Conclusions: In patients with critical limb ischemia, placement of multiple EES in long-segment infrapopliteal lesions with prior failed PTA is a durable treatment option with 2-year amputation free survival of 66.6%. Patients with Rutherford 4 and 5 critical limb ischemia have markedly better outcomes compared to patients with Rutherford 6 limb ischemia.

Abstract No. 10

Percutaneous creation of an extraluminal arterial bypass graft using a commercially available self-expanding stent graft: comparison to surgical arterial bypass graft in a swine model

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Purpose: Peripheral arterial disease (PAD) of the lower extremities is a prevalent disease that can result in claudication, rest pain, ulceration, gangrene, and loss of limb. Not all patients are candidates for surgical bypass grafting. In severe cases, endovascular recanalization of total occlusions of the femoropopliteal arteries may not be possible, and even when successful, severe arterial calcifications can significantly limit patency rates. The objective of this study was to compare the short-term patency of a percutaneous endovascular technique for arterial bypass versus the standard of care, a surgically created graft.

Materials and Methods: The experimental study was performed on 7 domestic swine. For each animal, a percutaneous vascular graft was created using sonographic and extra-anatomic arterial bypass of the left common carotid artery formed on 7 domestic swine. For each animal, a percutaneous vascular graft was created using sonographic and extra-anatomic arterial bypass of the left common carotid artery. The grafts were monitored weekly with color doppler using GorePTFE was performed on the right carotid artery for each animal. The grafts were monitored weekly with color doppler to evaluate for patency of the grafts. Angiography and animal sacrifice was performed after 4 weeks. The animals were treated with aspirin and clopidogrel throughout the study period.

Results: Both the percutaneous and surgical arterial bypass grafts were successfully created in 6/7 animals. One animal was euthanized after stent graft maldeployment during the procedure. The remaining 6 animals maintained patent grafts over the 4-week study period. No major adverse events occurred following the procedures.

Conclusions: This study found that short-term patency of a percutaneously created arterial bypass graft utilizing a commercially available stent graft had a similar short-term patency rate compared to surgical arterial bypass grafting. This novel, minimally invasive procedure could eventually become an acceptable alternative to the standard of care, especially in patients who are considered poor surgical candidates.

Abstract No. 12

Stay alive: drug-eluting versus bare-metal stent mortality rates in a high-volume vascular center

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Purpose: Peripheral artery disease (PAD) affects more than 200 million adults in the world and is frequently associated with intermittent claudication. Open surgical approaches have been used in the past, but endovascular approaches have evolved as the first line of treatment. The present study details a single-center real-world case series assessing the safety and efficacy of the Auryon atherectomy system in patients with infragingual PAD.

Materials and Methods: The Auryon atherectomy system (AngioDynamics Inc. Latham, NY) consists of a 355 nm wavelength solid-state Nd:YAG short pulse laser combined with dedicated optical catheters of various sizes. We retrospectively reviewed our single-center experience in patients with infragingual PAD (Rutherford 3 - 6) between March 2020 through September 2020. Post-procedural patency was evaluated by duplex ultrasonography. Doppler waveforms and ABI with PVR were also evaluated to assess functionality before and following intervention. In addition, procedural adverse events were recorded to assess safety.

Results: A total of 31 patients (74 lesions) included 49.09% of females and an average age of 73.05 years (range: 39-101). Comorbidities included diabetes, hypertension, hyperlipidemia, coronary artery disease, COPD, and history of CVA. 50% of the lesions were found in the femoropopliteal arteries, and 50% in the tibial arteries (tibioperoneal trunk, peroneal, posterior tibial, and anterior tibial arteries). Pre- and post-procedural duplex ultrasonography has been performed on 13 (41.9%) patients at this time. Pre-and post ABI with PVR have been performed on 21 (67.7%) patients. Three (9.7%) patients required reintervention, with one requiring a stent due to SFA reocclusion on 3-month follow-up. Another patient had significant improvement of symptoms but elected for reintervention to revascularize additional tibial vessels. The third patient had stenotic recurrence in the popliteal artery on 3-month follow-up requiring intervention. Two lower extremities (3.6%) did not have restored patency following intervention with atherectomy and angioplasty and required surgical bypass – one elective, one urgent due to worsening leg pain 72 hours post procedure. No major events or complications occurred during the procedure.

Conclusions: The Auryon system was shown to be safe and effective with no procedural adverse events. However, further research and clinical studies with long-term follow up and quality of life are needed to validate the benefits with this approach.
salvage center treating Rutherford classification (RC) 3-6 patients, we performed a retrospective analysis of our single-center data evaluating mortality outcomes in patients after bare-metal versus drug-eluting stent (DES) placement. **Materials and Methods:** Single-center retrospective analysis of RC 3-6 patients revascularized with LifeStent (New Providence, NJ), Supera (Abbott Vascular, Chicago, IL), Zilver and Zilver PTX (Cook Medical, Bloomington, IN) stents between January 2013 and May 2019 by 4 physicians (3 interventional radiologists, 1 vascular surgeon) was conducted after IRB approval. Outcome measures include mortality after non-drug coated versus DES placement at 1 and 2 years (primary endpoints) and gender-related stent-specific mortality (secondary endpoint). Data analysis was performed using Fisher’s exact test. The descriptive analysis of the patients, including cause of death were collected. Patients without follow-up at the dedicated endpoints were excluded from analysis at each time point, yielding a $n = 515$ at 1 year and $n = 477$ patients at 2 years. **Results:** There was no increased mortality signal with the use of paclitaxel DES compared to non-DES with mortality rates at 1 year of 11.0% versus 16.6% (OR: 1.6, CI = 0.98 - 2.7) and 16.5% versus 22.4% at 2 years (OR: 1.5, CI = 0.91 - 2.3). **Conclusions:** Similar to the outcomes of mortality associated with DES in the setting of patient-level data, our cohort failed to demonstrate an increased mortality signal after exposure to DET. The cohort mirrors real-life clinical compliance rate and although it poses challenges to evolving research efforts such as the study conducted here, it echoes the need for further studies one limb at a time.