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duodenoscopy (OGD) which revealed blood in the stomach (the neo-esophagus). The patient had a cardiac arrest before finding the source of the bleeding; hence, the OGD was aborted and cardiopulmonary resuscitation (CPR) commenced. He responded to one cycle of CPR and was intubated and fluid resuscitated. When hemodynamically stable, a computed tomography aortography (CTA) was performed, which demonstrated an aorto-esophageal fistula (AEF) and no other aortic abnormality. A rapid decision was made to proceed with a thoracic endovascular repair of the aorta (TEVAR) limited to that segment of aorta. The procedure was successful. He had a follow-up OGD weeks later which was normal. Four months later, he represented to hospital with hypovolemic shock secondary to massive hematemesis. Again, a diagnosis of AEF was confirmed on CTA, which was just proximal to the previous aortic stent graft. He again had emergency TEVAR covering the descending aorta from the level just below the left subclavian artery to just proximal to the celiac artery, which was again lifesaving and uncomplicated. Three months later, a repeat OGD revealed a large gastric ulcer with a visible segment of aortic stent graft in the base. At this time, he reported no symptoms and had a normal full blood count. He was then referred urgently to have definitive upper gastrointestinal and descending aorta repair. He underwent a thoracotomy, left heart bypass, repair of aorto-gastric fistula with primary stomach repair, and thoracic and abdominal aorta replacement with a Dacron graft. He made good recovery. His stent graft culture grew *Candida albicans* and vancomycin-resistant enterococcus.

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The Importance of Computed Tomography Angiography before Bronchial Artery Embolization in Hemoptysis

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Educational Poster Background: Massive hemoptysis is an emergency and a life-threatening situation. Computed tomography angiography helps in identifying the underling pathology and anatomical variation of the bronchial artery. Imaging prior bronchial artery embolization has crucial role in directing an interventional radiologist. The bronchial artery is responsible for majority of hemoptysis cases. Lack of pre-embolization imaging assessment may result in recurrence or incomplete embolization. This poster demonstrates the following: imaging techniques using computed tomography angiography to identify the bronchial artery anatomic variations, procedure planning by identifying the site of bleeding and possible complication.

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Hemoptysis on Tuberculosis Sequelae: From the Physiopathology to the Endovascular Treatment

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Educational Poster Background: Pulmonary tuberculosis is still a deadly endemic infection in most developing countries. In 2015, the incidence of tuberculosis in Morocco was 89/100,000/year. Parenchymal sequelae are frequent presenting as cavitation, cicatricial fibrosis, and parenchymal destruction. Airways lesions often associated are paracicatricial bronchectiasis, tracheobronchial stenosis, and broncholithiasis. Hemoptysis is systemic in these cases and due to bronchial artery hypervascularization. Since described in 1974, bronchial artery embolization (BAE) in controlling bleeding has improved in terms of technique and efficacy. It is indicated generally in mild to massive, life-threatening hemoptysis. Embolization's aim is to devascularize the hypervascular territory or at least decrease the hyperemia. The principal vascular occlusion's agents used nowadays are microparticles. Others additional agents are coils for proximal occlusion and liquids agents that require specific training. Hemoptysis on tuberculosis sequelae is due to systemic hypervascularization and bronchopulmonary shunt. Angio-computed tomograpy with acquisition at an aortic phase allows the detection of the hemorrhage site by searching for "ground glass" zones, and the visualization of bronchopulmonary sequelae. Arguments sustaining the hemoptysis's systemic origin are the dilatation of the bronchial artery, visualization of an early enhancement of pulmonary artery which is a sign of the bronchopulmonary shunt. Selective embolization of the systemic arteries bronchial or collateral such as intercostal, internal mammary artery, and diaphragmatic artery is indicated in case of life-threatening bleeding. Nowadays, the agents of choice are particles. Their size should be above 325 µm so that they do not cross bronchopulmonary anastomoses. The immediate clinical efficacy varies between 70% and 99% with a great percentage of recurrence between 12% and 57%. Despite high recurrence rates, BAE is still the first-line, minimally invasive treatment of hemoptysis in emergency and within surgically unfit patients. Complications are rare (1%). The most severe are spinal ischemia and pulmonary embolism.

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Percutaneous Augmentation Procedures in Chronic Compression Fractures of Dorsolumbar Spine

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Objectives: To evaluate the efficacy of percutaneous balloon vesselplasty in nontraumatic vertebral fractures of the thoracolumbar spine and compare it with percutaneous vertebroplasty. **Methods:** Fifty patients with chronic vertebral compression fracture of more than 12 weeks, severe pain (visual analog scale: more than/equal to 7) and disability attributable to the vertebral fracture were included and underwent vertebral augmentation procedures. Clinical and imaging follow-up was done for the two groups and evaluated for pain, disability scores, increase in anterior vertebral body height, and volume of cement injected. Complication rate was also compared in two groups. **Results:** Mean decrease in pain score was 4.29 in vertebroplasty group and 4.47 in the vesselplasty group. The mean increase in the

physical functionality scores was 27.6 in the vertebroplasty group and 36.1 in the other group which was statistically significant (P = 0.005). The mean amount of cement injected was 4 ml in vertebroplasty group and 5.1 in the other group. The mean change in anterior vertebral height was 0.63 mm in the vertebroplasty group and 2.47 mm in the other group which was significantly higher (P < 0.001). There was cement leak seen in 20% patients in the vertebroplasty group which was minor and mainly involved the paravertebral and intradiscal regions. In the other group, no intradiscal leak was seen. **Conclusion:** Balloon vesselplasty is superior to vertebroplasty in terms of disability scores, increase in anterior vertebral body height, and volume of cement injected with low complication rate.

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Outback LTD Re-Entry Device for Endovascular Recanalization of Central Venous Occlusions Associated with Failing Hemodialysis Access

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Objectives: To report our experience with the Outback LTD re-entry device for endovascular recanalization of central venous occlusions associated with dysfunctional arteriovenous fistulas. **Methods:** Between January 2013 and January 2019, 11 patients (4 males and 7 females, mean age: 61.8 years) with dysfunctional fistulas secondary to central venous occlusion underwent endovascular treatment using the Outback LTD re-entry device. Reasons for referral were increased venous pressure during hemodialysis (N = 5), arm swelling (N = 5), and graft thrombosis (N = 1). The mean age of the fistulas was 58.1 months, during which time nine patients had prior history of at least one salvage endovascular procedure. In all patients, the Outback LTD re-entry device was used as a bail-out measure after failed attempts to cross the occluded central vein using conventional wiring techniques. A retrospective review was performed to assess the clinical outcome of these patients. **Results:** The site of occlusion was at the junction of the subclavian and innominate veins (N = 9), in the right innominate vein (N = 1), or in the subclavian vein (N = 1). The re-entry device was introduced via the outflow vein of the arm (N = 6), femoral vein (N = 4), or internal jugular vein (N = 1). Technical success was achieved in ten patients (90.9%), seven of whom required provisional placement of bare metallic stents. All ten patients underwent successful hemodialysis immediately after the procedure. Five patients with arm swelling were relieved of their symptoms. Excluding four patients who were lost for follow-up, the mean intervention-free period in the remaining six patients was 6.8 months, while the mean functional period of the fistula circuit after assisted procedures was 33.3 months. No complication related to the procedure was reported during this period. **Conclusion:** The Outback re-entry device can be safely and effectively used as a bail-out measure in patients who fail conventional wiring techniques during the endovascular treatment of central venous occlusions.

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Retrograde Access for Lower Limb Revascularization

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Objectives: To assess the efficacy and success of the retrograde approach as the first line for arterial revascularization or as an adjunct to the antegrade approach in patients with critical limb ischemia at a high-volume vascular institution. **Methods:** A prospective cohort study was performed to evaluate the success rate of using a retrograde approach to revascularize patients who had a failed previous attempt at antegrade angioplasty or as primary attempt if noninvasive imaging showing a patent pedal or popliteal artery. The approach was decided at the time by the interventionist who was doing the procedure. The access vessels used were the popliteal, posterior tibial and anterior tibial arteries. Under ultrasound guidance, access to the chosen artery was secured with 4–6 F sheath and distal access cocktail (heparin, verapamil, and nitroglycerin) used directly after gaining access. The method used to complete the intervention up to the external iliac artery. All patients have clinical and duplex scan follow according to the same pathway for antegrade angioplasty. **Results:** 32 patients with critical limb ischemia with multilevel stenoses and or occlusions had retrograde angioplasty performed. 75% patients had diabetes mellitus and 46% (15 of 32) patients had a failed previous attempt of antegrade angioplasty. 3 (9%) patients had both antegrade and retrograde access performed, with the retrograde wire snared. 7 (21%) had popliteal access, 17 (53%) had posterior tibial access, and 8 (25%) patients had the anterior tibial artery used as the primary access vessel. 21 of 23 (91%) patients were successfully revascularized with good results with two cases being abandoned, one no target vessel and one unable to re-enter proximal inflow. There were no periprocedure complications, but one patient developed pseudoaneurysm at the access site (injected with thrombin). **Conclusion:** This cohort showed that retrograde access in the right choice of patients can have an excellent success rate and should be considered as a primary access site or an adjunct to the antegrade approach.

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Anterior Tibial Artery-Anterior Tibial Vein Deep Vein Arterialization: A Potential Option for Limb Salvage: A Case Report

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Background: Critical limb ischemia (CLI) is considered the end-stage of peripheral arterial disease and is characterized by rest pain, ulceration, and gangrene. CLI has an annual incidence of 50–100 cases per 100,000 and has a poor prognosis with mortality rates exceeding 20% at 1 year after presentation and overall cumulative incidence of CLI patients with major amputation