we considered this approach in our patient due to the significant risk of open repair and collateral flow to the occluded vessel, we did not perform the femoral-femoral crossover bypass.

Author Disclosure: C. A. Polania: Nothing to disclose; **R. Guevara:** Nothing to disclose; **L. M. Sanabria:** Nothing to disclose; **J. G. Barrera:** Nothing to disclose.

Utilization of EPIC Electronic Medical Records System for a Limb Salvage Quality Improvement Initiative

Bright Benfor, MD,[2] Eric K. Peden, MD,[1] Maha Rahimi, MD, PhD[1]. [1]Houston Methodist DeBakey Heart and Vascular Center, Houston, TX; [2]Houston Methodist Academic Institute, Houston, TX

Objective: This study demonstrates how to use the EPIC electronic medical records platform (Verona, WI) to initiate a limb-salvage quality improvement project with the aim of reducing postoperative length of stay (LOS) and unplanned readmission rates.

Methods: The vascular surgery research team of Houston Methodist Hospital tasked a team of clinical informaticists experienced in EPIC data mining to query the database for all patients with peripheral arterial disease (PAD) managed between May and September 2021 using a list of predefined disease and operation codes. An automated report of required variables was thus generated without the need for individual chart review. This report was then reviewed to identify opportunities for improvement of LOS and 30-day readmission rate. The targeted goals for these metrics were determined by comparing our data with that of top-decile hospitals in the Vizient hospital rankings for 2020 to 2021, and set at 7 days and 11%, respectively. The monthly reports were examined by a limb salvage committee, which made recommendations to improve quality of care (Fig 1).

Results: In the total cohort of 208 patients, 65 (31%) did not meet the LOS goal. These patients tended to be cardiac, and were initially admitted for non-vascular reasons. The readmission rate was 14% (29/208), out of which 19 of 29 were due to amputation stump and wound complications. Recommendations from the limb salvage committee included deferring non-urgent revascularization to outpatient care with prehabilitation in cardiac patients admitted for non-vascular reasons. Also, referral of patients to wound clinics for weekly wound care upon discharge, and phone-call follow-ups in between office visits to curb down avoidable readmissions.

Conclusion: EPIC automated data mining is efficient in identifying cohorts and monitoring quality indicators in PAD management. Comparing data with top-tier institutions helps to target specific areas of care in need of improvement. Monthly re-evaluation is necessary, and future studies will assess the effectiveness of this process in improving patient care.

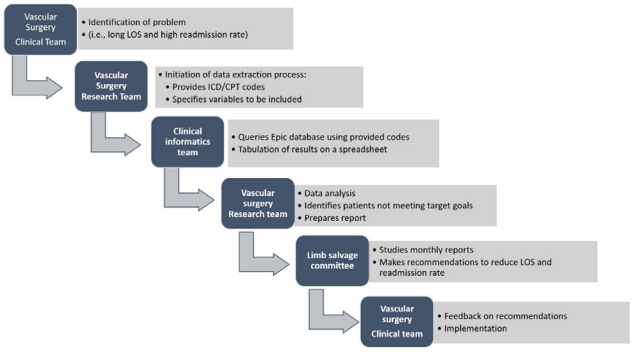

Fig. Flow chart of the process of initiating a limb salvage improvement project.

Author Disclosures: B. Benfor: Nothing to disclose; **E. K. Peden:** Venostent: Independent Contractor; TVA Medical/Bard/BD Medical: Consulting; Humacyte: Consulting, Study Quality Committee; Artegraft: Consulting, Study Quality Committee; **M. Rahimi**: Nothing to disclose.

I Spy with My Little Eye – Optical Coherence Tomography in the Femoropopliteal Tract

Lisa Rutten, MSc,[1] Lennart van de Velde, MSc,[1] Michiel van Werkum, MD,[2] Kartik Jain, PhD,[2] Michel Versluis, PhD,[2] Michel Reijnen, MD, PhD[2]. [1]University of Twente, Enschede, the Netherlands; [2]Rijnstate, Arnhem, the Netherlands

Objective: In-stent restenosis in the femoropopliteal tract remains a challenging problem. Current treatment planning, based on digital subtraction angiography (DSA), is limited as DSA only visualizes the vessel lumen in a two-dimensional plane. Treatment planning could be improved by intravascular optical coherence tomography (OCT) as OCT visualizes the vessel lumen, the vessel wall, and the stent in three dimensions with micrometer resolution. In this study, DSA-based and OCT-based treatment planning will be compared to investigate the added value of OCT in the treatment of femoropopliteal disease. In addition, the value of OCT as control of technical success will be compared with DSA.

Methods: Twenty-five patients diagnosed with femoropopliteal disease and scheduled for endovascular treatment with the Supera stent (Abbott Vascular, Santa Rosa, CA) will be included. Pre- and post-stent placement, DSA scans followed by OCT scans will be performed. Directly after each scan, the findings and the treatment plan will be noted.

Results: To date, two patients with, in total, three stenotic lesions have been included. Before stent placement, both DSA and OCT confirmed the presence of the stenotic lesions. Additionally, OCT showed extensive dissection requiring treatment (n = 1) not observed as such with DSA (Fig 1).

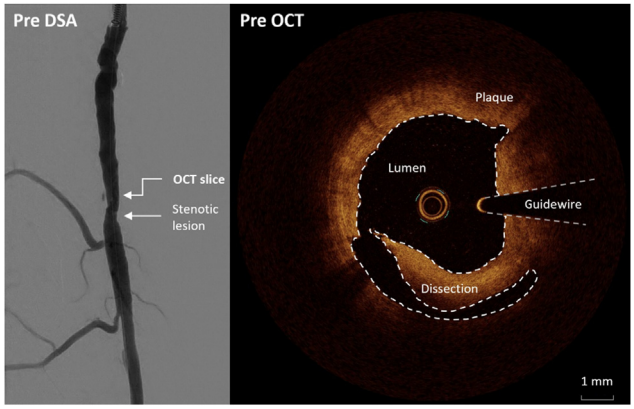

Fig 1. Pre-stent digital subtraction angiography (DSA) and optical coherence tomography (OCT) scan. The small dissection visible on DSA was observed on OCT as an extensive dissection.

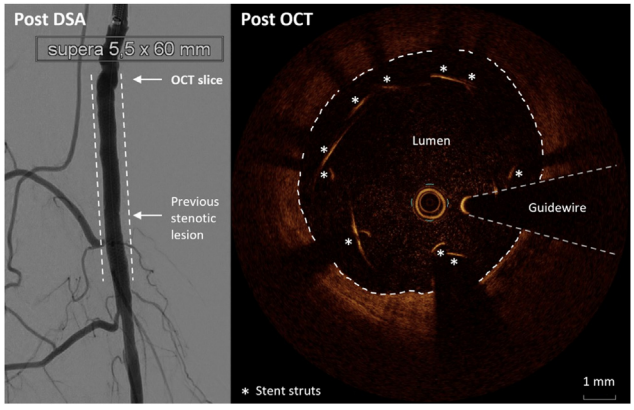

Fig 2. Post-stent digital subtraction angiography (DSA) and optical coherence tomography (OCT) scan. Adequate stent placement was observed with DSA. OCT identified proximal stent strut malapposition.

Journal of Vascular Surgery
April Supplement 2023

This changed the reason for the treatment, but not the actual treatment itself. After stent placement, OCT identified proximal stent strut malapposition (n = 1) (Fig 2) not observed with DSA. The post OCT scans did, however, not change the post DSA-based treatment plan.

Conclusion: Intermediate results show that OCT can detect new findings (extensive dissection, stent strut malapposition) that are important for the endovascular treatment plan of patients diagnosed with femoropopliteal disease. Inclusion is still ongoing, and more OCT findings that could change the treatment plan are expected.

Author Disclosures: L. Rutten: Abbot: Research funding; **L. van de Velde:** Nothing to disclose; **M. van Werkum:** Nothing to disclose; **K. Jain:** Nothing to disclose; **M. Versluis:** Nothing to disclose; **M. Reijnen:** Nothing to disclose.

Popliteal Artery Bifurcation Stenting: Selected Cases and Limited Use in Critical Limb Ischemia Salvage

Ahmed Youssef Sakr, MD, Mahmoud Salah, MD, Alaa Eldin Ahmed, MD, Elsayed Rageh, MD, Farouk Elalfy, MD. Saudi German Hospital Jeddah, Jeddah, Saudi Arabia

Objective: Endovascular revascularization emerged in recent decades as a trusted option for the treatment for critical limb ischemia. The effectiveness of revascularization was judged by long-term vessel patency, lower target lesion revascularization (TLR) rate, and lower major adverse limb events. In particular, below-the-knee vessels have characteristic features regarding the diameter, density of calcification, and rate of total occlusion. Selected cases of popliteal artery bifurcation 'ugly dissection' or heavily calcified lesions need a different approach related to limb salvage. Thus, we present a combination of new technologies for stenting of popliteal artery bifurcation in such cases.

Methods: An ugly dissection of a popliteal artery with heavily atherosclerotic disease after primary attempts for recanalization is shown in Fig 1. An interwoven nitinol stent in p1 was combined with two drug-eluting stents designed for proximal tibial disease in the anterior and tibioperoneal trunk, imitating the covered endovascular reconstruction of aortic bifurcation technique of the aortoiliac bifurcation with appropriate sizing and mapping for the p2 and p3 zones.

Results: Primary successful angioplasty with patent stent systems through the below-the-knee vessels are shown in Fig 2. Appropriate deployment and positioning of the stents was initiated, followed by a 30-day follow-up without TLR. Follow-up Doppler ultrasound for all patients within 30 days showed patency of the stent system, whereas the 6-month follow-up scan showed the patent stent system through the popliteal and tibial vessels, without TLR.

Conclusion: Combining interwoven nitinol stenting with drug-eluting stents in calcified atherosclerotic lesions, limiting flow dissections, reconstructing popliteal artery bifurcation, and imitating covered endovascular reconstruction of aortic bifurcation of aortoiliac disease might be needed for bailout, limb salvage, and amputation prevention in difficult, ugly dissection cases.

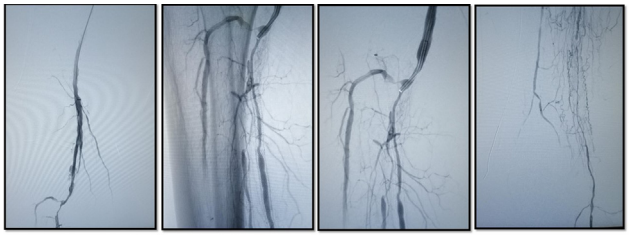

Fig 1. Severely dissected popliteal artery with disease in the anterior tibial artery (ATA) and tibioperoneal trunk (TPT). **A**, Angiogram showing severe dissection of p2 and p3 popliteal artery with poor runoff; **B**, angiogram showing a severely diseased ATA ostium with poor runoff of the remaining vessel; **C**, near total occlusion of the popliteal artery and TPT with complete occlusion of the peroneal artery; **D**, angiogram of the distal runoff with collateral filling the posterior tibial artery at the ankle level.

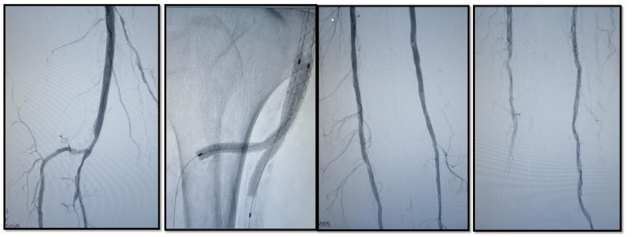

Fig 2. Stenting of the popliteal artery bifurcation. **A**, Interwoven dedicated nitinol stent in the popliteal artery as a first step; **B**, double wire system crossing both the anterior tibial artery and tibioperoneal trunk lesion with two 0.14 drug-eluting stents inside the distal end of a nitinol stent; **C**, completion angiogram with distal runoff of the below-the-knee vessels; **D**, distal runoff of the posterior tibial artery to the ankle area.

Author Disclosures: A. Y. Sakr: Nothing to disclose; **M. Salah**: Nothing to disclose; **A. E. Ahmed:** Nothing to disclose; **E. Rageh:** Nothing to disclose; **F. Elalfy:** Nothing to disclose.

Endovascular Internal Iliac Artery Revascularization for Above-Knee Amputation (AKA) Stump Ischemia

Ronza Salem, MD, Jessie Cohen, MD, Tamer Tamimi, MD, Eyal Avraham, MD, PhD, Jonthan Lorber, MD, Ron Karemli, MD. Hadassah University Medical Center, Jerusalem, Israel

Objective: Limb amputation is performed in patients with peripheral vascular disease when revascularization attempts fail. The level of amputation is decided according to proximal blood supply. Absence of femoral pulse suggests above-knee amputation (AKA). In this report, we will show that patients with ischemic and non-healing AKA can benefit from revascularization of the internal iliac arteries (IIAs). It improves blood supply and allows the AKA to heal. We present two cases in which the AKA did not heal, and disarticulation was considered.

Methods:

Case 1: Percutaneous transluminal angioplasty revascularization of a contralateral internal iliac artery. A 60-year-old male, after failed multiple vascular procedures, underwent right AKA. Right iliac and femoral arteries were occluded, therefore representing a non-healing ischemic stump. Computed tomography angiography demonstrated a contralateral IIA with severe stenosis. Percutaneous transluminal angioplasty through brachial access of the left sided IIA provided contralateral profunda femoralis flow through collaterals.

Case 2: Covered endovascular reconstruction of the IIAs through occluded abdominal aorta and iliacs. A 68-year-old male patient presented with bilateral amputation performed 6 years prior to his presentation to our hospital. There was left AKA stump, ischemia, and rest pain. Computed tomography angiography showed aortoiliac occlusion from the infrarenal aorta and bilateral iliac and femoral arteries. Revascularization attempts to profunda femoralis failed, and disarticulation was considered. Through a brachial access, covered stents were placed from below the renals via the occluded aortoiliacs to both IIAs, restoring inflow.

Results: Stump transcutaneous oxygen pressure improved from less than 20 to 40 mmHg in both cases. Ischemic pain disappeared and both stumps healed, preventing disarticulation.

Conclusion: This report demonstrates revascularization of IIAs improving collateral circulation leading to AKA healing. This approach is important when femoral arteries are occluded, and standard revascularization methods have failed/were no longer available.

Author Disclosures: R. Salem: Nothing to disclose.

DEEPER LIMUS Study Update: The Bare Temporary Spur Stent System for the Treatment of Infrapopliteal Arterial Disease

Leyla Schweiger, MD. Medical University of Graz, Graz, Austria

Objective: The Bare Temporary Spur Stent System (Spur, Reflow Medical, San Clemente, CA) is a novel device developed to meet the