

significant ( $P = 0.222$ ). Amputation-free survival rate was 94.7, 75.6, and 72.7% in CR, DR, and IR, respectively. **Conclusion:** If technically feasible, dilation of angiosome target artery plus any other significant tibial artery lesions should be considered. We should orient procedures toward multiple angiosome reopening with better ulcer healing rate and limb salvage.

## OR2.5

### Target Artery Pathway Is a Fundamental Option for Limb Salvage, Hypothesis or Fact?

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**Objectives:** Critical limb ischemia rate is rapidly increasing. Target artery pathway delineates how tissue fed by specific direct arterial flow can tremendously affect wound healing and limb salvage. This term was described to provide new information that can be applicable for improving revascularization of ischemic tissue lesions. The concept allows deliberate arterial reconstruction with certain priorities in specific ischemic areas in which target artery pathway is certain rescue vessel. **Methods:** Target artery pathway reperfusion has been used as the first option plan in all critical limb ischemia cases classified as Rutherford V and VI from January 2019 to June 2019; all data were identified and collected. Target artery reperfusion has been used in 30 patients with 35 critical limbs in 6 months. Nondiabetics and end-stage renal disease patients were excluded. All included cases evaluated by Duplex scan confirming target artery pathway lesions. Computed tomographic angiography was done in selected cases when proximal lesion was suspected. All cases were treated by plain balloon angioplasty. **Results:** Target artery pathway revascularization success rate was 68.5% (24 limbs out of 35). Using both antegrade and/or retrograde angioplasty, special cases with poor runoff hybrid retrograde metatarsal angioplasty technique was used. Failure of target artery pathway was in 31.4% (11 cases out of 35). Two cases ended with major amputation. **Conclusion:** Target artery pathway may contribute to a shift in common reperfusion theories. However, collective data still are debatable as there is no strong evidence for angiosomal theories. The evidence is scarce depending on the severity of the target artery pathway disease. Target artery pathway with direct pulsatile flow to the affected tissue is postulated to be valid, especially in diabetics, whose ischemic lesions tend to heal worse than those of nondiabetics.

## OR2.6

### Endovascular Treatment of Traumatic Blunt Aortic Injury: A Single-Center Experience

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**Objectives:** An endovascular-first approach is becoming widely accepted for the management of aortic abnormalities,

even in traumatic situations. Thoracic endovascular aortic repair (TEVAR) offers the benefit of precision and immediacy in attending to the target lesion compared to conventional surgical options. In the present analysis, we aim to address the utility of TEVAR in traumatic blunt aortic injury (TBAI). **Methods:** The retrospective analysis was conducted in this single-center study of consecutive patients presenting with TBAI. We reviewed 34 consecutive patients treated for TBAI from October 2014 to December 2018 and used the BAI classification to classified them into four grades based on their computed tomographic findings. Treatment modalities were categorized as nonoperative management (NOM), TEVAR, and surgical repair. Medical records and follow-up imaging acquired 1 and 3 months after the procedure were reviewed. **Results:** A total of 42 patients were diagnosed with TBAI. Locations of involvement were as follows: ascending in 3 patients (7%), arch in 2 (4%), isthmus in 24 (57%), and descending in 11 (26%). Thirty-five patients (83.3%) were classified above BAI grade 2. The number of patients for each BAI grade was 7, 11, 15, and 9, respectively. Overall mortality was 21% (9/42), while the mortality directly related to TBAI was 10% (4/37). Nineteen patients (45.2%) underwent TEVAR for TBAI, among which the number of patients per grade was 0, 2, 10, and 7, respectively. Mortality was 0% for the TEVAR group, 19.17% for the Non operative management group, and 40% for the surgical group. Three complications occurred, two of which were endoleaks, and the third, intentional left subclavian artery sealing. **Conclusion:** Our results suggest the safety and efficacy of TEVAR for all grades of TBAI. Additional prospective studies and longitudinal follow-up are needed to confirm its long-term effectiveness.

## OR2.7

### Safety and Efficacy of Covered Endovascular Reconstruction of the Aortic Bifurcation Technique for Relining of Failed Aortoiliac Stenting: A Single-Center Experience

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**Objectives:** Endovascular intervention with kissing stenting (KS) is the first-line treatment for complex aortoiliac occlusive disease (AIOD), and it is related to less morbidity and a shorter hospital stay compared with open surgery. Unfortunately, a recent study reported primary patency of KS at a 2-year follow-up (FU) of 79%. The geometry of the KS configuration was previously identified as a risk factor for restenosis and thrombosis. To achieve better long-term patency in 2013, a new technique named the covered endovascular reconstruction of the aortic bifurcation (CERAB) technique was introduced. The results at 1-year FU reported a primary and secondary patency rate of 87% and 95%, respectively. Three-year FU confirmed the good outcome of the CERAB technique for extensive AIOD with a primary, primary-assisted, and secondary patency rates of 82%, 87%, and 97%, respectively. We want to report our single-center experience with CERAB for the relining of failed previous aortoiliac stenting. **Methods:** Between February 2019 and September

2019, eight patients (two with previous aortic bare metal stenting, five with KS, and one with unilateral common iliac artery covered stent) were diagnosed with intermittent claudication and treated with CERAB technique. Lesion morphology was evaluated by the computed tomography angiography. All lesions were 2 TASC II B, 3 TASC II C, and 3 TASC D lesions. FU consisted of clinical assessment and duplex ultrasound at 1, 3, and 6 months of FU. Patency rates and clinically driven target lesion revascularization were calculated. **Results:** Technical success was obtained in all the procedures (100%). Primary patency at all scheduled FU was 100%. No complications were reported. There was no 30-day mortality. Median hospital stay was 1 day. **Conclusion:** The CERAB technique appears to be safe and feasible in the relining of failed aortoiliac stenting in complex occlusive disease. Longer FU and larger cohorts of patients are needed to confirm our preliminary results.

### OR2.8

#### Single-Center Evaluation of Inferior Mesenteric Arterial Type II Endoleaks in Patient Undergoing Endovascular Aortic Aneurysm Repair for Infrarenal Abdominal Aortic Aneurysm

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**Objectives:** To evaluate the association of inferior mesenteric arterial (IMA) type II endoleaks in patients undergoing endovascular aortic aneurysm repair (EVAR) for infrarenal abdominal aortic aneurysm at our tertiary center. **Methods:** This was a retrospective single tertiary center evaluation study of all EVARs performed over 4 years (2014–2018). Information for analysis was gathered using RIS/PACS and ICE clinical systems. Imaging data included change in aneurysm sac size poststent-graft insertion, percentage of type of II endoleaks, causative vessels identified contributing to the endoleaks, patency, and ostial diameters of IMA pre-stent-graft insertion. **Results:** Four hundred patients underwent EVAR in 4 years. 10% (41) had type II endoleaks postprocedure. Of the type II endoleaks, 88% (36%) had a patent IMA in the pre-procedural computed tomography. The type II endoleaks were further subdivided into three groups – Group A: IMA with or without lumbar arteries ( $n = 14$ , mean IMA ostial diameter of 4.0 mm), Group B: lumbar artery ( $n = 18$ , mean IMA ostial diameter 3.7 mm), Group C: unspecified ( $n = 4$ , mean IMA ostial diameter 2.7 mm). 21% (3) had IMA embolized and 7% (1) had open repair due to sac size increase. No statistically significant difference was seen in the IMA ostial size between Groups A and B ( $P = 0.6$ ). **Conclusion:** Our study demonstrates a higher incidence of type II endoleaks in patients with patent IMA and lumbar arteries pre-EVAR. However, in our cohort, the diameter of the IMA did not influence the development of IMA type II endoleaks.

### OR2.9

#### Utility of Rotational Thrombectomy for the Management of Thrombosed Arteriovenous Shunts

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**Objectives:** To assess the safety and efficacy of arteriovenous (AV) dialysis shunt thrombectomy utilizing a rotational thrombectomy device in patients with pseudoaneurysms refractory to the conventional “push-pull” method. **Methods:** Between July 2016 and August 2019, 34 dialysis shunt thrombectomy procedures were retrospectively examined (15 fistulas, 19 grafts) in 29 individual patients (13 males, 16 females, average age 64, and range 35–84). All patients presented with clotted accesses and had pseudoaneurysms that were refractory to angioplasty balloon sweeps (“push-pull”) to restore patency. The Cleaner® rotational thrombectomy device was used as a bail-out in all instances in an attempt to restore patency to the clotted shunt. Procedure success, complications, primary patency, primary-assisted patency, average number of shunt aneurysms, and average aneurysm size were documented and analyzed. **Results:** Thirty-three (97%) of the thrombectomy procedures were successful in restoring patency and facilitating same-day hemodialysis. An average of 1.5 aneurysms was treated per patient (range 1–3, standard deviation [SD] 0.65) with an average size of 15.0 mm (range 9.4–31.1, SD 4.87). A total of 5 (14.7%) documented postprocedural complications occurred, including one episode of bleeding which prompted activation of a rapid response team. No device-related complications were recorded. Among the 27 patients with follow-up, primary patency averaged 93 days (range 1–488 days) and primary-assisted patency averaged 91.0 days (range 1–564 days). Nine (26.4%) cases resulted in primary patency to the time of data collection. **Conclusion:** Rotational thrombectomy with the Cleaner® device appeared to be a safe and effective option for restoring patency to thrombosed AV accesses with pseudoaneurysms refractory to standard push-pull techniques with angioplasty balloons.

### OR2.10

#### Ultrasonographic-Guided Needle-Directed Endovascular Management of Hemodialysis Arteriovenous Fistula and Graft: A Novel Technique

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**Objectives:** Thrombosis of arteriovenous fistula/graft is a common cause of lack of vascular access for dialysis and is considered an emergency condition for dialysis patients. We used the low-cost technique of percutaneous needle-directed pulse-spray thrombolysis under ultrasound (US) guidance, which can be done