

unit at Ain Shams Hospitals and in Nasser Institute for Research and Treatment. **Result(s):** Operative time was significantly less in CS compared to RFA. One, six and twelve months post intervention follow up using clinical examination and duplex imaging were used to assess outcome and detect complications and recurrence rate. No major complications were detected after both techniques; however minor post operative complications like paresthesia and ecchymosis were significantly less after RFA. Post operative pain, duration of analgesia use and time needed to return to normal activity were also significantly less in RFA group than CS group. Recanalization of GSV was not detected after radiofrequency maneuver nor CS. This study proved that radiofrequency ablation technique is a safe and efficient in treating varicose veins however long-term results and cost effectiveness need further evaluation. **Conclusion(s):** Conventional surgery has been used for a long time for treatment of varicose veins with variable degrees of minor to major complications. Duplex guided radiofrequency ablation is an efficient and a safe modality in the treatment of great saphenous vein varicosities. Of most importance is an adequate Duplex scan to identify accessory channels and double superficial systems.

P403

Angiographic Findings and Outcomes of Bronchial Artery Embolization for Hemoptysis Due to Tuberculosis

Orkun Sarioglu, Ahmet Ergin Capar, Melike Yuksel Yavuz¹, Umit Belet

*Department of Radiology, University of Health Sciences, Tepecik Educational and Research Hospital, ¹Department of Chest Diseases, İzmir Dr. Suat Seren Chest Diseases and Surgery Training and Research Hospital, İzmir, Turkey.
E-mail: orkunsarioglu@gmail.com*

Background: Hemoptysis is a common, important and sometimes life-threatening symptom. The causes of hemoptysis vary significantly between the developed and non-developed countries. In non-developed countries, tuberculosis remains the most frequent cause of massive hemoptysis. Management of hemoptysis include conservative treatment, surgery and bronchial artery embolization (BAE). Since Remy et al. first described BAE for the management of hemoptysis, several studies have declared the efficacy of BAE in tuberculosis patients. The aim of this study was to evaluate angiographic findings during BAE in tuberculosis patients and to compare them with non-tuberculosis patients. **Method(s):** Patients who underwent BAE between August 2015 and July 2018 in a single interventional radiology department with hemoptysis refractory to medical and bronchoscopic treatment were reviewed. A total of 89 patients (66 male and 23 female; mean age 52.71 ± 15.37) were incorporated in the study. Patients were divided into two groups: tuberculosis group (n = 36) and non-tuberculosis group (16 malignancy, 22 bronchiectasis, 6 pulmonary infection, 4 chronic obstructive pulmonary disease, 4 idiopathic, 1 pulmonary arteriovenous malformation; n = 53). Angiography and embolization procedure were performed by a 5-year, 10-year, and 20-year experienced interventional radiologists with a classical method. Angiographic findings were classified as tortuosity, hypertrophy, hypervascularity,

aneurysm, bronchopulmonary shunt, extravasation, and normal bronchial artery. Chi square test was used to compare angiographic findings between tuberculosis and non-tuberculosis patient group. **Result(s):** The most common angiographic findings in tuberculosis patients were tortuosity (%97.2) as well as hypervascularity (%97.2). Extravasation was seen in only one patient (%2.7). Bronchopulmonary shunt was found significantly higher in tuberculosis patients compared to non-tuberculosis group (p = 0.002). None of the groups showed statistically significant difference in respect to recurrence (p = 0.436). **Conclusion(s):** BAE is a useful and effective treatment method of hemoptysis in tuberculosis. Bronchopulmonary shunt was seemed to be significantly higher in tuberculosis patients.

P404

Outcomes of Type II Endoleak Treatment using High Volume Ethylene Vinyl Alcohol Copolymer (ONYX®)

Umar Tariq, Brandon Nuckles, Fatima Memon¹, Ravi Kagali¹, Vinod Maller², Tariq Rahman, Evan Ryer, Luis L. Nadal

*Geisinger Medical Center, Danville, ¹Wayne State University/ Detroit Medical Center, Detroit, ²University of Tennessee Health Science Center, Memphis, USA.
E-mail: utariq@geisinger.edu*

Background: We aim to report our experience with Onyx®, (ethylene vinyl alcohol copolymer) for embolization of type 2 endoleak (T2E) after endovascular repair of abdominal aortic aneurysms (EVAR). **Method(s):** Endoleak repairs using Onyx performed from 2010 to 2016, as part of clinical management were retrospectively reviewed. Technical success (TS) was defined as absence of fluoroscopic evidence of endoleak at the termination of procedure. Clinical failure (CF) was defined as increase in sac diameter greater than 5 mm or increase in sac volume greater than 10% on follow-up computed tomography angiography (CTA), at least 3 months post-procedure or more. Absence of CF was deemed clinical success (CS). Student's t-test was used for statistical analysis. A p value of less than 0.05 was defined to be statistically significant. **Result(s):** A total of 13 patients (mean age 77 years, 12 males and 1 female) underwent persistent T2E repair following EVAR at our institution in a duration of 6 years. Mean interval between EVAR and endoleak repair was 40.7 months. Translumbar access was used in all patients. The mean volume of Onyx used per treatment was 13.4 mL. Additional targeted coil embolization of a feeding inferior mesenteric artery was performed in one patient. TS and CS was achieved in all patients; none of the patients had CF. Mean pre-treatment diameter and volume were 73 mm and 340 cc respectively. Mean post-treatment diameter and volume were 71 mm and 320 cc respectively. There was a trend towards decreased diameter and improved volume post-treatment, however it did not reach statistical significance (p = 0.11). There were no major postprocedural complications. **Conclusion(s):** Our study presents the clinical outcome of the use of Onyx as the main treatment modality on patients with T2E after EVAR. Onyx with or without coils is safe and effective in treatment of T2E after EVAR.