeoff made the off-label use of Angioseal® here an attractive and minimally invasive solution.

**Conclusion:** The off-label use of Angioseal® provided a simple and successful measure to achieve hemostasis for the inadvertent Right Subclavian Artery puncture.

#### **Percutaneous management of inoperable pancreatic cancer by Image guided biliary and pancreatic duct recanalization**

Malkhaz Mizandari, Tamta Azrumelashvili, Merab Kiladze, Nagy Habib

**Background:** The cancer of the head of pancreas induced pancreatic duct stricture and upstream duct dilation may lead to fat digestion problem, pancreatitis and pancreatic atrophy related diabetes.

**Purpose/Objective:** The novel technique of pancreatic duct recanalization is presented.

**Materials & Methods:** 38 patients with inoperable cancer of the head of pancreas underwent percutaneous endoluminal RF treatment followed by metal stent implantation after preliminarily performed percutaneous drainage of the main pancreatic duct (PD). Guidewire is conducted across the blocked segment of PD using the existing drainage fistula. 15 Watts power was applied for 2 minutes using bipolar endoluminal RF device (Habib™ EndoHPB, EMcision Ltd., London, UK), placed in PD blocked segment over the guidewire. 6 to 10 mm self-expandable metal stent is implanted immediately after RFA and PD patency restoration is documented by contrast injection. Procedure is completed by drainage catheter repositioning.

**Results:** Procedure was completed in 37 (97.4%) cases; in 1 (2.6%) - wire conduction failed. In 36 completed cases biliary recanalization using the same technique has been performed; among them - before PD procedure (31 cases), after PD procedure (4 cases) and simultaneously - in 1 case. Only PD recanalization has been performed to 2 patients with previous biliary surgical biliary anastomosis. PD patency lifelong restoration without any episodes of pancreatitis has been achieved in 36 (94.7%) of 38 completed cases.

**Conclusion:** PD malignant stricture percutaneous recanalization by endoluminal RFA & stenting using percutaneous drainage fistula is safe and effective technique; RFA induced possible antitumor immune response needs further studies.

#### **Percutaneous trans esophageal gastrostomy (PTEG): indications and technique**

Brenna Wylie, Taymoor Asghar, Nassim Merrachi, Elizabeth David

**Objective:** We aim to outline the indications, describe the technique and outcomes of PTEG insertion.

**Background:** Malignant gastric outlet obstruction can be a source of distressful symptoms in patients with malignancy. Palliation procedures for malignant gastric outlet obstruction such as nasogastric tube for decompression can be uncomfortable for a prolonged period. Venting gastrostomy is an alternative to nasogastric tube but is not suitable for patients who have significant abdominal malignant disease or malignant ascites obscuring a safe route to the stomach. Percutaneous Trans Esophageal