Organized by:

Institute of Vascular Diseases, (I.V.D.), Greece

In collaboration:

Hellenic Society of Vascular and Endovascular Surgery

International Symposium on Endovascular Therapeutics

Stony Brook University Medical Center, New York, USA

Egyptian Vascular and Endovascular Society

2026 LIVE Leading Innovative Vascular Education

May 15-16, 2026

Makedonia Palace
Thessaloniki, **Greece**

#LIVE 2026: Connecting with the Greek Vascular Diaspora

BOOK OF ABSTRACTS

Table of Contents

Institute of Vascular Diseases, (I.V.D.), Greece

Abstract Book

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ORAL PRESENTATIONS

OP01

REDO RECONSTRUCTION OF INFERIOR VENA CAVA DUE TO RECURRENCE OF TUMOR THROMBUS INVOLVING THE SUPRAHEPATIC SEGMENT- REPORT OF TWO CASES

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Keywords: *Renal cell carcinoma; inferior vena cava; recurrent tumor thrombus; suprahepatic IVC; caval reconstruction; redo surgery; oncovascular surgery; ante situm liver perfusion*

Introduction: Recurrent tumor thrombus (RTT) of the inferior vena cava (IVC) following prior thrombectomy for renal cell carcinoma (RCC) represents an exceptionally rare and surgically formidable entity. The term "recurrent" should be reserved for true post-thrombectomy recurrence, distinguishing it from local tumor relapse. Involvement of the suprahepatic IVC further amplifies technical complexity, and complete surgical resection remains the only potentially curative option.

Methods: We report two patients presenting with locally advanced RTT involving the suprahepatic IVC after previous radical nephrectomy and caval thrombectomy with primary closure. Comprehensive staging with PET–CT and CT angiography excluded systemic dissemination in both cases. Surgical management was based on transplant-derived techniques, including transdiaphragmatic pericardial control of the IVC and piggyback liver mobilization. Ante situm hypothermic liver perfusion was employed for 90 minutes to facilitate safe resection.

Results: Recurrence occurred at 3 and 2 years following initial surgery. In both patients, the thrombus extended to the suprahepatic IVC (Level IIIC). Radical resection was achieved in both cases. One patient required circumferential caval resection with interposition of a 19-mm ring-reinforced polytetrafluoroethylene (PTFE) graft. The second underwent partial caval wall resection with reconstruction using an autologous falciform ligament patch. There was no perioperative mortality, and both patients had an uneventful immediate postoperative course.

Conclusion: True recurrence of IVC tumor thrombus after prior thrombectomy is exceedingly uncommon but represents a potentially salvageable condition in highly selected patients. Redo caval surgery, although technically demanding, is feasible when performed in experienced centers. The integration of transplant-based surgical strategies enables safe resection and tailored reconstruction of the suprahepatic IVC, offering a meaningful opportunity for durable oncologic control.

OP02

HYBRID PROGRAM COMBINING SUPERVISED GROUP TRAINING AND STRUCTURED SELF-REPORTING HOME TRAINING FOR THE TREATMENT OF PAD

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Background: Exercise therapy is a key treatment for peripheral arterial disease (PAD) and intermittent claudication (IC), improving walking ability and functional status. However, limited access to supervised programs and poor adherence restrict its implementation in clinical practice. To overcome these barriers, this study evaluated a hybrid exercise model combining supervised group sessions with structured, self-reported home-based training in patients with PAD and IC.

Materials and Methods: This single-center study included 14 patients (8 women, 6 men; mean age 68.9 years) diagnosed with PAD and IC who participated in a four-month hybrid exercise program. The intervention consisted of supervised group sessions complemented by individualized home-based exercises targeting endurance and strength. Clinical outcomes included walking distance, upper and lower limb strength, exercise intensity, perceived exertion, and adherence.

Results: All participants completed baseline assessment and two withdrew before study completion, resulting in an adherence rate of 85.7%. Walking distance improved significantly over the intervention period ($p = 0.033$). Leg strength increased modestly but not significantly, while arm strength declined (left arm $p = 0.043$; right arm $p < 0.001$). Exercise intensity increased significantly at two months ($p = 0.006$) and four months ($p = 0.021$), indicating progressive adaptation. Perceived exertion decreased, although not significantly.

Conclusion: A hybrid model integrating supervised and home-based exercise is a feasible and patient-centered approach for individuals with PAD and IC. It promotes flexibility, supports adherence, and leads to meaningful improvements in walking performance and exercise capacity, representing a practical strategy for expanding access to vascular rehabilitation and conservative therapy.

OP03

EVALUATION OF HrQoL AFTER FEMOROCRURAL BYPASS FOR THE TREATMENT OF CLTI, UTILIZING THE SF-36 QUESTIONNAIRE

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Background: Health-related quality of life (HrQoL) is an underused outcome measure in peripheral arterial disease (PAD. This study evaluated the SF-36 questionnaire as a reliable HrQoL tool and assessed the impact of femorocrural bypass surgery on physical and mental well-being in patients with advanced PAD and chronic limb-threatening ischemia (CLTI).

Methods: In this retrospective double-center study, prospectively collected data from 34 patients with PAD (Fontaine III-IV) undergoing femorocrural bypass were analyzed. HrQoL was measured using the SF-36 preoperatively, at discharge, and at 1 and 3 months postoperatively. Primary endpoints were changes in physical and mental HrQoL scores. Secondary endpoints included primary patency, amputation rates, mortality, and palpable foot pulses. Interinstitutional and disease-stage comparisons assessed questionnaire consistency.

Results: No significant differences were observed between centers across SF-36 domains, confirming consistency. Fontaine IV patients showed up to a 45% reduction in HrQoL, with significantly impaired mental health. Postoperatively, significant improvements occurred in most domains, particularly emotional role limitations and physical pain, especially in patients with maintained primary patency and no major amputation. Mental health improved gradually over time. Primary patency was 93.3%, minor and major amputation rates were 33.3% and 6.7%, and mortality was 11.8%. Palpable foot pulses were present in 46.7% postoperatively. The SF-36 demonstrated excellent reliability (Cronbach's $\alpha = 0.856$).

Conclusions: Femorocrural bypass significantly improves physical and mental HrQoL in advanced PAD and CLTI. The SF-36 is a reliable and sensitive tool that complements traditional surgical outcomes, supporting routine integration of HrQoL assessment into clinical practice.

OP04

LONG TERM REMODELING OF AORTOILIAC VESSELS AFTER EVAR AND THEIR COMPLICATIONS. 5 YEAR RESULTS FROM A SINGEL CENTER

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Introduction: This study aimed to document long-term geometric changes of the infrarenal aorta and iliac arteries following successful elective standard EVAR and to explore their association with late EVAR-related complications.

Methods: Prospectively collected clinical and CTA data from 168 patients treated with elective standard EVAR (2013-2018) were retrospectively analyzed. Follow-up was performed at 1, 24, and 60 months. Eleven anatomical parameters were assessed, including aortoiliac lengths and angles on frontal and sagittal CTA planes. Mean percentage changes between intervals were calculated. The primary clinical endpoint was any EVAR-related complication (ARC) or reintervention. Secondary endpoints included graft migration (AM) and failure of sac regression (FSR; sac growth >5 mm or no regression). Six bifurcated endografts were used; subgroup analysis compared devices with and without suprarenal fixation with hooks.

Results: Median follow-up was 77 months (IQR 24); EVAR-related mortality was 2.4%. ARCs occurred in 16.1% and migration in 12.5%, almost always associated with endoleak. FSR incidence was 43.5%, and approximately one-third of ARCs and migrations occurred after 60 months. Aortoiliac lengths and the inter-iliac angle increased significantly, whereas other angles decreased over time. Remodeling followed a linear pattern up to 24 months, shifting to quadratic or cubic trends by 60 months. Greater length increase was independently associated with reduced sac regression. Suprarenal fixation with hooks was the only factor independently associated with fewer migrations and a fivefold reduction in FSR.

Conclusions: Significant progressive aortoiliac remodeling occurs even after initially successful EVAR and correlates with adverse sac behavior. Suprarenal proximal aortic fixation with hooks may serve as a protective mechanism, reducing the likelihood of long-term complications. Life-long follow-up remains an essential measure for early detection of long-term EVAR failures.

OP05

IMAGING AND MORPHOLOGICAL CHANGES FOLLOWING INTRAVASCULAR LITHOTRIPSY IN CALCIFIED FEMOROPOPLITEAL DISEASE

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Background-Aim: Intravascular lithotripsy (IVL) is an emerging vessel preparation technique for calcified peripheral arterial disease; however, data on its direct effect on plaque morphology remain limited. This study aimed to evaluate imaging-based plaque modification and luminal changes following IVL in femoropopliteal lesions.

Methods: This is a prospective, single-center observational study, which included patients with symptomatic femoropopliteal disease undergoing IVL. All patients underwent pre- and post-procedural computed tomography angiography (CTA), with quantitative plaque analysis using dedicated software for volumetric assessment of calcified, fibrocalcific, and soft plaque components. Intravascular ultrasound (IVUS) was performed before and after IVL to assess lumen area, vessel dimensions, plaque characteristics, and procedural complications. IVL was delivered using a balloon-based system with IVUS-guided sizing, followed by drug-coated balloon angioplasty or stenting when required. Hemodynamic parameters (ankle-brachial index [ABI] and toe-brachial index [TBI]) were recorded pre- and post-procedure. Clinical outcomes, including residual stenosis, complications, and 30-day patency, were prospectively collected.

Results: Thirty-nine patients were included in the study. IVL resulted in significant luminal expansion, with IVUS lumen area increasing from 5.78 to 16.11 ($p<0.001$) and CTA intraluminal volume increasing by 52.7%. Calcified plaque volume was significantly reduced (median change −12.2%, $p<0.001$). Hemodynamic improvement was observed (ABI: 0.80 to 1.00; TBI: 0.40 to 0.62). Dissections occurred in 12.8% of cases. At 30 days, no mortality or target lesion revascularization was observed, while restenosis at 6 months occurred in 5.1%. Fragmentation phenomena were more frequent in concentric lesions but were not associated with plaque reduction. Chronic total occlusion was the main predictor of residual stenosis.

Conclusions: IVL is associated with significant plaque modification and luminal gain in heavily calcified femoropopliteal lesions. Combined CTA and IVUS analysis provide mechanistic insight, suggesting that luminal expansion may occur independently of the degree of calcium volume reduction.

OP06

CEREBRAL HYPERPERFUSION SYNDROME AFTER CAROTID REVASCULARIZATION: RECOGNITION AND MANAGEMENT

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Background-Aim: Cerebral hyperperfusion syndrome (CHS) is a rare but potentially devastating complication after carotid revascularization, associated with cerebral edema, intracerebral hemorrhage, seizures, headache, and focal neurological deficits. Its pathophysiology is linked mainly to impaired cerebrovascular autoregulation and abrupt post-procedural increases in cerebral blood flow. The aim of this review was to summarize current evidence and present our clinical experience on recognition and management of CHS after carotid endarterectomy (CEA) and carotid artery stenting (CAS).

Methods: A literature review was performed using contemporary literature addressing CHS after CEA and CAS, with emphasis on clinical presentation, risk factors, diagnostic criteria, and treatment strategies. Moreover, we performed a single-center retrospective analysis of our patient's medical records throughout the last 20 years.

Results: The literature shows that CHS usually presents early after revascularization, with a pooled risk of 2.4%, and a median symptom onset of 12 hours. Literature data suggest higher CHS risk after CAS than after CEA, which is contradictory to our results, showing a higher risk after CEA (3.0% vs. 1.8%, p=0.036). Across studies, the most consistently reported risk factors are postoperative hypertension, impaired cerebrovascular reserve, recent ipsilateral ischemia, and severe contralateral carotid disease. Recognition relies on a high index of suspicion for new ipsilateral headache, seizures, confusion, or focal deficit within 30 days of revascularization, supported by imaging and exclusion of cerebral ischemia. Early recognition and aggressive blood pressure management remain the most important measures to reduce CHS-related stroke and death after carotid revascularization.

Conclusions: Current evidence supports strict peri- and post-operative blood pressure control as the cornerstone of CHS prevention and management, with close neuro-monitoring and prompt neuro-imaging, when symptoms occur. However, optimal blood pressure targets remain insufficiently defined, and no randomized data exist.

OP07

EARLY AND MID-TERM OUTCOMES OF CAROTID ARTERY STENTING WITH THE CGUARD MICRONET STENT: A SINGLE-CENTER EXPERIENCE IN 270 PATIENTS

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Background-aim: Carotid artery stenting (CAS) has evolved with the introduction of dual-layer micromesh stents designed to reduce plaque prolapse and distal embolization. The CGuard MicroNet-covered stent has been associated with low rates of peri-procedural neurological events in early studies. The aim of this study was to evaluate early and mid-term clinical outcomes of CAS using the CGuard stent in a high-volume single-center experience.

Methods: This single-center study included 270 consecutive patients treated with CAS using the CGuard MicroNet-covered stent between 2018 and 2024. Demographic and clinical characteristics were prospectively recorded. Primary endpoints were technical success, 30-day mortality and peri-procedural neurological events. Secondary endpoints included 12-month outcomes (stroke, transient ischemic attack [TIA], in-stent restenosis), as well as cardiovascular and all-cause mortality during follow-up. Survival analysis was performed using Kaplan-Meier estimates.

Results: Among 270 patients, embolic protection devices (EPD) were used in 2.22% (n=6). Peri-procedural neurological events occurred in 1.48% (n=4), including stroke in 0.74% (n=2) and TIA in 0.74% (n=2). Contrast-induced neurotoxicity was observed in 1.48% (n=4), while cerebral hyperperfusion syndrome occured in 0.37% (n=1). No excess early mortality was recorded. At 12 months, in-stent restenosis occurred in 2 patients (0.74%), one symptomatic and one asymptomatic. During follow-up, cardiovascular mortality was 3.7%, mainly driven by myocardial infarction, while all-cause mortality was 5.2%. Kaplan-Meier analysis demonstrated high survival rates and sustained freedom from restenosis.

Conclusions: CAS with the CGuard stent in a large real-world cohort study ia associated with low peri-procedural morbidity, minimal neurological events and durable mid-term outcomes, supporting its role in contemporary carotid revascularization.

OP08

A NEW ERA IN CARDIOVASCULAR HEALTH ASSESSMENT THROUGH ENDOTHELIAL FUNCTION: THE COR-IS BIOELECTRICAL IMPEDANCE SPECTROSCOPY SENSOR

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Background-Aim: Endothelial function (EF) is a key predictor of cardiovascular health. Ultrasound-based flow-mediated dilation (FMD) is the most widely used method for EF assessment; however, it has notable limitations, including moderate accuracy, high cost, and significant operator dependence. The innovative Cor-IS device (EP3245947 B1, 2022; EP4159120 B1, 2025; US12,318,171 B2, 2025) has been developed to overcome these limitations. This study evaluates its diagnostic performance.

Methods: Cor-IS is a highly sensitive electrical impedance spectroscopy technique that assesses EF by following the standard FMD protocol while replacing ultrasound imaging with an electrical impedance sensor. It provides continuous bioelectrical signals, capturing dynamic EF features throughout the FMD procedure that are not detected by conventional ultrasound measurements. EF was assessed using both ultrasound FMD and Cor-IS in 107 individuals attending outpatient clinics of the 2nd Propaedeutic Department of Internal Medicine in AUTh, Thessaloniki. The study population included patients with coronary artery disease (CAD, n=37), individuals with cardiovascular risk factors (RF, n=37), and healthy controls (n=33). Two Cor-IS-derived biomarkers were analyzed and validated against ultrasound FMD.

Results: The biomarkers derived from Cor-IS signal analysis reflect arterial resistance changes and dynamic vascular responses during ischemia and hyperemia. Specifically, the "hyperemic slope" and "Cor-IS FMD%" demonstrated strong diagnostic performance (AUC= 0.79 and 0.78, respectively). These biomarkers were combined using linear regression to generate the "Cor-IS score", which showed superior diagnostic accuracy (AUC= 0.95). By comparison, ultrasound FMD% achieved an AUC of 0.80. All four EF-related markers showed significant differences between healthy individuals and both RF and CAD groups ($p< 0.001$), while no significant differences were observed between the RF and CAD groups.

Conclusions: Cor-IS-derived biomarkers effectively discriminate between healthy individuals and those with endothelial dysfunction by capturing dynamic arterial responses during the FMD protocol. These findings support Cor-IS as an accurate, non-invasive technique for EF assessment. Further large-scale studies are warranted to validate its clinical utility.

OP09

INFLAMMATORY BIOMARKERS AND CLINICAL OUTCOMES FOLLOWING ENDOVASCULAR ABDOMINAL AORTIC ANEURYSM REPAIR

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Background-Aim: To investigate the predictive role of inflammatory biomarkers in patients undergoing elective endovascular abdominal aortic aneurysm repair (EVAR).

Methods: A systematic review of relevant studies was conducted in accordance with the PRISMA guidelines. Articles assessing associations of inflammatory biomarkers with the clinical outcomes following EVAR were deemed eligible for inclusion.

Results: 34 studies were ultimately included. 7019 patients were reviewed, with a mean age of 73.6 years, of which 91.6% were men. 22 different inflammatory markers were identified among the included studies. Neutrophil-to-lymphocyte ratio (NLR), platelet-to-lymphocyte ratio (PLR), and lymphocyte-to-monocyte ratio (LMR) were investigated in eleven, four, and three articles, respectively. Nine studies evaluated the post-implantation syndrome (PIS) and examined its role in post-EVAR outcomes. An elevated preoperative NLR was associated with all-cause mortality and acute kidney injury after EVAR. NLR was also found to be an independent risk factor for aneurysm sac regression failure. Increased preoperative PLR and decreased preoperative LMR were related to acute kidney injury and overall mortality, respectively. Although PIS resulted in lower type II endoleak rate, no impact on mortality rates was found.

Conclusions: This systematic review demonstrates the prognostic value of 22 inflammatory biomarkers in post-EVAR outcomes. NLR may be a good predictor for mortality and poor prognosis in an EVAR population. This might have clinical implications in post-EVAR surveillance programs. Further research is warranted to validate these findings.

OP10

USE OF THORACIC AORTIC ENDOGRAFTS IN RE-INTERVENTIONS FOR FAILED ENDOVASCULAR OR OPEN ABDOMINAL AORTIC ANEURYSM REPAIR

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Background-aim: Progression of the natural history of aneurysmal disease is the leading cause necessitating re-interventions following an initially successful open surgical repair (OSR) or endovascular repair (EVAR) of abdominal aortic aneurysms. Disease extension into the proximal aortic neck (PAN) represents the principal source of long-term failure for both OSR and EVAR, leading to endograft migration and endoleaks, while also limiting the available options for secondary endovascular repair. The aim of this study was to investigate the use of thoracic aortic endografts as an alternative therapeutic option in the management of such long-term complications.

Methods: We conducted a retrospective analysis of medical records of consecutive patients admitted to our institution over a five-year period (2021-2026) in whom a thoracic aortic endograft was used for the treatment of failed EVAR due to type I or III endoleak and/or migration, or failed OSR, due to disease progression in the PAN.

Results: A total of 14 patients (13 men; mean age 78.5 years) with failed EVAR or OSR were identified. Eleven patients underwent elective procedures, whereas three required emergency intervention due to rupture. The median follow-up was 22 months (range 6-48 months). Immediate technical success of re-interventions was 100%. However, all patients presenting with rupture, despite the technically successful reintervention, died in intensive care unit in the immediate postoperative period. In all 11 elective cases, a standardized surveillance protocol was followed, consisting of Duplex ultrasound every 6 months and annual computed tomography angiography, with sustained procedural success in all cases. Nevertheless, two patients experienced sudden graft destabilization and rupture at 3 years post-reintervention, resulting in death. Additionally, one patient developed endograft infection at 13 months and died of aorto-enteric fistula. The remaining 8 patients continue follow-up without procedure-related complications to date.

Conclusions: The use of thoracic aortic endografts as an alternative approach for the management of failed EVAR or OSR appears to be a technically safe and effective strategy, offering satisfactory mid-term graft stabilization and sac sealing. This technique merits consideration in selected cases. However, its long-term durability remains to be established and further data are required for a more comprehensive evaluation.

OP11

THE ROLE OF suPAR AS A PROGNOSTIC BIOMARKER IN REVASCULARIZATION PROCEDURES: EARLY RESULTS AND REVIEW OF LITERATURE

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Background-aim: The soluble urokinase-type plasminogen activator receptor (suPAR) is a molecule that acts as a chemotactic agent and regulates atherogenesis, cell signalling, adhesion, migration and proliferation. In literature, plasma suPAR levels have been associated with various clinical conditions, including cardiovascular diseases, mainly atherosclerotic. Data have shown that suPAR may be used as a prognostic biomarker of atherosclerosis and subclinical organ damage. Moreover, suPAR levels have also been associated with intimal hyperplasia observed after stent or graft placement, as well as the destabilisation of the atherosclerotic plaque. Current literature states that suPAR levels remain stable after a surgical procedure of revascularization. The aim of the study was the evaluation of its role as a potential prognostic tool of post-operative complications.

Methods: This is a prospective observational study. Inclusion criteria consisted of patients with peripheral arterial occlusive disease or carotid disease that underwent revascularization, either open or endovascular. Patency loss was considered the primary endpoint. Secondary endpoints consisted of major cardiovascular events and mortality. Plasma suPAR levels were measured pre-operatively, 24h, 1 month, and 3 months postoperatively.

Results: A total of 73 patients were included. Loss of patency occurred in 10 of them (13.7%). Plasma suPAR levels were consistently higher in patients who presented with patency loss, with the most important time point being the 1-month post-op. Patients who preserved patency had a mean drop of 5.2% from pre-op to 24h post-op (p=0.029) and a mean increase of 18.2% from 24h to 1-month post-op (p=0.002). Patients who eventually lost their patency had a mean drop of 2.6% from pre-op to 24h post-op (p=0.348) and a mean increase of 34.6% from 24h to 1-month post-op (p=0.097). Therefore, the increase of suPAR levels (ΔsuPAR) between 24h and 1-month post-op could be useful to predict patency loss (p=0.301, AUC 0.72).

Conclusions: Our study is the first to indicate this significant difference of post-operative behavior of suPAR and is expected to associate these early results with postoperative complications, especially patency loss

OP12

IMPACT OF DEPRESSION ON LIMB OUTCOMES IN PATIENTS WITH CHRONIC LIMB-THREATENING ISCHEMIA: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Background: Based on the American Heart Association depression occurs in 1 out 5 patients with peripheral artery disease (PAD), however it is commonly underdiagnosed. Although it is associated with worse outcomes in chronic limb-threatening ischemia (CLTI), its actual impact on the patient prognosis remains unclear. The aim of this study was to evaluate the effect of depression on CLTI patients specifically.

Methods: A systematic search of PubMed/MEDLINE was conducted through December 2025. Eligible studies included prospective and retrospective observational studies; case reports were excluded. In overlapping cohorts, the largest study was selected.

Results: Overall 6 retrospective studies were identified, enrolling a total of 119897 patients with CLTI. The majority of the patients were males (62%), Caucasian (72%), had hypertension (89%), diabetes (68%) and hyperlipidemia (81%). Overall depression was prevalent in 16% (95% CI: 9-24%) of the patients. Female sex (OR 1.76, 95% CI 1.69-1.83), diabetes (OR 1.18, 95% CI 1.13-1.23), hyperlipidemia (OR 1.48, 95% CI 1.21-1.81), congestive heart failure (OR 1.33, 95% CI 1.14-1.54), pulmonary disease (OR 1.48, 95% CI 1.26-1.73) and previous amputation (OR 1.26, 95% CI 1.18-1.35) were more prevalent in the depression group. At up to 6 months, depression was associated with higher major amputation risk (OR 1.47, p=0.044), while all-cause mortality was similar (OR 1.34, p=0.440).

Conclusion: Depression in CLTI population is common, associated with a greater burden of medical comorbidities and higher short-term limb loss rate. These findings highlight the need for systematic screening of depression in high-risk CLTI patients to potentially improve clinical outcomes.

OP13

OUTCOMES OF DRUG-COATED BALLOON ANGIOPLASTY FOR CAROTID RESTENOSIS: A SYSTEMATIC REVIEW AND META-ANALYSIS

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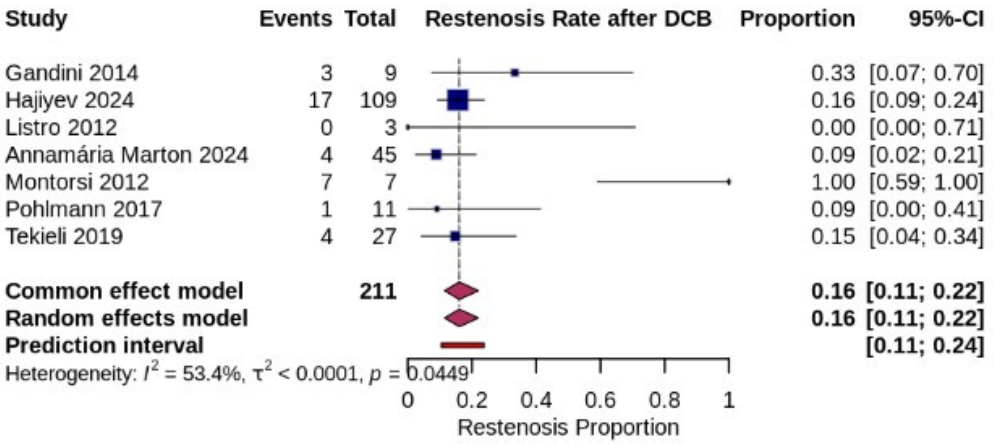
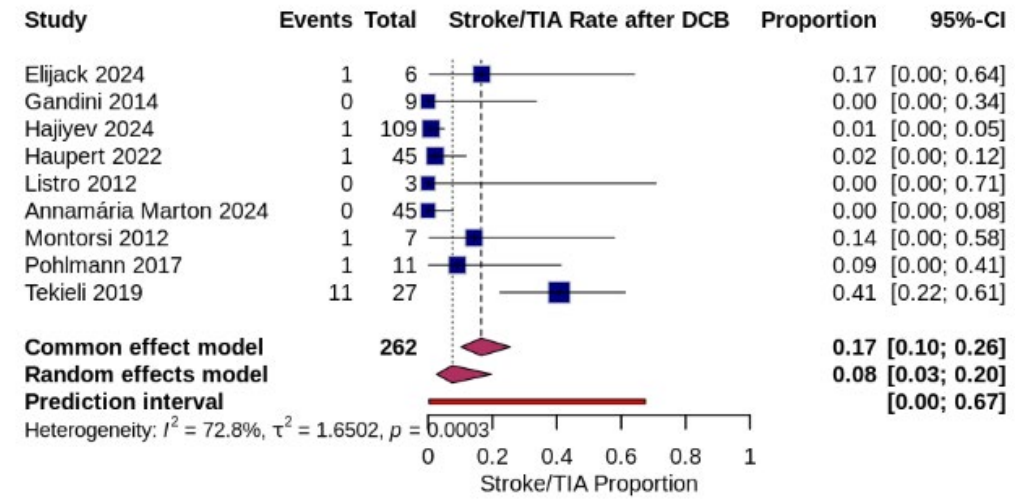
Introduction: Carotid restenosis is a recognized early or late complication following carotid endarterectomy or carotid artery stenting and may compromise the long-term durability of revascularization. Although often asymptomatic, high-grade restenosis has been associated with an increased risk of ipsilateral cerebrovascular events. Drug-coated balloon (DCB) angioplasty has emerged as a potential treatment option, targeting neointimal hyperplasia without additional stent implantation; however, evidence regarding its safety and efficacy in carotid restenosis remains limited.

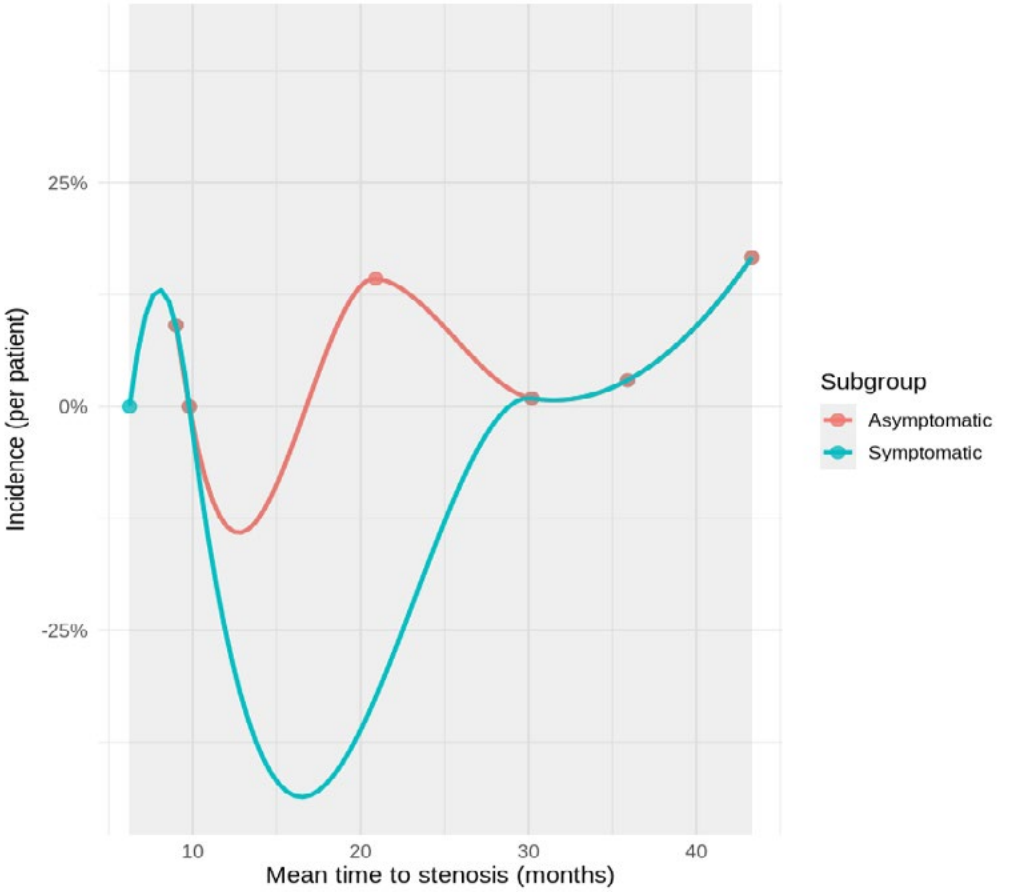
Methods: A systematic review and meta-analysis were conducted in accordance with PRISMA 2020 guidelines. Studies reporting outcomes after DCB angioplasty for carotid restenosis were included. Primary endpoints were restenosis and stroke/transient ischemic attack (TIA) rates. Secondary endpoints included procedural complications, reintervention, and mortality. Random-effects meta-analysis was performed to pool event rates, while study-level meta-regression and correlation analyses explored associations between restenosis timing, patient characteristics, and neurological outcomes.

Results: Nine studies comprising 262 patients were included, the majority of whom were asymptomatic and had undergone prior carotid artery stenting. The pooled restenosis rate after DCB angioplasty was 16%, while the pooled stroke/TIA estimate was 8%. Overall complication, reintervention, and mortality rates remained below 10%. Meta-regression revealed a non-linear association between time to restenosis and neurological events, with increased stroke/TIA incidence during the second postoperative year after the initial procedure and a late rise beyond 36 months, suggesting higher clinical relevance of delayed restenosis. Increasing age emerged as an independent predictor of restenosis. Symptomatic status at baseline was not independently associated with adverse outcomes following DCB angioplasty.

Conclusion: DCB angioplasty appears to be a safe and feasible reintervention for carotid restenosis, with acceptable mid-term patency and low complication rates. Delayed restenosis and older age may increase cerebrovascular risk, emphasizing the need for careful patient selection and follow-up. Further prospective studies are needed.




Study
Events
Total
Stroke/TIA Rate after DCB
Proportion
95%-CI
Elijack 2024 1 6 0.17 [0.00; 0.64]
Gandini 2014 0 9 0.00 [0.00; 0.34]
Hajiyev 2024 1 109 0.01 [0.00; 0.05]
Haupert 2022 1 45 0.02 [0.00; 0.12]
Listro 2012 0 3 0.00 [0.00; 0.71]
Annamária Marton 2024 0 45 0.00 [0.00; 0.08]
Montorsi 2012 1 7 0.14 [0.00; 0.58]
Pohlmann 2017 1 11 0.09 [0.00; 0.41]
Tekieli 2019 11 27 0.41 [0.22; 0.61]
Common effect model 262 0.17 [0.10; 0.26]
Random effects model 0.08 [0.03; 0.20]
Prediction interval [0.00; 0.67]
Heterogeneity: I^2 = 72.8%, τ^2 = 1.6502, p = 0.0003
0
0.2
0.4
0.6
0.8
1
Stroke/TIA Proportion


25%
0%
-25%
Incidence (per patient)
10
20
30
40
Mean time to stenosis (months)
Subgroup
Asymptomatic
Symptomatic

OP14

USE OF ENDURANT STENT-GRAFT AORTIC EXTENSIONS FOR THE TREATMENT OF FOCAL ABDOMINAL AORTIC PATHOLOGY

M. Elmoghrabi, O. Lomvardeas, A. Pappa, I. Giagtzidis, T. Kalogirou, A. M. Mitka, N. Asaloumidis, C. Karkos, K. Papazoglou

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Background: The aim of this study is to report our experience with the endovascular treatment of focal abdominal aortic pathology using Endurant (Medtronic) aortic extension cuffs.

Methods: Between January 2015 and December 2025 a total of 29 patients (24 male) with a mean age 70.4 years underwent endovascular management of focal aortic pathology using Endurant tube endografts. Of these, 24 cases were elective and five were emergency ruptured cases. Six cases were reinterventions after previous EVAR due to endoleak. For the remaining cases, tube endografting was the initial procedure. All operations were performed under local anesthesia.

Results: Technical success was 100%. Mean length of stay was 3.35 days (1-9 days). There were no deaths or major complications during the 30-day period. During the existing follow-up, no aneurysm-related reinterventions had been recorded. A total of 3 patients died after they have completed the 5-year-follow-up. Of these, one patient died from cardiac causes, whereas the other two died due to rupture after EVAR. Neither of the latter two underwent any surgical intervention.

Conclusions: The use of Endurant aortic extensions as an endovascular option to treat focal aortic pathology seems to be a safe, simple, customizable, and cost-effective method with satisfactory results. However, larger series with long-term data are needed to confirm these findings and draw solid conclusions.

OP15

USING DIRECT ISCHEMIC POSTCONDITIONING FOLLOWING CAROTID ENDARTERECTOMY IN PREVENTION OF ISCHEMIC REPERFUSION

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Background: Carotid endarterectomy (CEA) remains the gold standard for stroke prevention in patients with significant carotid artery stenosis. Two primary surgical techniques are applied - eversion endarterectomy (eCEA) and conventional endarterectomy with patch angioplasty (pCEA). This study aimed to evaluate the effects of direct ischemic postconditioning (IPCT) during CEA in the prevention of ischemic-reperfusion injury and neurological complications.

Methods: A total of 1000 patients across multiple centers with high-risk carotid artery disease (severe ICA stenosis (>90%), bilateral stenosis (>80%), severe stenosis with contralateral occlusion, or recent TIA/stroke history) were included. Patients underwent either eCEA or pCEA, with or without intraoperative IPCT. The IPCT procedure consisted of six 30-second cycles of reperfusion and reclamping immediately after plaque removal. Primary outcomes included neurological morbidity and mortality; secondary outcomes were total procedural morbidity and clamp time duration.

Results: The mean clamp time was significantly shorter in eCEA compared to pCEA (19 ± 3 min vs 30 ± 2 min, $p < 0.001$). In the IPCT subgroup, clamp time differences remained significant (eCEA + IPCT: 19 ± 5 min vs pCEA + IPCT: 31 ± 4 min, $p < 0.001$). Clamp duration was not significantly associated with neurological or surgical complications ($p = 0.411$). The incidence of periprocedural neurological complications was significantly reduced in the IPCT group compared to the non-IPCT group no matter the technique used (0.6% vs 5.7%, $p < 0.003$). Clamp duration was not independently associated with neurological or surgical events ($p = 0.411$).

Conclusion: Direct ischemic postconditioning during carotid endarterectomy significantly reduces the rate of periprocedural neurological complications in high-risk patients without increasing operative time or total morbidity. The technique appears to be a simple, safe and effective intraoperative neuroptotective strategy, warranting further investigation in prospective multicenter randomized studies.

OP16

LEFT SUBCLAVIAN ARTERY REVASCULARIZATION DURING THORACIC ENDOVASCULAR AORTIC REPAIR: A TEN-YEAR SINGLE-CENTER EXPERIENCE

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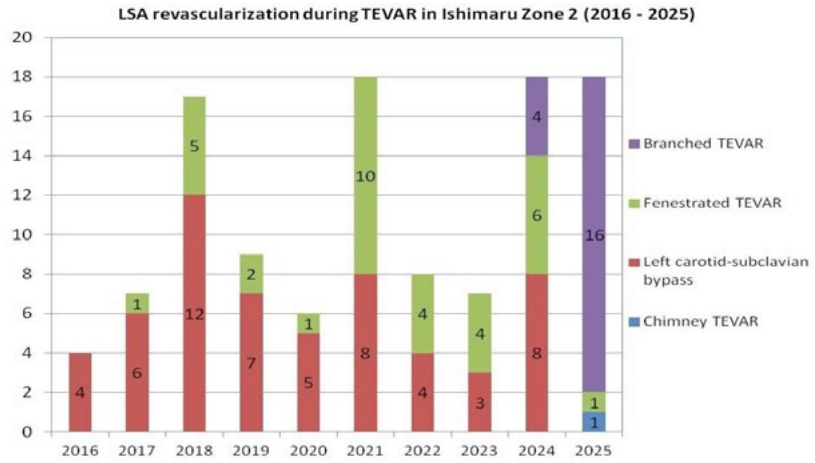
[2] Department of Surgical Treatment of Aortic Pathology, Amosov National Scientific Center of Cardiovascular Surgery and Hereditary Pathology of the National Academy of Medical Sciences of Ukraine
[3] Chief of Institution, Amosov National Scientific Center of Cardiovascular Surgery and Hereditary Pathology of the National Academy of Medical Sciences of Ukraine

Background: Coverage of the left subclavian artery (LSA) enables broader application of thoracic endovascular aortic repair (TEVAR) in cases with a short proximal landing zone. However, intentional coverage of the LSA may result in severe complications, such as stroke, spinal cord ischemia or ischemia of the left upper limb.

Methods: From 2016 to 2025, we performed 330 TEVAR procedures. In 112 cases (33.9%) only LSA coverage was required. 57 (50.8%) patients underwent left carotid-subclavian bypass (CSB). Endovascular revascularization (ER) was performed in 55 cases, including fenestrated TEVAR (n=34), chimney TEVAR (n=1), branched TEVAR (n=20).

Results: In the CSB group, complications occurred in 12 (21%) patients and included endoleaks (n=9; type I = 2, type II = 7), carotid-subclavian anastomosis stenosis (n=1), lower extremity paraparesis (n=1), left common carotid artery dissection (n=1). In the ER group, complications were observed in 8 (14.5%) patients and included LSA extravasation (n=1), branch malposition (n=1), cardiac tamponade (n=1), stroke (n=1), pseudoaneurysm of left brachial artery at the access site (n=2), thrombosis of left brachial artery at the access site (n=1), superior mesenteric artery embolism (n=1). Although the difference in complication rates (12/57 vs 8/55) was not statistically significant (p=0.4), endoleaks were more frequent in the CBS group (p=0.003). Overall mortality among the 112 patients was 0.9% (one patient).

Conclusions: LSA revascularization improves the feasibility of TEVAR. Both CSB and ER represent reliable methods of LSA revascularization. The choice of treatment method should depend on the available technical capabilities and experience of the surgical team.



OP17

THE USE OF ENDOANCHORS IN THE MANAGEMENT OF HOSTILE NECK DURING ENDOVASCULAR AORTIC REPAIR

A. Skotsimara, N. Hasemaki, I. Avgerinos, T. Mansolas, K. Tzanis, S. Georgopoulos, C. Bakogiannis, C. Klonaris

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Aim: To report the use of endoanchors in the management of hostile neck during endovascular aortic repair in a single-center experience.

Materials and Methods: All consecutive patients undergoing EVAR with the use of endoanchors between January 2023 and March 2026 were included. Perioperative and early follow-up data were analyzed. Key outcomes assessed included overall survival, technical success, complications, reinterventions and freedom from endoleak during follow-up.

Results: A total of 18 patients were treated, with a mean age of 75 years; 100% were male. All patients featured with hostile neck anatomy; short or conical neck. Technical success was achieved in 100% of procedures. Mean hospitalization days is 3 days. Endoanchors were combined with Endurant (Medtronic) in 55% of cases, Gore CXT in 39% of cases and in one patient were used with Lifetech (Ankura) aortic graft. During follow up no endoleaks were identified and reinterventions were not needed.

Conclusions: This preliminary single-center experience with endoanchors demonstrates favorable early and mid-term outcomes. Endoanchors is an additional useful tool to treat patients with hostile neck. Ongoing follow-up is essential to validate long-term efficacy and durability of the technique.

OP18

EARLY SINGLE CENTER EXPERIENCE WITH THE BEFLARED DEDICATED BRIDGING STENT GRAFT FOR FEVAR

M. Tsotsios[1], A. Skotsimara[1], I. Avgerinos[1], T. Mansolas[1], K. Tzanis[1], N. Hasemaki[1], A. Katsargyris[1], C. Klonaris[1]

[1] 2nd Vascular Surgery, "Laiko" General Hospital of Athens, School of Medicine, National and Kapodistrian University of Athens, Athens

Background: Fenestrated endovascular aneurysm repair (FEVAR) is widely used for complex abdominal aortic aneurysms. Balloon-expandable covered stents are used to connect fenestrations to target vessels, traditionally through a multi-step technique including stent deployment and flaring of the stent at a second step. The latest evolution of the BeGraft stent-graft (Bentley InnoMed GmbH) device includes the BeFlared stent that simplifies the procedure by combining deployment and flaring into a single step, improving accuracy and reducing procedure and fluoroscopy time.

Aim of the present study was to report early outcomes of a single center experience with the BeFlared stent in FEVAR.

Methods: All consecutive patients that received at least one BeFlared bridging stent in F/BEVAR procedures were analyzed.

Results: Between 01 March 2025 and 20 March 2026, 49 consecutive patients underwent complex aortic repair, of whom 32 were treated with fenestrated or fenestrated/branched endografts (27 pararenal and 5 thoracoabdominal aneurysms). Devices included 19 custom-made fenestrated grafts, 11 fenestrated/branched grafts, and 2 physician-modified grafts. A total of 101 BeFlared bridging stent grafts were deployed: 43 in the renal arteries, 31 in the superior mesenteric artery, and 27 in the celiac artery. Technical success was achieved in all cases. One renal stent required intraoperative re-inflation due to a type IIIc endoleak. The use of the BeFlared stent was associated with reduced procedural and fluoroscopy times per target vessel and minimized the risk of technical errors. During follow-up all bridging stents remained patent and one patient required proximal re-inflation of a BeFlared stent to treat a type IIIc endoleak.

Conclusions: The use of the BeFlared bridging stent in FEVAR appears to be safe , demonstrating reduced procedural complexity and excellent early patency rates. Its simplified deployment may contribute to shorter procedure and fluoroscopy times while minimizing technical errors, contributing to further standardizing complex endovascular aortic repair.

OP19

OPEN SURGICAL REPAIR OF PERSISTENT ANEURYSM SAC EXPANSION AFTER F/BEVAR

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2nd Vascular Surgery, "Laiko" General Hospital of Athens, School of Medicine, National and Kapodistrian Univeristy of Athens, Athens

Background: Aneurysm sac expansion following complex endovascular aortic repair with F/BEVAR remains a challenging complication, particularly when the reason is unclear or cannot be treated by endovascular means. In selected cases, open surgical semi-conversion with preservation of the endograft may provide an effective treatment while avoiding the morbidity of graft explantation.

Methods: Three consecutive patients presenting with significant aneurysm sac expansion after F/BEVAR were treated with open semi-conversion with endograft preservation.

Results: In the first case, following prior FEVAR after a failed EVAR, a 1 cm sac expansion with an endoleak of unknown origin was managed with sac exploration without proximal and distal clamping. A Moya-moya type II endoleak was identified and treated with extensive hemostasis and tight plication of the sac. The second patient, previously treated with a branched device for a Type IV thoracoabdominal aneurysm, presented with an enlarging symptomatic aneurysm without any signs of endoleak after a successful embolization of the IMA for type II Endoleak. He underwent a sacotomy with suturing of a type II endoleak and tight sac plication around the graft. The third patient, treated with FEVAR three years earlier after a failed previous EVAR, presented with a significant sac expansion without any evidence of endoleak. He underwent open sac exploration with ligation of the IMA and lumbar arteries. All patients had an uneventful postoperative course with a mean hospital stay of 7 days. At 6 months follow-up all patients are alive without any signs of sac re-expansion.

Conclusion: Open semi-conversion with preservation of the endograft appears to be a safe and effective option for managing persistent sac expansion after F/BEVAR in the absence of type I or III Endoleak. A safe proximal and distal sealing eliminates the need for clamping and reduces significantly the morbidity of the procedure compared to complete open conversion.

OP20

DOUBLE FIXATION EVAR FOR THE TREATMENT OF INFRARENAL ABDOMINAL AORTIC ANEURYSM: A RETROSPECTIVE CASE SERIES STUDY

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[1] Faculty of Medicine, School of Health Sciences, University of Ioannina, Ioannina
[2] Vascular Unit, Department of Surgery, University Hospital of Ioannina, Ioannina

Continuous technical improvements in aortic endograft systems have established the EVAR procedure as the most widely used modality for the treatment of abdominal aortic aneurysms (AAAs). Yet, among the many patient-related factors affecting EVAR planning, certain anatomical features of the aorta may force abandonment of an endovascular approach. The presence of a short aortic neck (length <10 mm) specifically, represents one of the most common challenges, increasing the risk of component migration and type Ia endoleak development. In high-risk patients with short neck, the double fixation EVAR technique has emerged as a promising alternative to open surgery. We present our single-center experience through a retrospective case series of eight patients (mean age: 74 years) with infrarenal AAAs and hostile neck anatomy. All patients had a very short neck (length <8 mm) and were considered high-risk for open surgery due to multiple severe comorbidities. Consequently, an endovascular plan was selected using the anatomically fixated AFX-2 unibody in combination with a proximal aortic graft extension (Medtronic Endurant or AFX-2 Vela cuff). All patients successfully underwent double fixation EVAR. The mean operative time was 125 minutes. In one patient, intraoperative identification of type Ia endoleak prompted placement of a second aortic cuff proximally to achieve adequate sealing. No major intraoperative complications were observed. The patients' postoperative recovery was uneventful. During follow-up of up to 2.5 years, no procedure-related complications have been documented, such as endoleaks, component migration, or need for reinterventions. This case series study highlights the beneficial role of double fixation EVAR using the AFX-2 unibody device in combination with a proximal graft extension for the treatment of high-risk patients with AAAs and short aortic neck.

OP21

BALANCE, MUSCLE STRENGTH, AND FUNCTIONAL DECLINE IN PERIPHERAL ARTERIAL DISEASE: A SYSTEMATIC REVIEW AND META-ANALYSIS

V. Manaki, A. Giannopoulos, I. Kontes, I. Patsarikas, I. Giagtzidis, K. Ktenidis

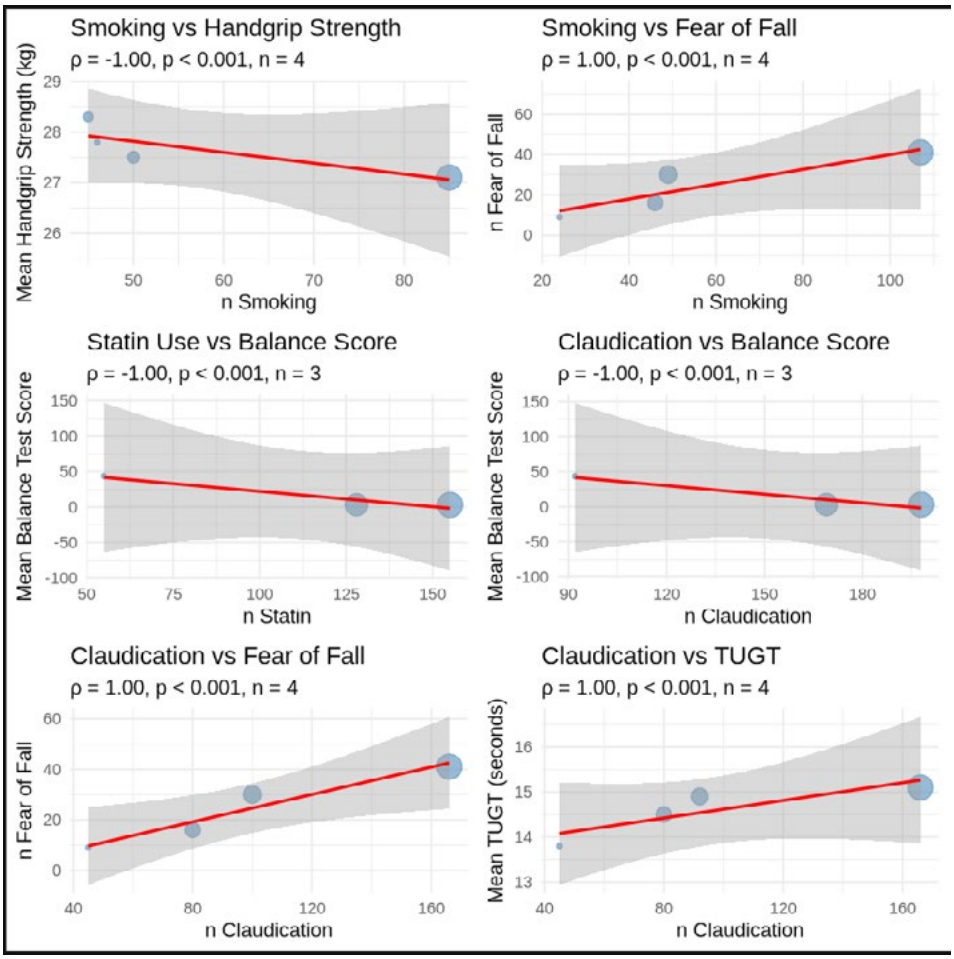
Department of Vascular Surgery, AHEPA University Hospital, Thessaloniki

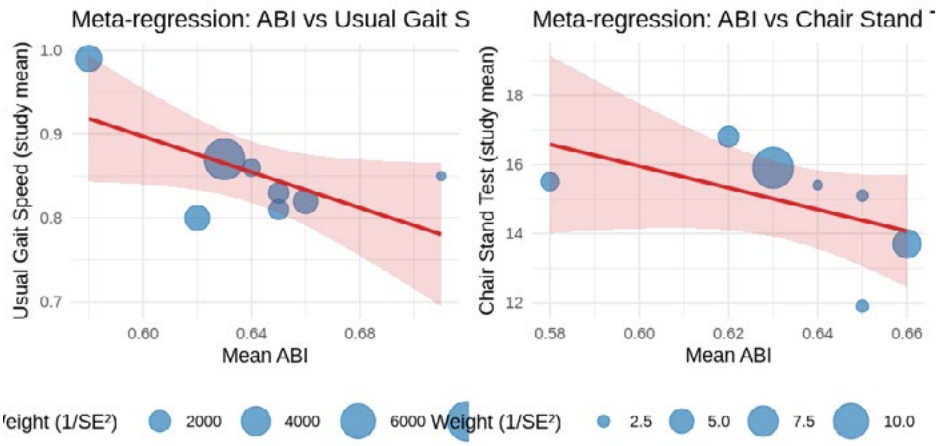
Introduction: Peripheral arterial disease (PAD) is a prevalent manifestation of systemic atherosclerosis that leads to progressive functional impairment beyond claudication alone. Increasing evidence suggests that PAD is associated with reduced muscle strength, impaired balance, and heightened fear of falling, contributing to mobility limitation and frailty. However, the relationship between disease severity and these functional domains remains incompletely characterized.

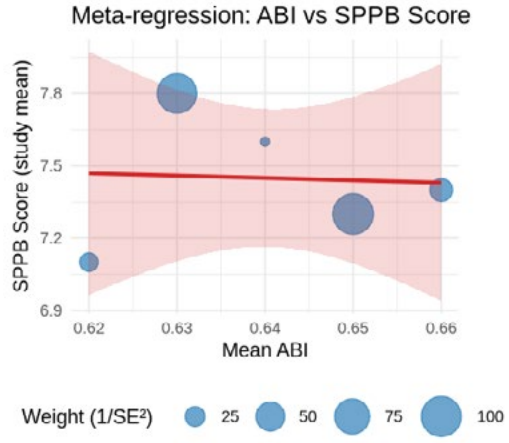
Methods: A systematic review and exploratory meta-analysis were performed according to PRISMA 2020 guidelines. Twelve studies encompassing 2,083 participants with PAD were included. Aggregated, study-level data were analyzed to assess correlations between disease indicators—ankle-brachial index (ABI), claudication prevalence, smoking, statin use—and outcomes reflecting balance and functional performance, including balance scores, Timed-Up-and-Go Test (TUGT), Short Physical Performance Battery (SPPB), six-minute walk distance (6MWD), and handgrip strength. Associations were examined using Spearman's ρ and random-effects meta-regression models.

Results: Claudication prevalence was inversely correlated with balance scores ($\rho = -1.00$, $p < 0.001$) and positively correlated with fear-of-fall frequency ($\rho = +1.00$, $p < 0.001$) and slower TUGT performance ($\rho = +1.00$, $p < 0.001$). Smoking prevalence showed strong negative associations with handgrip strength ($\rho = -1.00$, $p < 0.001$) and positive associations with fear-of-fall counts. Higher ABI values predicted faster gait speed and shorter chair-stand times, indicating better lower-limb performance. Meta-regression analysis also indicated that lower ABI correlated with slower gait speed ($p < 0.05$) and prolonged chair-stand time.

Conclusion: PAD severity and smoking are major contributors to muscle weakness, poor balance, and reduced mobility. Claudication and fear of falling act synergistically to accelerate frailty, while lower ABI values are significantly correlated to physical decline. Early screening and multifactorial rehabilitation, integrating balance training and strength conditioning, are essential to prevent falls and ameliorate quality of life in PAD populations.


Smoking vs Handgrip Strength
ρ = -1.00, p < 0.001, n = 4
Mean Handgrip Strength (kg)
n Smoking
Smoking vs Fear of Fall
ρ = 1.00, p < 0.001, n = 4
n Fear of Fall
n Smoking
Statin Use vs Balance Score
ρ = -1.00, p < 0.001, n = 3
Mean Balance Test Score
n Statin
Claudication vs Balance Score
ρ = -1.00, p < 0.001, n = 3
Mean Balance Test Score
n Claudication
Claudication vs Fear of Fall
ρ = 1.00, p < 0.001, n = 4
n Fear of Fall
n Claudication
Claudication vs TUGT
ρ = 1.00, p < 0.001, n = 4
Mean TUGT (seconds)
n Claudication


Meta-regression: ABI vs Usual Gait S
Usual Gait Speed (study mean)
Mean ABI
Meta-regression: ABI vs Chair Stand
Chair Stand Test (study mean)
Mean ABI
eight (1/SE²) 2000 4000 6000
Weight (1/SE²) 2.5 5.0 7.5 10.0


Meta-regression: ABI vs SPPB Score
SPPB Score (study mean)
Mean ABI
Weight (1/SE²) 25 50 75 100

OP22

MACROVASCULAR SUCCESS DOES NOT PREDICT TISSUE RECOVERY: INSIGHTS FROM CEUS AND NIRS AFTER LOWER LIMB REVASCULARIZATION: A PILOT STUDY

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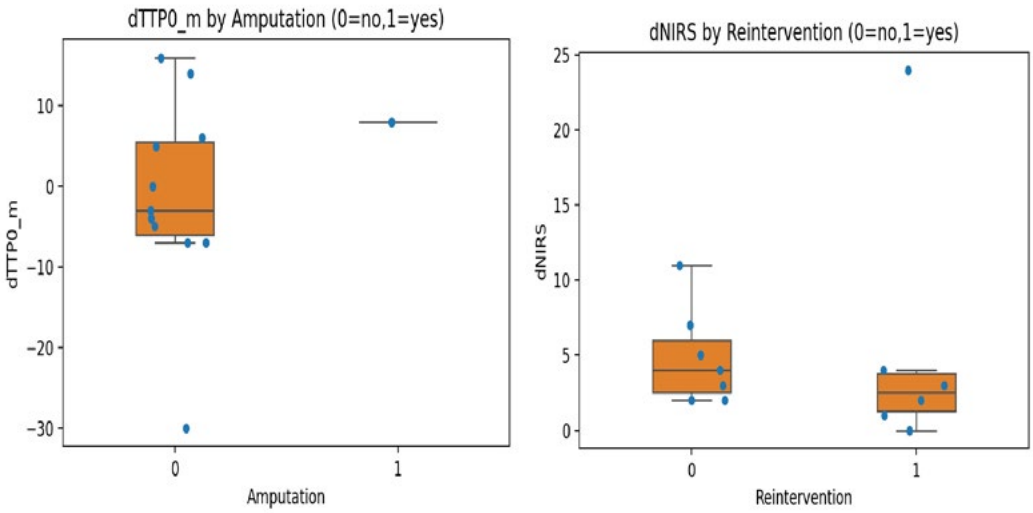
Background: Assessment of revascularization success in peripheral arterial disease (PAD) relies on macrovascular indices such as the ankle-brachial index (ABI), which may not reflect tissue-level perfusion or clinical outcomes. Contrast-enhanced ultrasound (CEUS) and near-infrared spectroscopy (NIRS) enable direct assessment of microcirculatory function. This study evaluated the relationship between macrovascular improvement, microcirculatory changes, and clinically relevant outcomes.

Methods: In this prospective pilot observational study, consecutive patients with PAD (Fontaine ≥IIB) undergoing lower limb revascularization were included. ABI, CEUS-derived parameters (time-to-peak [TTP], peak intensity), and NIRS-derived muscle oxygenation were recorded pre- and post-intervention. Changes (Δ) were calculated. Associations were assessed using Spearman correlation. Outcomes included reintervention, amputation, chronic limb-threatening ischaemia (CLTI), claudication, and Rutherford classification.

Results: Thirteen patients were analyzed. Reintervention occurred in 46% and amputation in 15%, while CLTI (54%) and claudication (46%) were balanced. Baseline ABI correlated strongly with clinical severity, including claudication (ρ≈+0.70), CLTI (ρ≈−0.70), Rutherford stage (ρ≈−0.61), and walking distance (ρ≈−0.59). In contrast, microcirculatory parameters demonstrated closer alignment with clinically relevant outcomes. ΔTTP correlated with amputation (ρ≈0.40-0.46) and Rutherford stage (ρ≈−0.59), indicating impaired microvascular perfusion in patients with poor outcomes. NIRS-derived changes were directionally associated with functional recovery and reintervention. ABI showed no meaningful association with adverse outcomes.

Conclusion: Microcirculatory parameters demonstrated stronger associations with clinical outcomes than ABI following revascularization. These findings support a dissociation between macrovascular improvement and tissue-level perfusion and suggest that CEUS and NIRS may improve risk stratification beyond conventional hemodynamic indices. Larger studies are required to confirm these findings.



OP23

AORTOUNIILIAC STENT-GRAFTING WITHOUT A FEMORO-FEMORAL CROSSOVER BYPASS FOR THE ENDOVASCULAR MANAGEMENT OF AAA WITH CONCOMITANT UNILATERAL ILIAC OCCLUSION

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Fifth Department of Surgery, Medical School, Aristotle University of Thessaloniki, "Ippokrateio" General Hospital of Thessaloniki, Thessaloniki

Background: Endovascular repair (EVAR) is a well-established and safe treatment for abdominal aortic aneurysm (AAA) in both elective and emergent settings. In cases of concomitant iliac artery occlusion (IAO), the standard approach involves the use of an aorto-uni-iliac (AUI) stent graft combined with femoral-femoral bypass (FFB) to preserve perfusion to the contralateral limb. However, FFB is associated with complications such as infection, wound issues, and reduced long-term patency. Recent evidence suggests that, in selected patients, AUI without FFB may be feasible due to sufficient collateral circulation.

Method: We present a single-center case series of 12 male patients (mean age 75.5 years) treated with AUI without FFB between January 2019 and September 2025.

Results: Eight cases were elective and four emergent, including one ruptured AAA. Technical success was achieved in 100% of cases, with 11 procedures completed in a single operation. All procedures were performed under local anesthesia, and no patient required postoperative ICU admission. The mean hospital stay was 4.17 days. One early postoperative death occurred in a patient with ruptured AAA, while two late deaths were unrelated to AAA. No reinterventions due to procedure-related complications were required. Regarding intermittent claudication, most patients reported stable or improved symptoms, with no clear evidence of clinically significant deterioration.

Conclusions: AUI without FFB appears to be a safe and effective alternative for selected patients with AAA and IAO, in both elective and emergency settings. The technique offers the advantages of reduced operative complexity and avoidance of FFB-related complications. Nevertheless, the small sample size and limited follow-up highlight the need for larger studies to validate these findings and better assess long-term outcomes.

OP24

ENDOVASCULAR MANAGEMENT OF VASCULAR LESIONS WITH THE TOURGUIDE STEERABLE SHEATH

A. Pappa, M. Elmoghrabi, O. Lomvardeas, E. Ntaountakis, A. M. Mitka, T. Kalogirou, N. Asaloumidis, I. Giagtzidis, C. Karkos, K. Papazoglou

5th University General Surgery Clinic, "Hippokratio" Hospital, Thessaloniki

The aim of this study was to present our experience with the use of the TourGuide over the last 18 months for a total of 28 cases of endovascular procedures with a variety of vascular lesions.

Aim: The TourGuide™ Steerable Sheath (Medtronic) is a specialized vascular access tool used in endovascular procedures to enhance maneuverability, stability, and control, particularly when managing complex vascular lesions in tortuous or challenging anatomies. The aim of this study was to present our experience with the use of the TourGuide over the last 18 months.

Methods: From March 2024 to October 2025, a total of 28 cases underwent endovascular procedures with the aid of a TourGuide Steerable Sheath. The treated vascular lesions were: EVAR for abdominal aortic aneurysm (n=5; 4 elective, one ruptured), renal artery stenosis (n=1), carotid artery lesion (n=1), type IA or IB endoleak (n=3), stenosis involving the superior mesenteric artery and the celiac artery (n=2), pseudoaneurysm of the left hepatic artery (n=1), splenic artery aneurysm (n=1), complex thoracic, abdominal or thoracoabdominal aortic pathology with renovisceral artery procedures (n=14).

Results: The procedures with the use of the TourGuide Steerable Sheath were technically successful in all but 2 cases (93%). The 2 cases of technical failure were an attempted stenting of a heavily calcified atherosclerotic lesion during a stand-alone renal artery procedure and an attempted stent-grafting of a renal artery target vessel during a FEVAR/BEVAR procedure. The first was aborted and the second ended up with coil embolization of the branch. The use of the TourGuide Steerable Sheath was our first catheter choice in 7 cases (25%), whereas in 10 (36%) cases was our final choice after one or more previously failed catheter options. As a secondary option, the use of TourGuide was particularly helpful to facilitate catheterization of visceral arteries.

Conclusions: Our experience with the TourGuide Steerable Sheath is promising. Steerable sheaths can be successfully utilized to cannulate challenging target vessels and salvage a wide range of aortic or renovisceral endovascular procedures.

OP25

DETERMINANTS OF ABDOMINAL AORTIC ANEURYSM RUPTURE: INTEGRATING MORPHOLOGY AND BIOMECHANICS BEYOND MAXIMUM DIAMETER IN A PATIENT-SPECIFIC STUDY OF RUPTURED ANEURYSM ANATOMIES

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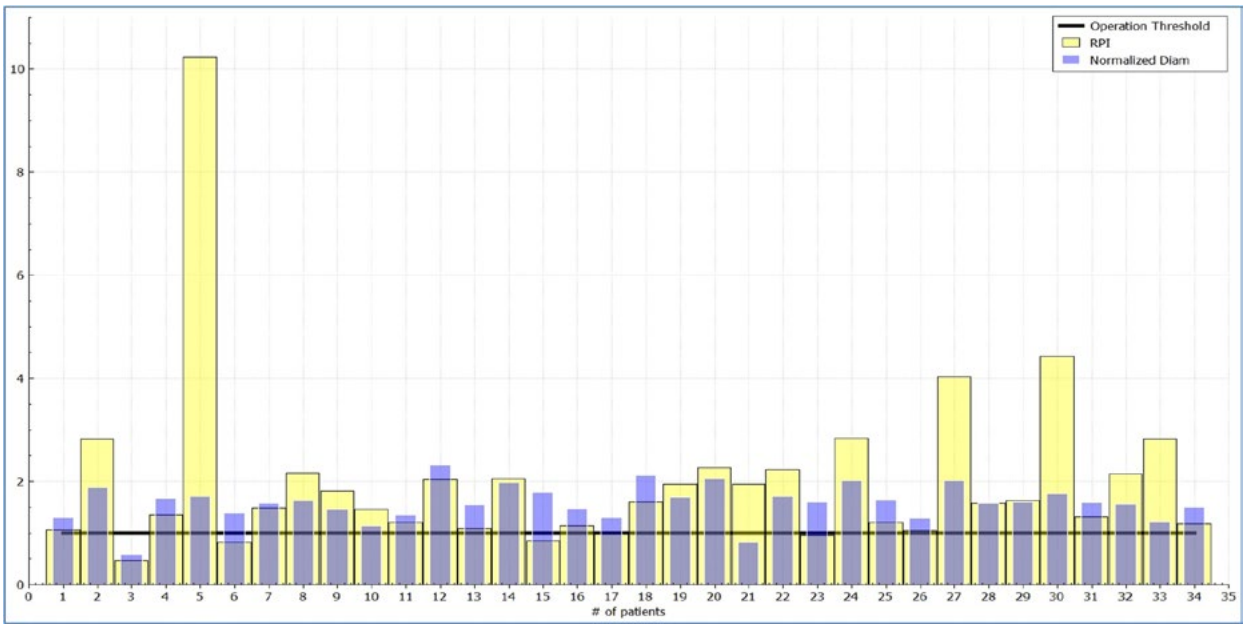
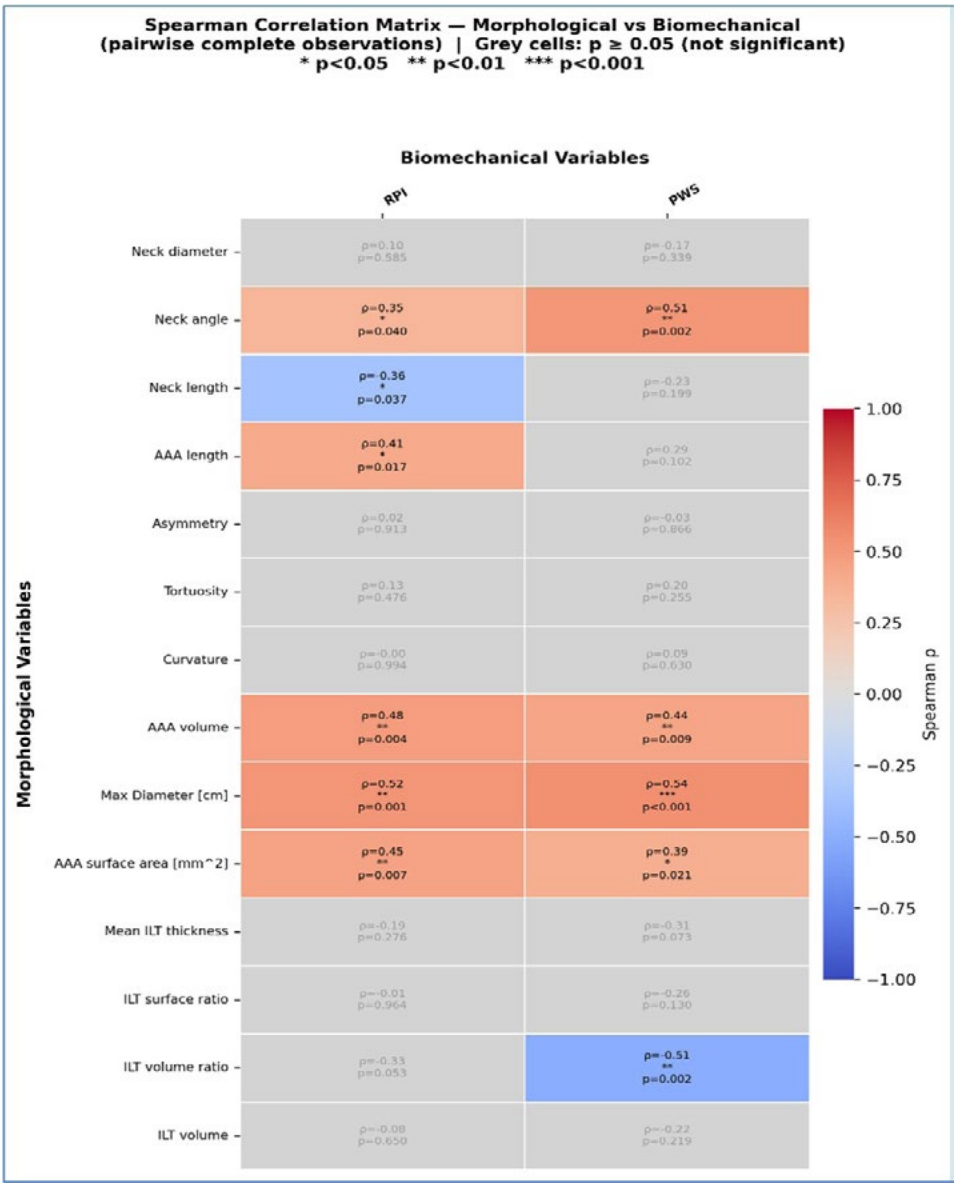
Background-Aim: Current guidelines for abdominal aortic aneurysm (AAA) repair rely primarily on sac diameter, despite well-recognized discrepancies between size and rupture risk. Large AAAs may remain stable, whereas smaller ones may rupture, underscoring the need for more comprehensive risk and morphology stratification. This study evaluates morphological and biomechanical determinants of rupture and their interactions in ruptured AAAs.

Methods: 37 consecutive patients with ruptured AAAs (2020-2025) underwent computed tomography-based segmentation, enabling patient-specific 3D reconstructions and biomechanical analysis. Morphological parameters included intraluminal thrombus (ILT), aneurysm volume, tortuosity, asymmetry, and neck characteristics. Rupture sites were mapped onto each model and radiologically confirmed. Finite element analysis was performed using a Yeoh hyperelastic wall model and linear elastic ILT. A uniform systolic pressure (80 mmHg) was applied with fixed proximal and distal constraints. Rupture potential index (RPI) and peak wall stress (PWS) were evaluated against normalized diameter and conventional thresholds.

Results: Non-normal distributions were observed for ILT volume, curvature, tortuosity, and mean stress ($p<0.05$) (Table). Ruptures occurred at regions with lower normalized diameter (0.525 ± 0.222), suggesting local geometric expansion as a determinant. No anterior-posterior predilection was observed ($p=0.864$). Aneurysm size metrics correlated positively with RPI and PWS ($\rho=0.39$-0.54, $p\leq0.021$). Neck angulation correlated positively with PWS and RPI, while neck length showed an inverse association with RPI. ILT volume ratio correlated negatively with PWS ($\rho=-0.51$, $p=0.002$). RPI demonstrated superior discriminatory potential compared to diameter.

Conclusions: AAA rupture is a multifactorial, locally driven process determined by the interplay between geometry and wall mechanics. A multiparametric approach incorporating morphological and biomechanical indices-particularly local expansion, neck angulation, neck length, and RPI-provides improved risk stratification beyond diameter-based criteria and may enhance clinical decision-making.


Operation Threshold
RPI
Normalized Diam
# of patients


Spearman Correlation Matrix — Morphological vs Biomechanical
(pairwise complete observations) | Grey cells: p ≥ 0.05 (not significant)
* p<0.05 ** p<0.01 *** p<0.001
Biomechanical Variables
RPI
PWS
Morphological Variables
Neck diameter
Neck angle
Neck length
AAA length
Asymmetry
Tortuosity
Curvature
AAA volume
Max Diameter [cm]
AAA surface area [mm^2]
Mean ILT thickness
ILT surface ratio
ILT volume ratio
ILT volume
Spearman ρ
1.00
0.75
0.50
0.25
0.00
−0.25
−0.50
−0.75
−1.00

OP26

PMEGPLAN: A BROWSER-BASED DECISION-SUPPORT TOOL FOR PHYSICIAN-MODIFIED ENDOGRAFT PLANNING

Areti Vassiliou[1], K. Karathanou[2], M. Peroulis[3], S. Kakkos[4], V. Alexiou[2]

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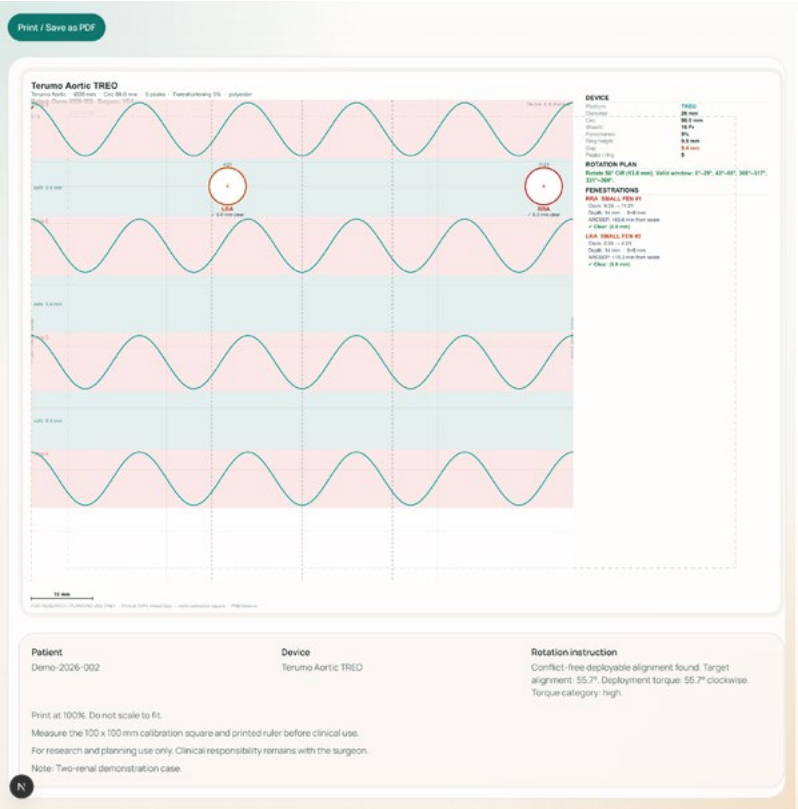
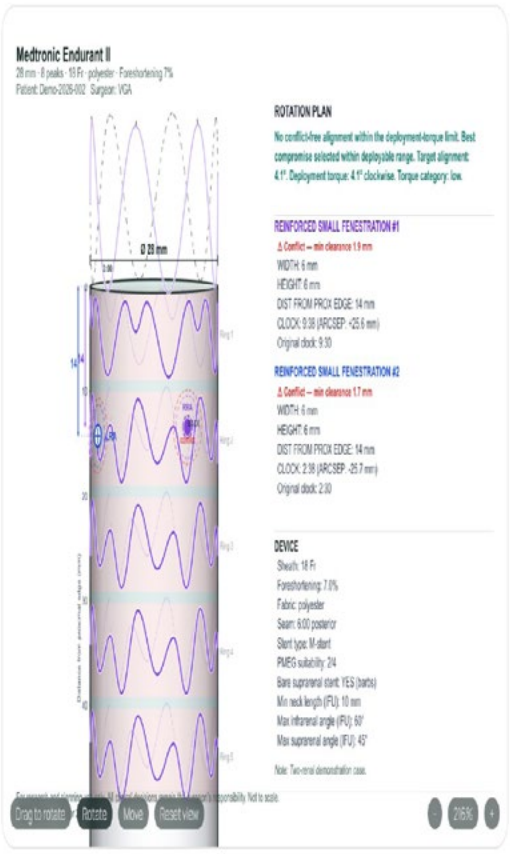
Introduction: Physician-modified endografts (PMEGs) represent a lifesaving bailout strategy for complex aortic pathology requiring urgent visceral vessel incorporation without access to commercially manufactured devices. A critical and error-prone step in PMEG preparation is determining the optimal graft rotation to ensure conflict-free positioning of fenestrations relative to the proximal stent ring strut pattern. Currently, this is performed manually with physical templates, introducing geometric uncertainty and operator dependence. PMEGplan is an open-access, browser-based planning tool developed to automate rotation optimisation, strut conflict detection, punch card generation, and interactive three-dimensional graft visualisation for PMEG preparation.

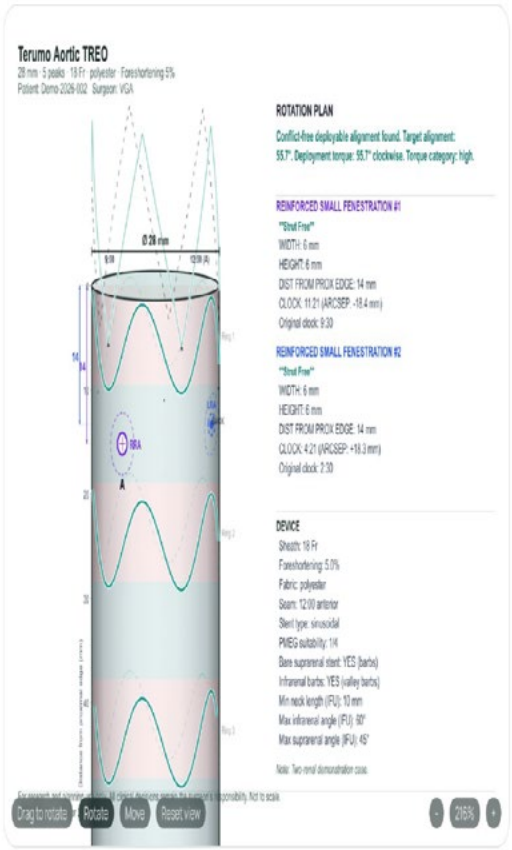
Methods: The application was developed as a Next.js/TypeScript single-page application with no server-side dependency. The device geometry library encodes IFU-derived stent parameters for the four most commonly used commercial platforms for PMEG: Cook Zenith Alpha (thoracic), Medtronic Endurant II (infrarenal), Terumo TREO (infrarenal), and Medtronic Valiant (thoracic). The planning engine accepts aortic neck diameter and up to four fenestrations (scallop, large, or small) defined by vessel target, clock position, depth from the proximal edge, and fenestration dimensions. A circumferential rotation scan (0.5 mm step) computes per-fenestration strut clearance across the full graft circumference, identifying conflict-free rotation windows, the optimal delta angle, minimum clearance, and a manufacturability score. An interactive three-dimensional graft model is rendered directly in the browser using a rigid-body cylinder projection with configurable azimuth and elevation, device-accurate Z-stent or sinusoidal ring geometry, hidden-line discrimination (viewer-facing struts rendered solid, back-facing struts faded), and fenestration positions overlaid at the computed optimal rotation. The output additionally includes a printable, calibrated punch card (A4 landscape, 100×100 mm reference square) with strut overlay and fenestration markers, alongside PDF, CSV, and structured JSON exports. The planning logic was validated against five prospectively collected Cook CMD (Custom-Made Device) reference cases with known implanted configurations.

Results: Across the five validation cases, PMEGplan identified the implanted rotation as lying within a computed conflict-free window in all cases. Optimal rotation computed by the algorithm corresponded with CMD-planned rotation within 5 degrees in four of five cases. Printed punch card dimensions were confirmed accurate against a calibrated 100 mm standard. The interactive 3D reconstruction allowed intuitive spatial appreciation of fenestration-to-strut relationships at the planned rotation. Side-by-side multi-device comparison and real-time conflict feedback were rated intuitive by two independent vascular surgeons during usability review.

Conclusions: PMEGplan automates the geometrically complex component of PMEG preparation, providing surgeons with a validated, device-specific rotation plan, an interactive three-dimensional graft reconstruction, and a print-ready template. The tool is freely accessible, requires no installation, and supports four major commercial platforms. Prospective multicentre validation is underway.


Print / Save as PDF
Terumo Aortic TREO
DEVICE
ROTATION PLAN
FENESTRATIONS
Patient
Demo-2026-002
Device
Terumo Aortic TREO
Rotation instruction
Conflict-free deployable alignment found. Target alignment: 55.7°. Deployment torque: 55.7° clockwise. Torque category: high.
Print at 100%. Do not scale to fit.
Measure the 100 x 100 mm calibration square and printed ruler before clinical use.
For research and planning use only. Clinical responsibility remains with the surgeon.
Note: Two-renal demonstration case.


Medtronic Endurant II
28 mm · 8 peaks · 18 Fr · polyester · Foreshortening 7%
Patient: Demo-2026-002 Surgeon: VGA
ROTATION PLAN
No conflict-free alignment within the deployment-torque limit. Best compromise selected within deployable range. Target alignment: 4.1°. Deployment torque: 4.1° clockwise. Torque category: low.
REINFORCED SMALL FENESTRATION #1
⚠ Conflict — min clearance 1.9 mm
WIDTH: 6 mm
HEIGHT: 6 mm
DIST FROM PROX EDGE: 14 mm
CLOCK: 9:38 (ARCSEP: +25.6 mm)
Original clock: 9:30
REINFORCED SMALL FENESTRATION #2
⚠ Conflict — min clearance 1.7 mm
WIDTH: 6 mm
HEIGHT: 6 mm
DIST FROM PROX EDGE: 14 mm
CLOCK: 2:38 (ARCSEP: -25.7 mm)
Original clock: 2:30
DEVICE
Sheath: 18 Fr
Foreshortening: 7.0%
Fabric: polyester
Seam: 6:00 posterior
Stent type: M-stent
PMEG suitability: 2/4
Bare suprarenal stent: YES (barbs)
Min neck length (FU): 10 mm
Max infrarenal angle (FU): 60°
Max suprarenal angle (FU): 45°
Note: Two-renal demonstration case.
Drag to rotate
Rotate
Move
Reset view
216%


Terumo Aortic TREO
28 mm · 5 peaks · 18 Fr · polyester · Foreshortening 5%
Patient: Demo-2026-002 Surgeon: VGA
ROTATION PLAN
Conflict-free deployable alignment found. Target alignment: 55.7°. Deployment torque: 55.7° clockwise. Torque category: high.
REINFORCED SMALL FENESTRATION #1
"Strut Free"
WIDTH: 6 mm
HEIGHT: 6 mm
DIST FROM PROX EDGE: 14 mm
CLOCK: 11:21 (ARCSEP: -18.4 mm)
Original clock: 9:30
REINFORCED SMALL FENESTRATION #2
"Strut Free"
WIDTH: 6 mm
HEIGHT: 6 mm
DIST FROM PROX EDGE: 14 mm
CLOCK: 4:21 (ARCSEP: +16.3 mm)
Original clock: 2:30
DEVICE
Sheath: 18 Fr
Foreshortening: 5.0%
Fabric: polyester
Seam: 12:00 anterior
Stent type: sinusoidal
PMEG suitability: 1/4
Bare suprarenal stent: YES (barbs)
Infrarenal barbs: YES (valley barbs)
Min neck length (FU): 10 mm
Max infrarenal angle (FU): 60°
Max suprarenal angle (FU): 45°
Note: Two-renal demonstration case.
Drag to rotate
Rotate
Move
Reset view
216%

OP27

IATROGENIC ARTERIAL INJURIES IN MODERN PRACTICE: ACCESS-RELATED PATTERNS, DETERMINANTS OF OUTCOMES AND REINTERVENTION

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Department of Vascular Surgery, "AHEPA" University General Hospital, Thessaloniki, Greece

Background: Iatrogenic arterial injuries are increasingly encountered with the widespread use of invasive and endovascular procedures. Their clinical significance and predictors of adverse outcomes remain incompletely defined. Methods: We performed a retrospective analysis of 66 consecutive patients presenting with iatrogenic arterial injuries. Data regarding injury type, affected vessel, index procedure, management, and outcomes were collected. Associations between clinical variables and adverse events were explored.

Results: Pseudoaneurysm was the predominant injury type (42%, 28/66), followed by direct arterial injury (14%), catheter-related complications (10-12%), arteriovenous fistula/combined lesions (8-10%), and thrombosis (7-8%), indicating an overall access-related pattern. The common femoral artery was most frequently involved (30%, 20/66 and 36% of overall cases), followed by radial artery (11%) and mixed femoral segments (12-15%) highlighting access-related mechanisms as the predominant cause. Reintervention was required in 15% of patients. Wound infection occurred in 24%, ICU admission in 29%, and 30-day mortality reached 10%. A strong association was observed between wound infection and reintervention, with reintervention rates markedly higher in infected patients compared to non-infected cases (50% vs. 4%). ICU admission was also significantly associated with increased mortality (31.6% vs. 2%), suggesting that clinical severity is a key determinant of outcome.

Conclusions: Iatrogenic arterial injuries are predominantly access-related. Despite their cause, they are associated with considerable morbidity and mortality. Wound infection appears to be a major predisposing factor of reintervention, emphasizing the importance of prevention and early management strategies.

OP28

POST-EVAR INFLAMMATORY RESPONSE AND ARTERIAL STIFFNESS: EXPLORING A POTENTIAL RELATIONSHIP ACROSS ENDOGRAFT PLATFORMS

G. Plakas[1], K. Moulakakis[1], C. Antonopoulos[1], A. Yfantis[1], F. Spanos[1], A. Rokou[1], P. Georgiou[1], C. Pitros[1], A. Panagiotopoulos[1], C. Verikokos[1], G. Sfyroeras[1], A. Lazaris[1], J. Kakisis[1]

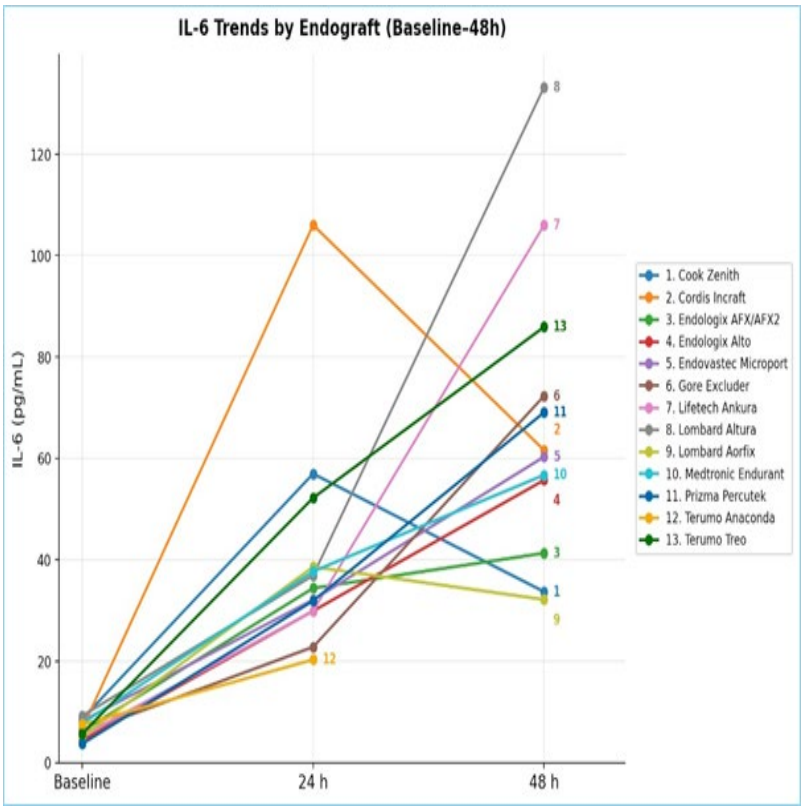
[1] 1st Department of Vascular Surgery, Attikon University Hospital, National and Kapodistrian University of Athens, Athens

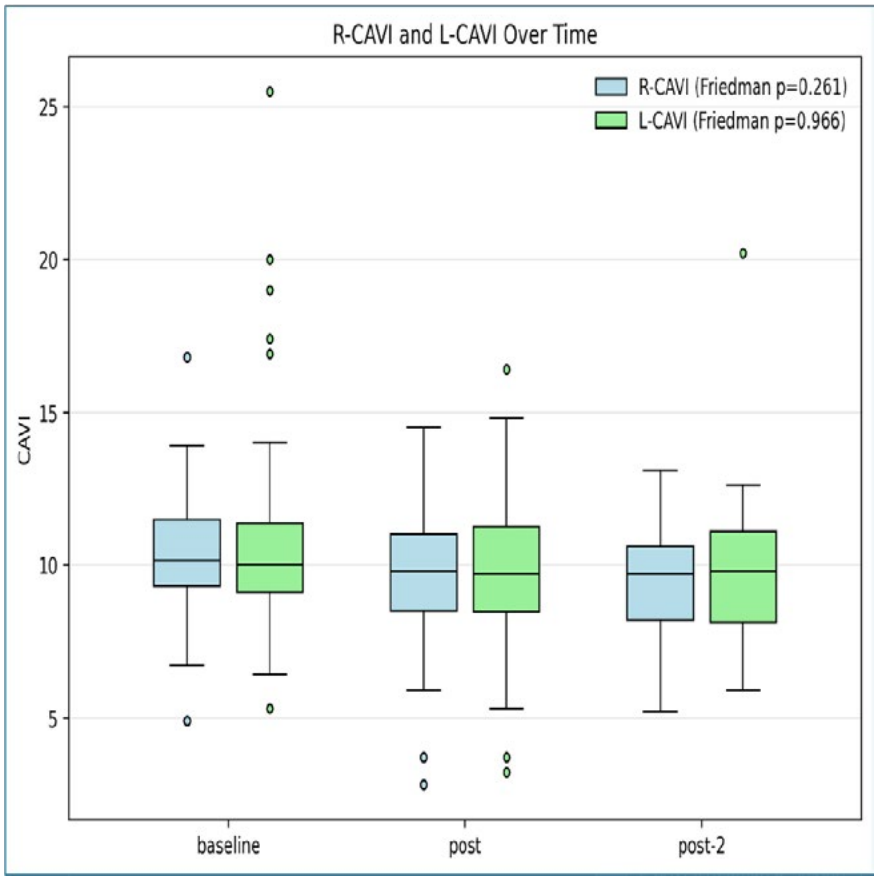
Background-Aim: Endovascular aneurysm repair (EVAR) induces a systemic inflammatory and hematological response that may vary by endograft type. This study evaluated post-implantation biomarker changes across multiple platforms, including newer devices, and explored their relationship with arterial stiffness.

Methods: Hematological and inflammatory biomarkers were measured at baseline, 24h, 48h, and 1, 3, and 6 months in 155 patients undergoing EVAR with 13 endografts. Interleukin-6 (IL-6) was assessed at baseline, 24h, and 48h. Temporal changes were analyzed using statistical analysis. Arterial stiffness was assessed using the Cardio-Ankle Vascular Index (CAVI) at baseline and two post-procedural timepoints.

Results: Significant changes were observed in platelets, WBC, CRP, and IL-6 ($p<0.001$). Platelets decreased to 24-48h and recovered by 3 months. WBC and CRP increased early, with CRP peaking at 48h, while IL-6 rose progressively to 48h ($p<0.001$). IL-6 response varied by endograft: Altura showed the highest levels at 48h, followed by Ankura and Treo, whereas Incraft peaked at 24h. Patients with fever and weakness had longer hospital stays. CAVI remained unchanged, with no significant association between inflammatory markers and arterial stiffness.

Conclusions: EVAR induces a predictable but transient systemic inflammatory and hematological response, with IL-6 and CRP peaking at 48h and most biomarkers normalizing within 1-3 months. The IL-6 response varies substantially across endograft platforms, suggesting device-specific biological reactivity. A more pronounced or protracted inflammatory response is associated with longer hospitalization, while arterial stiffness remains unaffected post-procedure


IL-6 Trends by Endograft (Baseline-48h)
IL-6 (pg/mL)
0
20
40
60
80
100
120
Baseline
24 h
48 h
1. Cook Zenith
2. Cordis Incraft
3. Endologix AFX/AFX2
4. Endologix Alto
5. Endovastec Microport
6. Gore Excluder
7. Lifetech Ankura
8. Lombard Altura
9. Lombard Aorfix
10. Medtronic Endurant
11. Prizma Percutek
12. Terumo Anaconda
13. Terumo Treo


R-CAVI and L-CAVI Over Time
R-CAVI (Friedman p=0.261)
L-CAVI (Friedman p=0.966)
CAVI
5
10
15
20
25
baseline
post
post-2

OP29

ENTIRELY IPSILATERAL FEMORAL TECHNIQUE FOR ILIAC BRANCH DEVICE IMPLANTATION

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[1] Vascular Surgery Department, Klinikum Großhadern, Ludwig Maximilian University, Munich, Germany
[2] Vascular Surgery Department, Klinikum Grosshadern, Ludwig-Maximilians-University, Munich, Germany
[3] Vascular Surgery Department, Klinikum Großhadern Ludwig Maximilian Universitz, Munich, Germany

Introduction: Iliac branch device implantation after previous endovarcular aortic repair is technical challenging, usually demanding upper extremity access, or complex maneuvers to accommodate the neo-aortic bifurcation. Multiple techniques have been described, aiming to avoid the upper extremity access and its subsequent complications.

Objective: To describe a technical approach for transfemoral ipsilateral iliac branch device implantation after previous endovascular aortic repair.

Case Presentation: A 78-year-old male presented with right-sided type IIa and Ib endoleaks following previous fenestrated endovascular repair of a suprarenal abdominal aortic aneurysm. His medical history included arterial hypertension, dyslipidemia, and coronary artery disease. The patient underwent embolization of the inferior mesenteric artery using an Amplatzer plug, followed by implantation of a Zenith Branch Endovascular Graft (iliac bifurcation) on the right side using an entirely ipsilateral femoral technique. Completion angiography demonstrated complete exclusion of the endoleaks. The postoperative course was uneventful.

Technique: The Zenith Branch Iliac System (ZBIS) was initially deployed over a Lunderquist stiff guidewire. Through the device's preloaded catheter, a 0.018-inch hydrophilic guidewire was advanced. After removal of the delivery system, a 16 × 30 sheath was introduced over the stiff Lunderquist guidewire, while an 18-hydrophilic catheter (Navicross) was advanced over the hydrophilic wire. An EnSnare device was then used to capture the 0.018-inch wire, creating a unilateral femoro-femoral through-and-through guidewire loop via the internal iliac branch. Subsequently, selective catheterization and deployment of the internal iliac extension were performed using a 10F steerable sheath (Fustar) advanced over the through-and-through wire.

Conclusion: The entirely ipsilateral femoral technique facilitates internal iliac artery preservation, particularly in patients with prior open or endovascular aortic repair in whom contralateral access may be challenging. This approach may reduce procedural complexity and minimize access-related complications.

OP30

NOVEL HYBRID ENDOVASCULAR SUTURE FREE ARTERIO-VENOUS ANASTOMOSIS TECHNIQUE FOR PRIMARY HAEMODYALISIS ACCESS CONSTRUCTION: A SINGLE-CENTER CASE SERIES

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2nd Vascular Surgery Department, General Hospital of Athens "Laiko", National and Kapodistrian University of Athens, Athens

Aims: Presentation of the results of the hybrid treatment of three end-stage renal disease (ESKD) patients with multiple previous vascular access failures, at the 2nd Vascular Surgery Department of "Laiko" General Hospital of Athens.

Methods: Three male patients (mean age of 64 years) with ESKD and a similar history of multiple, previous failed haemodialysis accesses, were treated in our center. Preoperative comprehensive color flow duplex imaging and CT-venography disclosed patent left brachial arteries and unobstructed axillary and subclavian veins, with no evidence of central venous stenosis in all three of the patients. Under ultrasound and fluoroscopic guidance, a novel technique, consisting of the insertion of a hybrid synthetic graft-to-endograft conduit for AV access, bridging up a conventional synthetic graft (4-7mm GORE® PROPATEN® PTFE graft) on the arterial side of the AVG (brachial artery) with a self-expanding endograft (7×150mm Viabahn®) on the axillary vein, allowing the direct insertion of a graft with open anastomoses on both ends. By performing the proximal venous anastomosis endovascularly, a more distal endovascular access to the central veins is feasible, compromised otherwise by luminal strictures or stenoses ensued by previous failed AVG attempts, which could be the cause of venous outflow impairment.

Results: Mean procedure time was 65 min and mean Fluoroscopy time was 15 min. All 3 procedures were free of complications. Graft surveillance was conducted comprehensively with duplex imaging at 1, 3, 6 months and 1 year post procedure confirming the full patency and haemodynamic efficacy.

Conclusions: The AVG hybrid synthetic graft-to-endograft procedures for AV access have been shown to be feasible and sustainable at 6 months or more. The favourable outcomes highlight the potential applicability and implementation of this technique as a less invasive alternative option with promising sustainability.

OP31

OPTIMIZING INFLOW IN PERCUTANEOUS MECHANICAL THROMBECTOMY FOR ACUTE ILIOFEMORAL DEEP VEIN THROMBOSIS

T. Mansolas, M. Tsotsios, N. Melachroinopoulos, A. Delis, A. Gkremoutis, K. Delis, E. Avgerinos, C. Klonaris

2nd Vascular Surgery, Laiko General Hospital, National and Kapodistrian University of Athens, Athens

Background-Aim: Residual or undertreated inflow disease is a major cause of deep venous thrombosis (DVT) recurrence and stent occlusion after endovascular thrombectomy for iliofemoral DVT. The deep femoral vein (DFV) is emerging as an important inflow vessel alongside the femoral, the popliteal and the tibial veins. The aim of this study is to present four techniques regarding the recanalization of inflow vessels.

Methods: The first case involved an antegrade approach, with access to the deep venous system obtained via the popliteal vein followed by catheterization of the DFV in a retrograde fashion using a curved hook-shaped catheter and mechanical thrombectomy. In cases that this was not feasible, especially when the DFV was extensively diseased and its orifice could not be visualized intraoperatively, an alternative approach was to access the DFV through a profunda-popliteal collateral-communicating vessel and advance the thrombectomy device through it. In another case, our alternative was the 'up-and-over' approach of the DFV, gaining dual access from the ipsilateral great saphenous vein (GSV) and the contralateral femoral vein (FV). This enabled the antegrade thrombectomy of the ilio-caval segment through the GSV, followed by retrograde thrombectomy of the FV, DFV, and popliteal vein from the contralateral FV. Finally, in a case of complete popliteal vein thrombosis, access was obtained via both the posterior tibial veins and catheter thrombolysis was performed.

Results: At a mean follow-up of 12 months, primary patency was maintained in all cases. All patients experienced complete and immediate relief of symptoms following the intervention. No early re-occlusions or significant complications were observed during the follow-up period.

Conclusions: Recanalization of the deep femoral vein (DFV), in combination with thrombolysis of the tibial veins, appears to play a critical role in optimizing venous inflow and supporting durable patency following percutaneous mechanical thrombectomy for acute iliofemoral deep vein thrombosis (DVT).

OP32

STANDARDIZED CLINICAL PHOTOGRAPHY IN MODERN PHLEBOLOGY

D. Chatzelas[1], A. Pitoulias, T. Zampaka, G. Tsamourlidis, I. Kiose, V.-E. Stratinaki, A. Potouridis, G. Pitoulias

2nd Department of Surgery - Division of Vascular Surgery, "G. Gennimatas" General Hospital of Thessaloniki, Aristotle University of Thessaloniki, Thessaloniki

Background-Aim: Chronic venous disease, including varicose veins and venous ulcers, requires accurate longitudinal assessment for diagnosis, treatment planning and outcome evaluation. Clinical photography is widely used in Phlebology; however, variability in image acquisition limits reproducibility and objective comparison. The literature emphasizes that standardized photographic protocols improve documentation quality and reliability, particularly in the assessment of venous ulcers and post-intervention outcomes. The aim of this review was to summarize current evidence on standardized clinical photography in modern Phlebology.

Methods: A narrative review of peer-reviewed literature was performed. Studies addressing wound photography, venous ulcer monitoring, and standardization of clinical imaging were included. Emphasis was placed on practical recommendations applicable to venous disease, and outpatient vascular settings.

Results: The literature consistently identifies key elements of standardized photography: fixed camera-to-subject distance, perpendicular angle, uniform lighting, neutral background, and inclusion of a measurement scale and color reference. In venous leg ulcers, standardized imaging improves accuracy in wound size estimation, and enhances inter-observer agreement. Standardized photography also facilitates objective monitoring of healing progression and response to compression therapy or endovenous interventions. Furthermore, integration with electronic medical records improves accessibility, and supports multidisciplinary care. Training of personnel is highlighted as essential to ensure adherence and maintain image consistency. Studies demonstrate that when standardized protocols are applied, photographic documentation becomes a reliable adjunct to clinical scoring systems.

Conclusions: Evidence supports the implementation of standardized photographic protocols as an integral component of modern Phlebology. In patients with venous disorders, particularly venous ulcers, standardized imaging enhances objectivity, improves follow-up accuracy and strengthens clinical communication. Adoption of structured photographic practices should be encouraged in tertiary vascular units to optimize patient care and research quality.

OP33

FOUR-YEAR RETROSPECTIVE REVIEW OF EVLA AND UGFS FOR VARICOSE VEINS IN SERVICEMEMBERS

Y. Nahaliuk, M. Shcherbina

Dobrobut Multidisciplinary Medical Centre

Objective: To evaluate the effectiveness of EVLA ± UGFS for lower?limb varicose veins in military personnel, focusing on symptom relief, return to duty, and restoration of functional capacity and fitness for frontline service/operations.

Materials and methods: Retrospective analysis of 110 military patients with varicose veins CEAP C2-C6 treated between 2022 and 2026. All procedures were performed at Dobrobut Private Clinic (Kyiv) in collaboration with the National Military Medical Clinical Centre. All patients underwent EVLA; 25 patients received concomitant ultrasound?guided foam sclerotherapy (UGFS). Additional UGFS sessions (1-4) were performed as required. Primary endpoints were technical success, clinical improvement, and complications. Follow?up duration: mean 48 months (4 years).

Results: Technical success of EVLA was 100%. Concomitant UGFS (n = 25) was successful in all treated cases. Recanalization of previously laser?ablated veins occurred in 3 patients (2.7%) and was managed with repeat UGFS. Complications: skin necrosis in 1 patient (0.9%), calf vein thrombosis in 2 patients (1.8%), and hyperpigmentation in 5 patients (4.5%). Overall clinical and anatomic improvement was high across CEAP classes treated.

Conclusions: EVLA provides high technical success and favorable clinical outcomes in military patients with lower?limb varicose veins. Concomitant UGFS is an effective adjunct for residual or recurrent varicosities, with a low complication rate. Treatments were performed at Dobrobut Medical Centre in Kyiv .

Keywords: *endovenous laser ablation, ultrasound?guided foam sclerotherapy, varicose veins, CEAP, military patients, Dobrobut Medical Centre*

OP34

COMPLETE AGENESIS OF THE INFRAHEPATIC INFERIOR VENA CAVA WITH AZYGOS CONTINUATION: A CRUCIAL RADIOLOGIC FINDING FOR CARDIAC SURGICAL PLANNING

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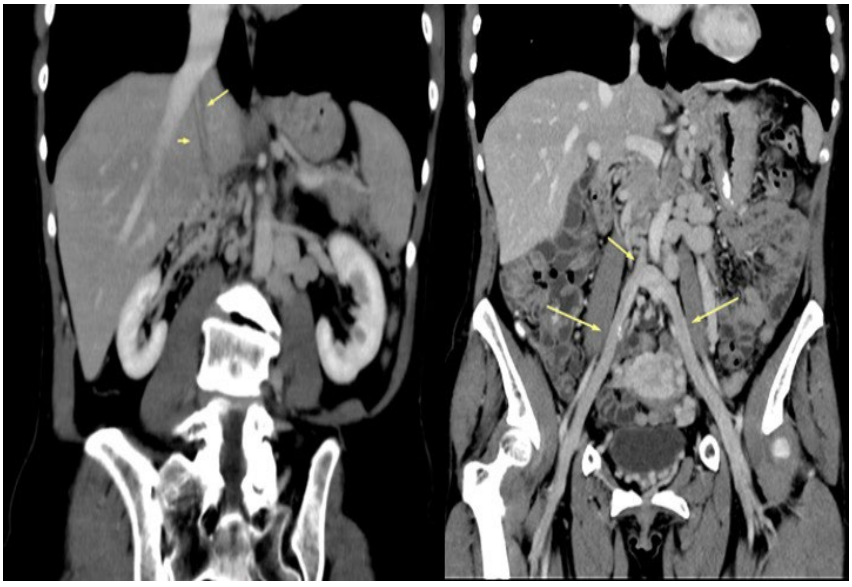
Background-Aim: Congenital interruption of the inferior vena cava (IVC) with azygos continuation is a rare vascular anomaly with a prevalence of approximately 0.6%. This report aims to highlight the diagnostic importance of identifying this variant to prevent life-threatening complications during cardiac surgery and interventional procedures.

Methods: We performed a case-based analysis of contrast-enhanced multidetector computed tomography (MDCT) findings in a female patient to map the complex anatomy of systemic venous return.

Results: MDCT revealed complete agenesis of the infrarenal, renal, and suprarenal IVC segments immediately above the common iliac vein confluence. Systemic venous return from the lower body was redirected via a markedly dilated (18 mm) azygos vein and a prominent hemiazygos vein, both terminating into the superior vena cava (SVC). The hepatic segment of the IVC was hypoplastic (5 mm diameter), with hepatic veins coalescing into a short, isolated segment draining directly into the right atrium without connection to the iliac IVC. Extensive collateralization was noted within the paravertebral and pelvic plexuses.

Conclusions: Preoperative recognition of IVC interruption is critical for selecting the appropriate venous access. While central cannulation (using either a single composite or bicaval approach) remains feasible, peripheral femoral cannulation for cardiopulmonary bypass or ECMO is technically impossible due to IVC discontinuity. Additionally, clinicians must account for restricted endovascular access and increased procedural risks via the femoral route. Detailed radiologic mapping is essential to ensure safe surgical and interventional outcomes.



OP35

SINGLE-CENTER EXPERIENCE WITH F/BEVAR TARGET VESSEL REINTERVENTIONS

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Background-Aim: To report a single-center experience with fenestrated/branched endovascular aortic repair (F/BEVAR), focusing on target vessel durability and the incidence and management of target vessel-related reinterventions.

Methods: All consecutive patients undergoing F/BEVAR for pararenal or thoracoabdominal aortic aneurysms at our institution between 01/2022 and 03/2026 were retrospectively reviewed. Procedural details, number and type of target vessels, intra- and postoperative complications were recorded. Primary endpoints were target vessel patency and target vessel-related reinterventions, defined as any procedure for target-vessel-related endoleak, stenosis, or thrombosis.

Results: A total of 160 patients underwent F/BEVAR with 619 incorporated target vessels. Technical success was 98%. During a median follow-up of 18 months, 28 target vessel-related reinterventions were performed in 16 patients (10.0% of patients; 4.5% of target vessels). Reinterventions involved 16 renal arteries, 7 celiac trunks, and 5 superior mesenteric arteries, reflecting the known higher instability of the renal arteries in branched configurations. The main indications were target vessel endoleaks (n = 19, 3.0%), stenosis (n = 1, 0.1%), and thrombosis/occlusion (n = 8, 1.3%). Endoleaks were treated predominantly with bridging-stent extension, while four were managed with balloon angioplasty alone. All stenoses and occlusions were treated by relining of the bridging stent. All reinterventions were performed with endovascular techniques and were technically successful (100%), without related mortality.

Conclusions: In this single-center experience of 619 target vessels, F/BEVAR achieved high initial technical success. Target-vessel-related reinterventions were required in 4.5% of target vessels during follow-up driven mainly by endoleaks. Endovascular reinterventions were feasible and successful with no mortality, supporting the role of close imaging surveillance and early treatment of target vessel complications as a key component of complex endovascular aortic repair follow-up.

OP36

FEASIBILITY OF BEDSIDE MINOR FOOT AMPUTATIONS UNDER FOOT BLOCK ANESTHESIA, PERFORMED BY VASCULAR SURGEONS

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Background-Aim: Diabetic foot is a devastating complication of diabetes mellitus. Patients suffering from neuropathic ulcers, gangrene or foot infection due to diabetes or critical limb ischemia with tissue loss, need multiple minor amputations and surgical debridement to avoid major amputation. These procedures are traditionally performed in the operating room under anesthesiology supervision, contributing to delays and increased utilization of hospital resources. Aim of this study is to examine feasibility of treating diabetic and ischemic foot necrotic lesions under foot block, performed by vascular surgeons.

Methods: This retrospective study was based on the analysis of medical records of patients admitted in our department between January and December 2025. Patients that were included underwent minor amputation under foot block. Technical success was defined as completion of the procedure without the need for anesthesiology support or conversion to general anesthesia. Data on procedural success, need for conversion, and peri-procedural outcomes were analyzed.

Results: The study group comprised of 37 patients (38 limbs). Most patients were male 75% (n=28) with a mean age of 67,3 years (range 40-86). Comorbidities included diabetes mellitus 84% (n=31), hypertension 78% (n=29), coronary artery disease 49% (n=18), hypercholesterolemia 62% (n=23) and end-stage renal disease 30% (n=11). Interventions for revascularization were performed in 38% of patients. A total number of 72 procedures were performed including toe amputation, transmetatarsal amputation, surgical debridement and stump reconstruction with the use of skin graft. Technical success was achieved in 98% of cases. Limb salvage rate was 84% (n=32)..

Conclusions: Minor foot amputations and surgical debridement can be performed safely under foot block regional anaesthesia, performed by vascular surgeons. This strategy minimizes dependence on operating room availability and anesthesiology support, thereby reducing resource utilization. Moreover, it facilitates timely intervention and offers a less invasive anesthetic approach, particularly advantageous in high-risk patients with significant comorbidities.

OP37

ENDOVASCULAR MANAGEMENT OF ACUTE RIGHT RENAL VEIN THROMBOSIS IN A PATIENT WITH ANTIPHOSPHOLIPID SYNDROME USING A TRANSJUGULAR VENOUS APPROACH

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Aim: To present a rare case of acute right renal vein occlusion that was managed with endovascular treatment.

Methods/Results: A 44-year old man presented with acute right flank and abdominal pain along with acute renal impairment (creatinine 3.52 mg/dl). Renal function was normal a month earlier. His medical history included a presumed autoimmune disorder, ankylosing spondylitis and previous episodes of pancreatitis with portal and left renal vein thrombosis. Thrombophilia screening was negative at the time, so he received anticoagulation only for one year. CT revealed thrombosis of the IVC, iliac veins and right renal vein. The latter was enlarged due to thrombus, and the right kidney was congested and under-perfused. There were numerous venous collaterals around the pancreas and left kidney indicating previous thrombotic episodes. A diagnosis of acute right renal vein thrombosis along with acute on chronic IVC/iliac vein thrombosis was established. Due to the acute renal impairment, it was decided to attempt recanalizingthe occluded venous drainage of the right kidney as a salvage procedure. Due to thrombocytopenia (platelets:85x10^3/μl), thrombolysis was contraindicated. Due to the occluded IVC/iliac venous system, we proceeded with a right transjugular approach under local anesthesia. It was eventually possible to pass a guidewire through the renal vein occlusion and to place a long self-expanding stent (10_{mm}x100_{mm}, EPIC, Boston Scientific) from the right renal vein up to the hepatic portion of the IVC in a chimney configuration. The patient immediately relieved from his right flank and abdominal pain, indicating successful recanalization. He was managed by nephrologists, hematologists and rheumatologists. Renal function improved over the following days to 1.5mg/dl and investigation showed antiphospholipid syndrome. Patient discharged pain-free on the 11th post-op day, on Sintrom, aspirin and immunosuppressants.

Conclusion: This case highlights that endovascular salvage of an acutely occluded renal vein is feasible in selected cases.

OP38

PERCUTANEOUS RADIAL ACCESS FOR ENDOVASCULAR-ASSISTED MATURATION AND PATENCY MAINTENANCE OF ARTERIOVENOUS FISTULAS

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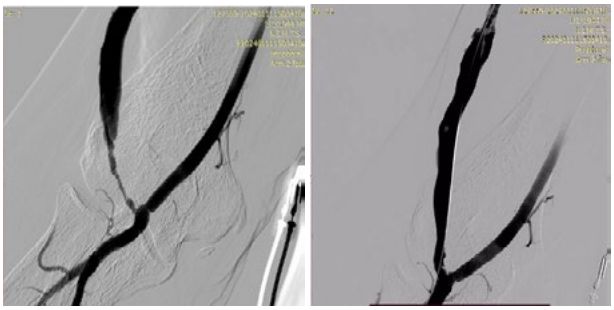
Background-Aim: Maintaining a functional vascular access is essential for hemodialysis patients. Failure of maturation and loss of patency are frequent challenges. We aimed to evaluate the safety and efficacy of percutaneous radial artery access for endovascular-assisted maturation and patency maintenance of arteriovenous fistulas.

Methods: Sixty patients underwent percutaneous angioplasty of arteriovenous access over 18 months. 50 cases involved native fistulas, and 10 synthetic grafts. Radial access was achieved via a 6 Fr sheath under ultrasound guidance. High-pressure drug-coated (paclitaxel) balloons were used in all patients, and stenting (bare or covered) was performed in 10 cases as required. Radial mechanical compression was applied for a duration of 6 hours. Procedural outcomes, patency, and complications were recorded.

Results: Technical success was achieved in all patients. No hematoma, pseudoaneurysm, arterial spasm, or entry-site infection occurred. Radial access allowed minimal bleeding risk, avoided central vessel puncture, preserved vascular patency, and enabled immediate mobilization with discharge after 6 hours. Notably, access patency was maintained even in cases requiring repeated radial punctures during follow-up.

Conclusions: Percutaneous radial artery access is safe and effective for endovascular interventions supporting maturation and maintaining patency in hemodialysis patients. Even with repeated punctures, access patency was preserved. Our findings support radial access as a first-line approach in routine clinical practice.



OP39

EARLY EFFECTS OF THORACIC ENDOVASCULAR AORTIC REPAIR ON AORTIC COMPLIANCE AND LEFT VENTRICULAR MECHANICS

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Background-Aim: The implantation of a thoracic endograft during endovascular repair (TEVAR) may reduce aortic compliance, increasing the left ventricular afterload and potentially altering cardiac performance. This study aimed to investigate the early impact of TEVAR on aortic stiffness and left ventricular systolic and diastolic function using conventional echocardiography, myocardial strain, and myocardial work indices.

Methods: Arterial stiffness was prospectively quantified using the cardio-ankle vascular index (CAVI) in twenty patients with descending thoracic aortic aneurysms undergoing TEVAR. Echocardiographic assessments were performed one day before and one week after the procedure, including left ventricular ejection fraction (LVEF), global longitudinal strain (GLS), left atrial strain, E/e' ratio, and myocardial work indices-global work index (GWI), global constructive work (GCW), global wasted work (GWW), and global work efficiency (GWE)-derived from non-invasive pressure-strain loops.

Results: Following TEVAR, both GLS and LVEF declined significantly ($p<0.001$ for both). Indices of diastolic function, including left atrial strain and the E/e' ratio, pointed to early impairment ($p<0.001$). Myocardial work assessment demonstrated a reduction in GWI ($p=0.040$). In parallel, arterial stiffness increased significantly ($p=0.018$), while the decrease in GLS showed a strong positive correlation with the rise in CAVI ($r=0.686$, $p=0.005$), supporting an association between increased aortic stiffness and compromised myocardial mechanics.

Conclusions: TEVAR appears to be associated with early changes in both left ventricular systolic and diastolic function, accompanied by an increase in arterial stiffness. The relationship observed between myocardial deformation and CAVI underscores the potential contribution of aortic stiffening to post-TEVAR cardiac dysfunction, with possible implications for cardiovascular outcomes and overall survival.

Table: Echocardiographic findings and CAVI one day before and one week after the procedure

Parameter	Pre-TEVAR	Post-TEVAR	P-value
Age (years)	72 ± 11.2		
Female sex (%)	30%		
Arterial stiffness			
▪ **CAVI**	10.32 ± 1.94	11.42 ± 1.71	0.018
Left ventricular systolic function			
▪ **LVEF (%)**	56.86 ± 2.09	54.80 ± 1.78	<0.01
▪ **GLS (%)**	−19.40 ± 2.54	−18.41 ± 2.51	<0.001
Myocardial work indices			
▪ **GWI (mmHg%)**	1779 ± 336	1693 ± 329	0.040
▪ **GCW (mmHg%)**	2209 ± 387	2112 ± 356	0.074
▪ **GWW (mmHg%)**	170.60 ± 81.00	187.66 ± 94.00	0.362
▪ **GWE (%)**	92.46 ± 4.12	91.67 ± 4.10	0.334
Diastolic function			
▪ **LA strain (%)**	26.80 ± 4.37	24.46 ± 4.34	0.010
▪ **E/e′**	10.10 ± 1.50	12.10 ± 1.06	0.010

OP40

COMPLEX ENDOVASCULAR REPAIR FOLLOWING FAILED-EVAR; MIDTERM OUTCOMES

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Objective: Loss of the proximal sealing zone following endovascular abdominal aortic repair (EVAR) may necessitate complex endovascular reinterventions. The aim of this study was to present 30-day and follow-up outcomes of patients treated with complex endovascular repair after failed EVAR.

Methods: A retrospective analysis was conducted of patients treated with parallel graft techniques (chimney EVAR, ChEVAR) or fenestrated/branched endovascular aortic repair (F/BEVAR) following failed EVAR between January 1, 2018 and December 1, 2025. Primary endpoints were technical success, mortality, and target vessel patency at 30 days and at maximum follow-up.

Results: A total of 35 patients were included [100% male; median age 78 years (Q1: 69, Q3: 86)] with a median aneurysm diameter of 95.7 mm (Q1: 72, Q3: 111). Nine patients (25.7%) were treated emergently, including four (11.4%) for rupture. Seven patients (20%) presented with caudal graft migration without evident endoleak, while the remaining 28 (80%) had type Ia endoleak (including two with concomitant type Ib). Off-the-shelf techniques were used in 14 patients (66.7%) [11 (31.4%) with t-Branch and nine (25.7%) with parallel grafts], while 15 patients (42.8%) received custom-made endografts. A total of 127 visceral vessels were revascularized. Technical success was 97.1%. Thirty-day survival was 94.2% (33/35 patients). Seven major adverse events occurred within 30 days. Target vessel patency was 100%. Only one reintervention related to vascular access was required. Median follow-up was 20 months (Q1: 1, Q3: 80). Estimated survival at 24 months was 72.5% (SE: 9%). No aortic-related deaths were observed. Estimated freedom from reintervention was 88.1% (SE: 8%) at 24 months. Estimated freedom from any endoleak was 75% (SE: 9%) at 24 months. Overall, five type II endoleaks, one gutter-related endoleak in the setting of CERIB, and two type IIIc endoleaks were observed.

Conclusions: Complex endovascular aortic repair after failed EVAR is technically demanding; however, it appears safe and feasible, with high technical success and target vessel patency rates. Mortality and reintervention rates within the first 24 months highlight the importance of close surveillance.

OP41

TREATING STRATEGIES BASED ON ULTRASONOGRAPHIC DISTRIBUTION OF LOWER LIMB VENOUS INSUFFICIENCY

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Background-Aim: Our aim is to present the disease distribution and treating strategy among patients with severe lower limb venous insufficiency.

Methods: In this retrospective study, patients treated for a CEAP stage 3-6 within a period of 5 years (01/2021-12/2025) in our vascular unit were included. Basic patients' demographics and ultrasonographic distribution of the venous insufficiency were recorded. Treatment strategy and main outcomes are reported.

Results: Overall, 282 patients were treated. According to ultrasonographic mapping, patients were divided as follows: Group A (no GSV trunk insufficiency, 15%); Group B (entire GSV trunk insufficiency, 45%); Group C (partial GSV trunk insufficiency, 35%) and Group D (SSV trunk insufficiency, 5%). The distribution of CEAP stages was the following: Stage 3 (36.2%), Stage 4 (55%), Stage 5 (5.3%), Stage 6 (3.5%). Almost 11% of patients had a history of SVT. In Group A, only resection of varicose veins/tributaries was selected. In Group B, saphenectomy or laser ablation was selected depending on patients' characteristics (including age, weight, the presence of SVT and diameter of GSV). In Group C, partial saphenectomy above the knee or laser ablation was selected depending on patients' characteristics. In Group D, resection of SSV was selected.

In 95% of patients, improvement of symptoms was observed within the first month. All ulcers were healed. There were almost 10% hematomas that were absorbed within 1 month. In 10%, there was numbness reported. No wound infection or lymphorrhea were observed.

Almost 35% of these patients were lost during follow-up. Among the rest 65%, no recurrence was observed during a follow-up of 23+/-3 months.

Conclusions: Distribution of patients with severe lower limb venous insufficiency may vary and not always include the entire GSV or SSV trunks. Treating strategy must be individualized depending on distribution and patient's characteristics.

OP42

PHARMACOLOGICAL TREATMENT OF LYMPHEDEMA: CURRENT EVIDENCE AND EMERGING THERAPEUTIC TARGETS

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Background-Aim: Lymphedema remains a chronic, progressive disorder for which standard care is still centered on compression, skin care, exercise, and complex decongestive therapy, rather than drug treatment. Current international consensus documents do not recognize an established pharmacological standard of care, and older agents such as diuretics and benzopyrones have not shown sufficient evidence for routine use. The aim of this review was to summarize current evidence on pharmacological treatment of lymphedema and to highlight emerging therapeutic targets.

Methods: A literature review was performed using verified peer-reviewed publications and consensus documents. Emphasis was placed on clinical studies, translational investigations, and review articles evaluating pharmacologic strategies in primary and secondary lymphedema.

Results: Available evidence suggests that inflammation is a central driver of lymphedema progression, making immune-modulating therapies the leading pharmacologic candidates. Ketoprofen is the best studied systemic agent in humans; exploratory studies reported histopathologic and skin-thickness improvements, although clear volume reduction was limited, and evidence remains preliminary. Topical tacrolimus has shown strong preclinical efficacy, and early clinical feasibility in breast cancer-related lymphedema, but confirmatory trials are still needed. Leukotriene B4 antagonism emerged from compelling experimental work as another promising pathway, although clinical translation has been challenging. Additional investigational approaches include VEGF-C-based lymphangiogenic therapy and anti-fibrotic strategies, both supported mainly by preclinical data.

Conclusions: Current evidence does not support any pharmacological therapy as established treatment for lymphedema in routine practice. Nevertheless, anti-inflammatory, lymphangiogenic, and anti-fibrotic pathways represent credible emerging targets, with ketoprofen and topical tacrolimus among the most clinically advanced candidates. High-quality trials are required before pharmacotherapy can be integrated into standard lymphedema management.

OP43

HANDLING OF INTERNAL ILIAC ARTERY DURING OPEN TREATMENT OF PATIENTS WITH AORTOILIAC ANEURYSMS

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Background-Aim: The coexistence of iliac artery aneurysm (IAA) may increase the difficulty or complexity of treatment in a patient with an infrarenal AAA. Deciding how to handle the iliac artery bifurcation may raise a concern, especially in younger patients. We aim to present a cohort of such patients and discuss on proper management.

Methods: This was a retrospective study including cases treated in our institution within a period of five years. Eligible patients were treated for an infrarenal aortoiliac aneurysm. At least one iliac artery should have a diameter > 3 cm. Basic characteristics of patients and the procedures are presented.

Results: Overall, 11 patients were treated within a period of 5 years. All patients were male and mean age was 67±7 years. 8 (73%) patients had a bilateral common IAA (CIAA) and 3 (27%) an ipsilateral CIAA. In 4 (36.5%) patients, both distal anastomoses were made in the CIAs, in 3 (27%) patients both distal anastomoses were made in the CFAs, in 3 (27%) patients, one anastomosis was made in the CIA and one in the CFA and in 1 (9.5%) patient, both anastomoses were made in the CFA combined with a separate graft to the left IIA and a reimplantation of the inferior mesenteric artery. Regarding postoperative outcomes, one patient presented with buttocks ischemia, that lasted for one week. No death, no stroke, no wound infection and no colon ischemia was reported. No erection dysfunction was reported. During the mean follow-up of 2.3±7 years, patency was 100% and there was no graft infection reported.

Conclusions: During aortoiliac aneurysm repair, antegrade flow to the iliac arteries should be preserved when feasible. IMA should be revascularized when there is risk for colon ischemia. Open surgery still remains the best option for young patients with long life expectancy.

OP44

FEMORAL ARTERY ENDARTERECTOMY USING A BOVINE PERICARDIAL PATCH - A SYSTEMATIC REVIEW

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Aim: Endarterectomy with patch placement remains the golden standard for the treatment of atherosclerotic femoral artery stenosis. Bovine pericardial patch (BPP) has been introduced lately as an alternative to venous patch. Aim of this review is to evaluate pooled data on early and late outcomes of femoral artery endarterectomy (FAE) with bovine pericardial patch.

Methods: A systematic review was conducted utilizing the Pubmed, Scopus and Google scholar research engines. All clinical studies published up to March 2026 evaluating patients that were treated with FAE and BPP placement were included. Key-words used in this study included 'femoral artery endarterectomy', 'bovine pericardial patch' and 'outcomes'. Basic characteristics of the studies and patients were recorded. Early and late outcomes of this procedure were evaluated.

Results: A total of 8 studies (published from 2009 up to 2026) included a total of 711 patients and 723 limbs treated with FEA and BPP placement. There were 7 retrospective studies and 1 prospective study. The male gender rate was 64.4% and the mean age of all patients was 71+/-10 years. The following comorbidities were reported: Arterial hypertension (87%), Diabetes mellitus (43.8%), Dyslipidemia (68.5%), Smoking history (69%), Coronary disease (51%). 58.7% of patients were treated for acute limb ischemia or critical limb ischemia. 30-day mortality rate was 5.8%, hematomas rate was 4%, lymphoceles rate was 6.8%, and wound infection rate was 11.9%. Mean follow-up was 19.7 (1-33) months. Within follow-up, there was a 10.5% total amputation rate and a 3-year primary patency of 86.2%.

Conclusions: EFA with BPP placement is a safe and efficient technique to treat a common femoral artery stenosis. However, more prospective studies with longer follow-up are needed for safer conclusions.

OP45

EFFECTIVENESS OF POSTOPERATIVE TWO-LAYER COMPRESSION BANDAGING IN PATIENTS UNDERGOING VARICOSE VEIN SURGERY

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Background-Aim: Effective postoperative bandaging after varicose vein surgery is critical to prevent complications such as hematoma, edema, and impaired venous return. Proper compression facilitates early mobilization, reduces complication risk, and improves recovery and quality of life. This study aimed to evaluate the effectiveness and safety of the two-layer compression bandage system (UrgoK2, Urgo-Medical, Chenove Fr) in patients undergoing varicose vein surgery.

Methods: Sixty-eight patients (52 women, 16 men), aged 27-82 years, underwent varicose vein surgery over six months were included. 55 underwent laser ablation and microphlebectomies and 13 GSV stripping followed by microphlebectomies. All patients received the UrgoK2 compression system, consisting of two layers: the inner K Tech providing moderate pressure increasing with walking and enhancing venous return, and the outer K Press providing therapeutic compression and stabilization for up to 7 days. Postoperative outcomes, complications, and mobilization were recorded.

Results: No postoperative complications, including hematoma, edema, or impaired venous return, were observed. All patients were discharged the same day, mobilized immediately, and returned to daily activities without issues. The two-layer compression system provided stable compression, improved venous return, less postoperative pain- without intermediate postoperative visit and offered safety and comfort during recovery.

Conclusions: Postoperative compression with the two-layer compression bandage system provides multiple benefits after varicose vein surgery, including edema reduction, hematoma prevention, pain relief, improved circulation, decreased risk of DVT, and enhanced closure of treated veins. It contributes to accelerated recovery, enhanced patient comfort, and improved surgical outcomes, without necessitating addiotional medical intervention nor increasing the clinical workload.

OP46

INTERNAL-CAROTID ARTERY DISSECTION (ICAD): FROM PRESENTATION TO MEDICAL AND VASCULAR THERAPY

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Introduction: Although ICAD may account for 2-3% of all-ischemic-strokes, it is responsible for 10-25% of these in <50-year-old subjects. Rare in children and elderly(typical-age-bracket:40-45 years), ICAD is linked to male predilection$_{(55\%)}$ and seasonality$_{(winter)}$.

It entails an intimal-tear or rupture of the vasa-vasorum in the arterial-wall, leading to intramural-hematoma-formation and a false-lumen. Cerebral-ischaemia may ensue secondary to thromboembolism, haemodynamic impairment(ICA-stenosis) or both. Media-to-adventitia dissection may result in pseudoaneurysm.

ICAD aetiology comprises: **(a)Traumatic-Causes**:major-trauma resulting from blunt(1-3% occurrence of ICAD) or penetrating neck injuries(e.g.RTAs) or minor-trauma/mechanical-strain after sudden neck movement, chiropractic-manipulation, heavy-lifting, intense-coughing, sports and **(b)Spontaneous-Onset**(2.6-8.93 per100,000people/annum), often associated with connective-tissue-disorders: Ehlers-Danlos(type-IV), Marfan-Syndrome, FMD, amid hypertension, smoking, respiratory-infections, migraine.

The **classic-symptoms-triad**(<30%) consists of **(a)**pain, sudden, unilateral neck pain or headache(eye/temple), **(b)**partial Horner's-Syndrome:Drooping eyelid(ptosis) and constricted pupil(miosis) due to sympathetic-nerves compression, and **(c)**ischaemic events:TIA/CVA. Pulsatile-tinnitus and lower cranial-nerve-palsies(IX-XII) are not uncommon. Most dissections(80%) settle alone with recanalization in 3-6/12. Stroke-risk is highest within the first 2/weeks after the initial-tear. Low-recurrence is attached(1%/year), except in underlying connective-tissue-disease. **Conservative-medical-treatment**(3-6/12) remains the gold-standard entailing antiplatelets or anticoagulants both appearing(CADISS) equally effective in stroke-prevention. **Endovascular-therapy** is warranted if medical-therapy fails to prevent symptoms or further ICA-stenosis. **Surgery** is rarely performed today.

Methods: We report on a case-series of ICAD patients from presentation to medical and vascular therapy.

Results (table)

Conclusions: Our limited case-series highlight the increasing clinical severity-course and outcome with increasing grades of ICAD morphological-stratification(Zhou et al.2024). Early diagnosis, morphology-classification, symptoms and surveillance are cardinal in clinical-decision-making. Antiplatelet and/or anticoagulant therapy are used individually or in combination with good-effect. Endovascular-therapy may be considered in deteriorating symptomatic-cases under optimal-pharmacotherapy and in pseudoaneurysms. Future-research should aim at further defining the natural disease-course, optimal intervention(medical-endovascular) across the ICAD-stratification, the identification of controllable risk-factors and the role of revascularization, if any.

Age, Sex	Site of Dissection	Classification*	Aetiology	Clinical Presentation	Imaging	Treatment	Follow-up	Outcomes
54/M	Lt ICA	Type I (hematoma)	Spontaneous	Asymptomatic	CTA: <70% diameter stenosis	Single antiplatelet therapy	2 years	no findings in 1st year
47/M	Rt ICA	Type I (hematoma)	Mild Traumatic, Post-physiotherapy	Asymptomatic	Duplex/ MRA: 35% diameter stenosis	Statin for 2 years	2 years	27% diameter stenosis / Asymptomatic on Salospir for 1 year
60/M	Rt ICA	Type II (intimal flap)	Spontaneous	Asymptomatic	CTA: intimal flap, ≥70% stenosis	Dual antiplatelet therapy for 1 year	1 year	Duplex /Asymptomatic, stable imaging findings
53/M	Lt ICA	Type II (dissection)	Spontaneous	Local pain	CTA: intimal flap, ≥70% stenosis	Dual antiplatelet therapy	6 months	Improved, Asymptomatic
44/F	Lt ICA	Type II (dissection)	Spontaneous	Aphasia, Visual Disturbances for <5min	MRA: >80% diameter stenosis (false and true lumen)	Tinzaparin 10.000 + Plavix for 3 months, Plavix for 1 year, Salospir for life	14 years	Anatomical normalization in <6months / Asymptomatic
28/M	Rt ICA	Type II (hematoma)	Spontaneous	Horner's Syndrome, Dysarthria, Headaches for 10 days	CTA: >85% stenosis	Dual antiplatelet therapy for 1/12, Single antiplatelet ongoing	2 months	persistent Horner's, Headaches, speech unremarkable
18/M	Rt ICA	Type III	Major Trauma (RTA)	Asymptomatic	MRA: dissecting aneurysm, expanding	Single antiplatelet therapy	4 years	Asymptomatic, dilatation
62/M	Lt ICA	Type IVB (tandem occlusion)	Spontaneous	Major Stroke (Intubated-ICU)	CTA: flame-shaped vessel occlusion	Antiplatelet and Anticoagulant therapy, no vascular intervention	45 days	ICU stay / Death
37/M	Lt ICA	Type IVB (tandem occlusion)	Spontaneous	Major Disabling Stroke, Right hemiplegia	CTA: flame-shaped vessel occlusion	Antiplatelet and Anticoagulant therapy, no vascular intervention	6 months	full-blown hemiplegia / peripatetic

**Classification of spontaneous carotid artery dissections according to Zhou et al. (2024 J Vasc S): Type I, intramural hematoma or dissection with <70% luminal narrowing; Type II, intramural hematoma or dissection with ≥70% luminal narrowing; Type III, dissecting pseudoaneurysm; Type IVA, extracranial carotid artery occlusion; Type IVB, tandem occlusion.*

OP47

THE CARDINAL ROLE OF INTERNAL CAROTID ARTERY DISSECTION(ICAD) MORPHOLOGY IN THE DETERMINATION OF CLINICAL OUTCOMES: A NOVEL AETIOLOGICAL-MORPHOLOGICAL-CLINICAL-TIME (A.M.C.T.) CLASSIFICATION

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Introduction: ICAD occurs when blood enters the arterial wall through a tear in the tunica-intima or vasa-vasorum, creating initially an intramural-trauma(hematoma) which leads to significant morphological-changes and varying clinical-outcomes.

Up to 2/3 of dissections(48-60%) are extracranial, within 2-3cm of the carotid-bifurcation. Significant diameter stenosis(>50%) due to false-lumen expansion is noted in up to 73% with total-occlusion in up to 20% of cases. Extension further to the skull-base is reported in up to 65% of extracranial-ICADs.

Expanding vessel-wall-injury coursing subintimally may result in true-ICA-stenosis yet subadventitial-dissection predisposes to pseudosneurysm.

The prognosis for spontaneous-ICAD is favorable, with approximately 75% of patients achieving a good recovery.

2/3 of afflicted subjects(69%) sustain ischemic-neurovascular-events(TIA to major_CVA), the ICAD accounting for up to 25% of ischemic-events among those <50. Local-symptoms entail ipsilateral headache/neck pain, Horner's-syndrome(25%) and pulsatile-tinnitus.

70% of patients settle long-term reaching symptoms-resolution, and 80% have ICA-recanalization$_{(100\%)}$. Mortality is <5% in spontaneous-ICAD but increases markedly in major-trauma.

Methods: In the presence of multiple complex-morphology-stratifications, we advocate a simple novel **AETIOLOGICAL-MORPHOLOGICAL-CLINICAL-TIME(A.M.C.T.)** classification based on morphology-extent-symptoms-follow/up of ICAD, with adjunct letter-designations describing the cause, symptoms, stenosis, aneurysm-formation and follow/up as follows:

A) Haematoma:[(Spont.,Trauma.)(Lcl.,Exten.)(Sympt:0,Loc,CVA_{MIN},CVA_{MAJ})(Sten: <50%,<70%,≥70%)(Aneurysm:0,1,pseud)(Steady,Improved,Deteriorated,Resolved)(F/u-time)

B) Dissection:[(Spont.,Trauma.)(Lcl.,Exten.)(Sympt:0,Loc,CVA_{MIN}, CVA_{MAJ})(Sten: <50%,<70%,≥70%)(Aneurysm:0,1,Pseud)(Steady,Improved,Deteriorated,Resolved)(F/u-time)

C) Occlusion:[(Spont.,Trauma.)(Lcl.,Extra-cran,Intra-cran)(Sympt:0,Loc,CVA_{MIN}, CVA_{MAJ})(Steady,Improved,Deteriorated,Resolved)(F/u-time)

We stratified our case-series accordingly, and associate the morphology and aetiology with clinical-presentation, outcomes and follow/up.

Results (Table)

Conclusion: Our proposed novel **A.M.C.T./classification** enables prompt, succinct, expansive and accurate stratification of our case-series based on **Aetiology**, **Morphology** of lesion, **Clinical**-severity and **Time** of Follow/up, readily discernible by both clinicians and investigators at a glance, while still comprehensive. The clinical-outcomes appear to correlate well with the increasing grades of the **A.M.C.T./classification**. Sample-volume-expansion will substantiate the efficacy of this classification in clinical-practice.

Age, Sex	Site of Dissection	AMC	Aetiology	Extension of dissection	Clinical Status	Stenosis	Aneurysm	Follow-up	Outcome
28/M	Rt ICA	A	Spontaneous	Local	Local	≥70% (85%)	0	3 months	Improved
			A.C.M.T.: A-Haematoma [Spont., Lcl., S_{Loc}, ≥70%, $Aneurysm_0$, Improved, 3/12]						
47/M	Rt ICA		Traumatic (Mild)	Local	0	<50% (35%)	0	2 years	Improved
			A.C.M.T.: A-Haematoma [Trauma., Lcl., S_0, <50%, $Aneurysm_0$, Improved, 2yrs]						
54/M	Lt ICA	B	Spontaneous	Local	0	<70%	0	2 years	Resolved
			A.C.M.T.: B-Dissection [Spont., Lcl., S_0, <70%, $Aneurysm_0$, Resolved, 2yrs]						
44/F	Lt ICA		Spontaneous	Local	Minor Ischaemic	≥70%	0	14 years	Resolved
			A.C.M.T.: B-Dissection [Spont., Lcl., $S_{CVA_{MAJ}}$, ≥70%, $Aneurysm_0$, Resolved, 14yrs]						
53/M	Lt ICA		Spontaneous	Local	Local	≥70%	0	6 months	Improved
			A.C.M.T.: B-Dissection [Spont., Lcl., S_{Loc}, ≥70%, $Aneurysm_0$, Improved, 6/12]						
60/M	Rt ICA		Spontaneous	Local	0	≥70%	0	1 year	Steady
			A.C.M.T.: B-Dissection [Spont., Lcl., S_0, ≥70%, $Aneurysm_0$, Steady, 1yr]						
18/M	Rt ICA		Traumatic (Major)	Local	0	≥70%	Pseud	4 years	Steady
			A.C.M.T.: B-Dissection [Trauma., Lcl., S_0, ≥70%, $Aneurysm_{pseud}$, Steady, 4yrs]						
37/M	Lt ICA	C	Spontaneous	Intra-cranial	Major Ischaemic	100%	0	6 months	Improved
			A.C.M.T.: C-Occlusion [Spont., Intra-cran., $S_{CVA_{MAJ}}$, $Aneurysm_0$, Improved, 6/12]						
62/M	Lt ICA		Spontaneous	Intra-cranial	Major Ischaemic	100%	0	45 days	Deteriorated - Death
			A.C.M.T.: C-Occlusion [Spont., Intra-cran., $S_{CVA_{MAJ}}$, $Aneurysm_0$, Deteriorated, 45d]						

OP48

SUPERFICIAL-FEMORAL-ARTERY(SFA) AND EXTERNAL-CAROTID-ARTERY(ECA) TWO HIGH-RESISTANCE-TO-FLOW ARTERIES WITH MARKED DIFFERECE IN ATHEROMATOSIS SUSCEPTIBILITY: HAEMODYNAMIC DISPARITY THROUGH COMPREHENSIVE COMPARISON OF MORPHOLOGY, FLOW-VELOCITITIES, VOLUME-FLOW AND RESISTANCE-TO-FLOW

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Introduction: The Superficial-Femoral-Artery(SFA) and the External-Carotid-Artery(ECA) are two medium-sized arteries with relatively high-flow-resistance; however, they exhibit a significant difference in the occurrence of major(≥70%) obstructive-arterial-disease, the former representing one of the most common arteries for endovascular or open-vascular-intervention, while the latter being among the best-protected arteries against occlusive-atherosclerosis, often functioning as a natural bypass in cases of Internal-Carotid-Artery(ICA) stenosis or occlusion.

Purpose: To evaluate the true hemodynamic difference between the Superficial-Femoral-Artery(SFA) and the External-Carotid-Artery(ECA) through a comprehensive study of morphology(lumen), flow-velocities, volume-flow and resistance-to-flow.

Materials and Methods: Based on strict criteria, 52 healthy individuals were included:27 men and 25 women, with a mean age of 61.03(median:65; IQR:55-70.75) and 59.16(median:60;IQR:45-70) years, respectively. The SFA and ECA were examined bilaterally within 1-2 cm of the femoral and carotid bifurcation respectively (a total of:104SFAs and 104ECAs) at rest in a horizontal position, using modern color-ultrasonography. Evaluated were:(1)Time-Averaged-Velocity-Mean(TAVM),(2)Mean-of-Peak-Velocities(mean-of-PV), (3)End-Diastolic-Velocity(EDV), (4)Peak-Systolic-Velocity(PSV), (5)Pulsatility-Index(PI=[PSV−EDV]/TAVM), (6)Resistive-Index(RI=[PSV−EDV]/PSV), (7)PSV/EDV-index(P/S-index),(8) Mean-Diameter=[DiameterSystolic+DiameterDiastolic]/2), (9)Cross-Sectional-Area(CSA=π×[MeanDiameter]^2/4),(10)Mean-Volume-Flow(MVF=TAVM×CSA), (11)Acceleration-Time(AT). The mean of three technically-optimal measurements/parameter was calculated. Statistical Analysis: t-test(P≤ 0,05).

DESIGN: A Cross-sectional study conducted prospectively; IRB-approved; true cross-over design to eliminate bias.

Results: Diameter and CSA in the SFA(mean:0.6587cm;0.3519cm^2) were significantly greater than those in the ECA(mean:0.4296cm;0.1486cm^2)(p≤0.0001).

TAVM and mean-of-PVs (mean:8.9505cm/s;13.4155cm/s) in the SFA were significantly lower(p≤0.0001;p≤0.0001) than those in the ECA(mean:20.0219cm/s;33.6592cm/s).

MVF in the SFA(mean:172.6342ml/min) and the ECA(mean:180.5195 ml/min)(p≤0.5) didn't differ statistically.

The PSV in the SFA(mean:85.62692cm/s) was similar to that in the ECA(mean:85.35135cm/s)(p≤0.11).

The EDV in the SFA(mean:2.9656cm/s) was significantly lower than that in the ECA(mean:16.7819 cm/s)(p≤0.0001). Further to the EDV, the other flow resistance indices in the SFA:PI(mean:8.984), RI(mean:0.96967),S/D-index(mean:59.8977), and AT(mean:0.102833)—were all significantly higher than those of the ECA(meanPI:2.1405;RI:0.797822;S/D-index:8.223327;AT:0.0715) (all: p≤0.0001).

Conclusions: Comparatively, the ECA is a vessel of significantly lower resistance-to-flow compared to the SFA, as confirmed by all hemodynamic indices evaluated (EDV,PI,RI,S/D-index,AT), even though the SFA(mean_diameter:0.6587cm) is a larger diameter vessel than the ECA(mean_diameter:0.4296cm), with the latter's mean diameter being 34.7% smaller. TAVM and mean-of-Peak-Velocities, the main factors reflecting mean-shear-stress, were more than double in the ECA compared to the SFA. Contrasts in diameter, velocities, and flow resistance result in the SFA having the same mean-Volume-Flow(MVF) as the ECA. Despite its larger lumen, the SFA emerged as the vessel with much lower flow-velocities and much higher resistance-to-flow, confirming its role as a "Long-Conduit" more frequently subject to obstructive disease.

OP49

UNDERTREATMENT OF CHRONIC VENOUS DISEASE: A POPULATION-BASED STUDY

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Background-Aim: Chronic venous disease (CVD) is very common and is associated with deterioration in quality of life (QoL) when left untreated. Despite its high prevalence, it is still considered largely underdiagnosed and undertreated. This study aims to determine treatment rates and modalities across the spectrum of CVD.

Methods: A cross-sectional, population-based study was conducted using a geographically representative random sample recruited through community pharmacies. Participants completed structured questionnaires including demographic data, symptoms and treatment history including compression stocking utilization, pharmacologic agents and invasive modalities (stripping, ablation or sclerotherapy). CVD staging (C0s + C1: mild; C2 + C3: moderate; C4-C6: severe) was self-assessed using standardized visual aids.

Results: Of 3147 approached, 2093 were eligible participants. The overall prevalence of CVD was 62.9% [95% confidence interval (CI): 60.6%-65.3%]. 1227 provided detailed CVD treatment history and comprise our sample analysis. Use of compression stockings was 10.6%, 27.4% and 36.7% in mild, moderate and severe CVD responders, respectively. Among those using stockings only 25.6% reported daily application. 61% of responders reported no medical treatment. 25.6% reported venoactive drug use (mild CVD: 13.7%; moderate CVD: 27.7%; severe CVD: 46.7%). A small percentage of CVD responders reported some form of prior intervention (10%), with the frequency increasing with CVD severity (mild: 4.5%; moderate: 10.1%; severe: 22.1%). Stripping or phlebectomies was the most common intervention across all CVD stages (mild: 1.9%; moderate: 7.9%; severe: 12.5%), followed by endovenous ablation (mild: 1.1%; moderate: 1.6%; severe: 6.9%) and sclerotherapy (mild: 1.5%; moderate: 1.2%; severe: 5.3%).

Conclusion: CVD remains significantly undertreated in the Greek population non-withstanding its high prevalence and measurable impact on patient QoL. The discrepancy between disease burden and therapeutic intervention suggests significant failings in patient awareness, referral patterns, and healthcare access. Early recognition and appropriate intervention are warranted to ensure disease progression and timely QoL-years improvement.

OP50

SIGNIFICANCE OF GENDER-RELATED MORPHOLOGICAL AND HAEMODYNAMIC DISCREPANCIES IN LOWER EXTREMITY ARTERIAL CIRCULATION

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Introduction: Marked biological and clinical discrepancies in the lower extremity circulation have been noted between males and females primarily attributable to anatomical size, hormonal influences, and the manifestation of vascular diseases.

Hypothesis: Based on pertinent clinical outcomes evidence, limited published material on comparative flow dynamics and personal experience, our hypothesis was that gender may be related to significant morphological and haemodynamic discrepancies that have evaded academic focus and may be fundamental in clinical decision making.

Purpose: In the paucity of comprehensive prior evidence the present study was conducted with purpose of extracting the discrepancies, if any, in the arterial lumen size, the arterial flow velocities, the volume flow and resistance to flow in consecutive subjects equally representing the two genders.

Methods: The CFA, SFA, PFA and Popliteal Artery were investigated comprehensively using high quality contemporary colour flow duplex imaging. Examination was conducted in the horizontal position at full rest (>30 min) at temperature controlled conditions (23+/-1oC). The femoral arteries were studied within 2 cm of the bifurcation, and the popliteal artery within 2 cm of the femoral condyle, all bilaterally. The following parameters were evaluated (mean of 3 technically optimal measurements):

DESIGN: Cross-sectional study, IRB approved, consisting of two groups recruited sequentially upon meeting stringent criteria. A true cross-over design in the sequence of the vessels evaluation was adopted to prevent bias. DOB determined which side to study first.

STUDY SUBJECTS: 30 males and 30 females comprised the study subjects, a total of 120 limbs, effectively 480 arteries negotiated and well over 2000 artery-data evaluations of which 1440 entered the study calculations.

RESULTS

Conclusion: The study has extracted most significant discrepancies between the two genders which were undetermined and unrecognised hitherto. CFA, SFA, PFA and Popliteal were all significantly smaller vessels in females than males. Contrary to this and based on more than one haemodynamic parameters, proximal lower extremity resistance to flow was significantly lower in females than males, which was associated with significantly higher PSV, EDV, Mean of PV and TAVM. The higher TAVM made up for the smaller artery caliber in femoro-popliteal arteries among the females so as to meet the mean volume flow of the males, despite the body-frame difference. Since higher pulsatile normal flow velocities militate in favour of proportional shear stress forces the study findings provide robust explanation as to the aetiology of inherent atheroprotection among the females withstanding the activity of risk factors parallel to hormonal influences.

OP51

INFRARED THERMOGRAPHY FOR EARLY DIAGNOSIS OF PERIPHERAL ARTERIAL DISEASE AND DIABETIC NEUROPATHY AND OPTIMISATION OF MINOR AMPUTATION LEVEL

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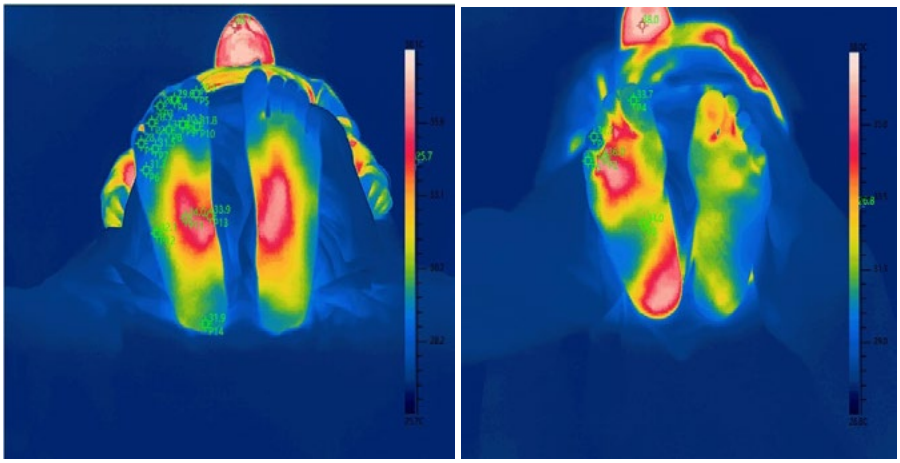
Background: Peripheral arterial disease (PAD) and diabetic foot ulceration (DFU) are serious conditions with a significant clinical burden. Early recognition is essential to prevent ulceration, infection, and limb loss. This study evaluated infrared thermography as a non-invasive tool for early diagnosis of PAD and diabetic neuropathy and for guiding minor amputation level selection.

Methods: Infrared thermographic imaging was performed in four equal groups (80pts): healthy individuals, PAD patients, DM patients without PAD, and combined PAD/DM patients. All participants underwent standardised imaging following 15-minute acclimatisation. Fourteen anatomical reference points per foot were analysed, and temperature distribution patterns and histograms were constructed. Thermography was also applied in patients scheduled for minor amputations to determine the optimal level based on local temperature thresholds predictive of tissue viability and wound healing.

Results: Each group demonstrated a characteristic thermal pattern. Healthy individuals showed symmetrical temperature distribution, while PAD patients exhibited reduced foot temperature and a downward shift in distribution curves. DM patients demonstrated elevated temperatures with narrower distributions (<4°C range), while PAD/DM patients showed mixed patterns. This contrasts with healthy individuals, whose temperature range exceeded 6°C and exhibited a gradual pattern from the plantar centre toward the periphery.

Thermographic analysis enabled clear differentiation between entities and provided functional insight into perfusion status beyond standard clinical assessment, particularly in cases with overlapping or unclear clinical presentation. In patients undergoing minor amputations (n=10), all wounds healed when thermography-guided levels were followed. In contrast, in cases where thermographic guidance was not followed (n=2), wound healing failed, resulting in major amputation.

Conclusion: Infrared thermography is a promising, non-invasive tool for early detection of PAD and diabetic neuropathy and for guiding minor amputation level selection. By identifying disease-specific thermal patterns and tissue viability, it may improve clinical decision-making and reduce limb loss. Further validation in larger studies is warranted.



OP52

PERIOPERATIVE OUTCOMES USING THE GORE EXCLUDER CONFORMABLE ENDOGRAFT IN PATIENTS WITH EXTREME PROXIMAL AORTIC NECK ANGULATIONS DURING EVAR

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Objective: Severe angulation of the proximal aortic neck often renders it hostile, increasing the risk of type Ia endoleak and endograft migration. The aim of this study was to present 30-day outcomes of patients undergoing endovascular abdominal aortic aneurysm (AAA) repair using the GORE Excluder Conformable device in the presence of extreme proximal neck angulation.

Methods: A single-center retrospective analysis was conducted of patients who underwent elective endovascular AAA repair between October 2022 and December 2025. Inclusion criteria included proximal aortic neck α or β angulation >75°. Primary endpoints were technical success, survival, presence of type Ia endoleak, endograft migration >5 mm, and type II endoleak within 30 days.

Results: Fourteen patients (71% male; mean age 77 ± 8.3 years) with a mean aneurysm diameter of 62.4 ± 14 mm were electively treated and included in the analysis. Mean proximal neck diameter was 24.9 ± 7.8 mm and mean neck length was 34 ± 13 mm. Mean α and β angulation were 65 ± 22° and 81 ± 9.7°, respectively. Overall, 42% (6/14) of patients had α angulation >75°, 85% (12/14) had β angulation >75°, and 28.6% (4/14) had both α and β angulation >75°.

Primary technical success was 93%, due to the need for proximal aortic cuff placement in one patient for intraoperative type Ia endoleak, achieving successful proximal sealing. Thirty-day survival was 100%. All patients underwent computed tomography angiography within 30 days. No cases of endograft migration >5 mm or type Ia endoleak were detected. Overall, 35% (5/14) of patients developed type II endoleak, without aneurysm sac enlargement.

Conclusions: Severe proximal aortic neck angulation may compromise the proximal sealing zone of endografts. The use of the GORE Excluder Conformable device in extreme angulations is associated with very favorable perioperative outcomes, particularly in the presence of adequate neck length. However, long-term postoperative surveillance remains essential for early detection of potential neck-related complications.

OP53

ASSOCIATION BETWEEN AMPUTATION LEVEL AND LENGTH OF HOSPITAL STAY IN PATIENTS WITH DIABETIC FOOT: A RETROSPECTIVE STUDY

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Background: Diabetic foot complications are among the most severe consequences of diabetes mellitus, frequently leading to infection, hospitalization, and lower extremity amputation. Despite advances in management, these conditions remain a major cause of morbidity and healthcare burden. The level of amputation, classified as minor or major, may significantly influence recovery time, functional outcomes, and length of hospital stay. This study aimed to evaluate the association between the type of amputation and the duration of hospitalization in patients with diabetic foot.

Methods: This retrospective study included 129 patients treated for diabetic foot at the University Clinical Center of Kosovo between January and June 2023. A total of 144 surgical interventions were analyzed, including minor amputations (toe and transmetatarsal) and major amputations (below- and above-knee). Demographic and clinical data were collected from medical records. Length of hospital stay was categorized as short (1-10 days) and long (>10 days). Statistical analysis was performed using descriptive statistics and the Chi-square test, with $p < 0.05$ considered statistically significant.

Results: The mean age of patients was 68.1 ± 9.8 years, with a predominance of males (69.8%). Minor amputations accounted for 80.6% of procedures, while major amputations represented 19.4%. Overall, 82.2% of patients had a hospital stay of 1-10 days. Among minor amputations, 85% were associated with short hospital stays, and only 4% exceeded 20 days. In contrast, 64% of major amputations required hospitalization longer than 20 days, and 75% were classified as long stays. A statistically significant association was found between amputation level and hospital stay ($\chi^2 = 57.16$, $p < 0.001$).

Conclusions: The level of amputation is strongly associated with the length of hospital stay in patients with diabetic foot. Minor amputations are linked to shorter hospitalization, whereas major amputations result in significantly prolonged stays and increased clinical burden. Early surgical decision-making and multidisciplinary management, including rehabilitation planning, are essential to optimize outcomes and reduce healthcare resource utilization.

Keywords: *diabetic foot, amputation level, surgical outcomes, retrospective study, hospitalization*

OP54

ENDOVASCULARTREATMENT OF SACCULAR FALSE LUMEN ANEURYSM IN CHRONIC DISSECTION WITH DOUBLE BARREL TEVAR

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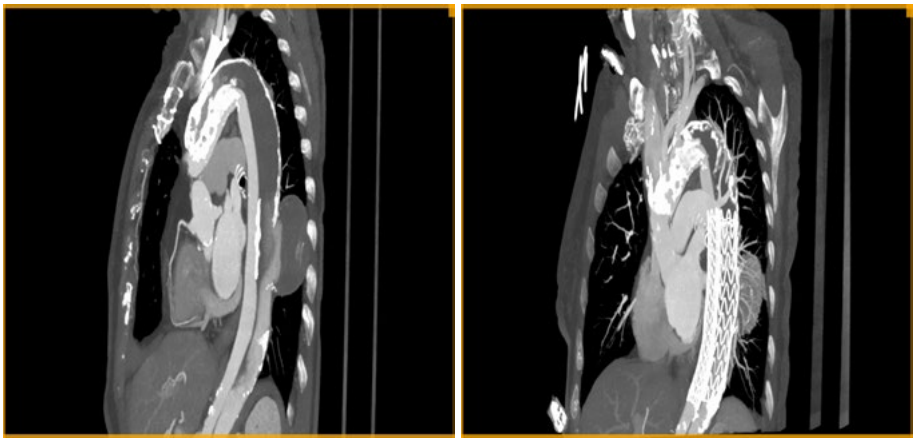
Patient data and procedure: We report the case of a 76-year-old female with prior mechanical Bentall procedure for acute type A dissection 21 years ago presented with progressive saccular aneurysmal degeneration of the descending thoracic aorta (maximum diameter 74 mm) with continuous expansion originating from the false lumen. Due to suspected contained rupture, endovascular exclusion was indicated. As the connections between true and false lumen are unclear we decided to treat both with TEVAR. Percutaneous bilateral femoral access was established. The true and false lumina were selectively catheterized under angiographic and transesophageal echocardiographic guidance. Two thoracic stent grafts were simultaneously deployed, one in the true lumen and one in the false lumen. Completion angiography confirmed satisfactory exclusion without endoleak or malperfusion. The postoperative course was uneventful.

Conclusion: Simultaneous dual-lumen TEVAR may represent a feasible bailout or individualized treatment strategy in selected patients with chronic post-dissection aneurysm and complex lumen configuration. Careful imaging guidance and procedural planning are essential to avoid malperfusion and neurological complications.



OP55

GIANT ISOLATED TRUE SUPERFICIAL FEMORAL ARTERY ANEURYSM IN A MARATHON RUNNER: A RARE CONSEQUENCE OF REPETITIVE BLUNT TRAUMA FROM DEEP TISSUE SELF-MASSAGE

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Introduction: Isolated aneurysms of the superficial femoral artery (SFA) are exceptionally rare, representing less than 1% of peripheral aneurysms. While typically degenerative, they can occasionally present in healthy individuals following localized mechanical stress. High-performance athletes frequently attribute thigh masses to musculoskeletal pathology, often self-managing with deep tissue massage. We present a unique case of an isolated SFA aneurysm likely exacerbated by repetitive foam rolling.

Case Description: A 52-year-old healthy male marathon runner presented with a one-year history of a right thigh swelling. Lacking cardiovascular risk factors, he initially mistook the mass for a muscle spasm and frequently applied vigorous compression using a rigid gym foam roller to relieve symptoms. Imaging revealed a large, isolated fusiform aneurysm of the mid-SFA. Due to the high risk of stent fracture in an active athlete, open surgical repair was performed. Intraoperative findings confirmed a focal aneurysm with healthy proximal and distal vessels. The aneurysm was resected and reconstructed using a 6-mm polytetrafluoroethylene (PTFE) interposition graft, and the sac was closed over the graft. The patient had an uneventful postoperative course and was discharged on day two with excellent recovery.

Discussion: This case underscores the potential hazards of performing self-myofascial release on undiagnosed masses. Repetitive blunt trauma from a foam roller likely exacerbated the arterial pathology through localized mechanical injury. In active patients where endovascular stents are prone to biomechanical failure due to repetitive thigh flexion, open interposition grafting remains the gold standard, providing durable exclusion. Clinicians must maintain a high index of suspicion for vascular etiologies when evaluating atypical thigh masses in athletes before recommending or clearing them for physical therapy.

OP56

ENDOVASCULAR TREATMENT IN LERICHE SYNDROME AND CONCOMITANT HORSESHOE KIDNEY: A CASE REPORT

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The contemporary treatment strategy for Aortoiliac Occlusive Disease (AIOD) involves both open surgical and endovascular approaches. For TASC II D lesions specifically, aortobifemoral bypass has been the gold standard. However, endovascular options have gained increasing popularity in recent years, as Covered Endovascular Reconstruction of the Aortic Bifurcation (CERAB) has emerged as an alternative to open surgery in high-risk patients. Between these strategies, the selection of the appropriate modality may be complicated by the preoperative identification of anatomical abnormalities that may impede an open surgical plan. We present the case of a 61-year-old male patient with left lower extremity rest pain in the setting of Leriche syndrome, with a concomitant horseshoe kidney, identified incidentally during preoperative imaging. After considering the kidney-related anatomical variation and the patient's high-risk profile for open surgery, an endovascular approach was selected using the anatomically fixated endograft AFX-2 (Endologix). The unique unibody design of AFX-2 endograft allowed precise apposition of the bifurcated graft at the aortic bifurcation thereby reducing the risk of intraoperative aortic or iliac rupture, as well as endoleak development associated with the simultaneous deployment of two covered iliac stents within an aortic stent graft in the traditional CERAB procedure. The patient underwent successfully a modified CERAB procedure with retrograde femoral access using the anatomically fixated endograft AFX-2. Postoperatively, distal pulses were immediately palpable. The patient's recovery was complicated by the development of acute compartment syndrome. This case report illustrates that in selected patients with AIOD and concomitant anatomical abnormalities that complicate a standard open surgical approach, the use of the anatomically fixated AFX-2 endograft may be a valuable tool in endovascular procedures based on CERAB principles.

OP57

HYBRID RETROGRADE REVASCULARIZATION SYMPTOMATIC INNOMINATE ARTERY STENOSIS

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Background-Aim: Primary atherosclerotic stenosis of the innominate artery is a rare but hemodynamically significant pathology that carries profound thromboembolic risks and can induce vertebrobasilar insufficiency. Traditional transfemoral endovascular approaches present severe embolic risks due to atheromatous aortic arch navigation. This case presents the hybrid endovascular treatment of a symptomatic, near-occlusive innominate artery stenosis using a retrograde approach through the right common carotid artery to maximize cerebral protection.

Methods: A 58-year-old male presented with right upper limb claudication and exertion-induced dizziness. Computed tomography angiography revealed a heavily calcified, eccentric >80% stenosis at the innominate artery ostium. Due to high embolic risk, a hybrid retrograde approach was utilized. Under general anesthesia, a right cervical incision exposed the common carotid artery. Following systemic heparinization, surgical cross-clamping of the distal common carotid artery was performed for absolute cerebral protection. Through a retrograde puncture, the lesion was crossed and pre-dilated. A 10 × 27 mm Bentley BeGraft balloon-expandable covered stent was precisely deployed at the innominate ostium. Retrograde flushing was conducted prior to clamp removal to prevent cerebral embolization.

Results: Technical success was achieved with immediate restoration of antegrade blood flow and no perioperative neurological deficits. The patient's symptoms completely resolved. He was discharged on postoperative day one on dual antiplatelet therapy. At the 6-month follow-up, the patient remained entirely asymptomatic, and duplex ultrasound confirmed excellent stent patency without restenosis.

Conclusions: The hybrid retrograde access through the common carotid artery combined with covered stenting is a highly safe and effective alternative for complex innominate artery lesions. It ensures optimal catheter support, permanent plaque exclusion, and absolute cerebral protection during deployment, avoiding the severe risks of arch navigation.

OP58

EMERGENCY EVAR FOR RUPTURED INFRARENAL ABDOMINAL AORTIC ANEURYSM COMPLICATED BY HEPARIN-INDUCED THROMBOCYTOPENIA AND ANTICOAGULATION-RELATED RETROPERITONEAL EXTRAVASATION FROM TYPE II ENDOLEAK

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Background: Ruptured abdominal aortic aneurysm [rAAA] is a life-threatening emergency. Ruptured endovascular aneurysm repair [rEVAR] is the preferred treatment in suitable anatomies. We present a rare case of rEVAR complicated by retroperitoneal bleeding form a type II endoleak on grounds of heparin-induced thrombocytopenia [HIT].

Methods: A 70-year-old male with unremarkable medical history presented with lower back pain. Computed tomography angiography [CTA] revealed a contained rupture of a 10cm infrarenal AAA. The patient was hemodynamically stable and underwent rEVAR under local anesthesia. Completion angiography showed a type IA endoleak, successfully treated with a proximal cuff. Final angiography confirmed complete exclusion with no endoleak. The patient was discharged on the 5th postoperative day in good condition.

Results: Four days later, he was presented with acute right lower limb ischemia (Rutherford IIa). CTA demonstrated occlusion of the right profunda femoris and popliteal arteries. Emergency embolectomy restored distal perfusion. Postoperatively, therapeutic low molecular weight heparin was initiated. A progressive drop in platelet count raised suspicion of HIT, confirmed by high anti-PF4 antibody levels. Anticoagulation was switched to fondaparinux. On the 7th postoperative day, the patient complained about symptom recurrence and CTA revealed thrombosis of the right EVAR limb and a type II endoleak from the inferior mesenteric artery [IMA]. Due to HIT and the limb being viable, re-intervention was postponed. Subsequently, a drop in hemoglobin levels and a continued need for blood transfusions led to repeat CTA, which showed enlargement of the retroperitoneal hematoma secondary to the type II endoleak. The patient underwent successful embolization of the IMA, after which hemoglobin stabilized. At discharge, he was ambulatory with improved walking distance and a right ABI of 0.58. He was discharged on rivaroxaban and cilostazol.

Conclusion: This case illustrates type II endoleaks in the setting of rEVAR and anticoagulation may contribute to persistent hemorrhage requiring invasive treatment.

OP59

URGENT COMPLEX ENDOVASCULAR REPAIR OF A LARGE THORACOABDOMINAL ANEURYSM WITH CAUDAL MIGRATION OF A PRIOR EVAR GRAFT

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Background: Thoracoabdominal aortic aneurysms (TAAAs) in patients with prior infrarenal endovascular aortic repair pose significant technical and clinical challenges. We report a case of urgent complex endovascular repair of a symptomatic 10 cm TAAA in a patient with prior infrarenal EVAR.

Methods: A 77-year-old male patient with multiple comorbidities presented with left lower quadrant abdominal pain. The patient had been subjected to an EVAR in 2010 and was subsequently lost to follow-up. Computed tomography angiography [CTA] demonstrated a large 10cm TAAA and caudal migration of the infrarenal graft. He was hemodynamically stable and underwent urgent endovascular repair.

Results: The operation was performed under general anesthesia with a lumbar cerebrospinal fluid (CSF) drainage catheter in place. Access was obtained via surgical cutdown of the right axillary artery, right common femoral artery (CFA), and percutaneous catheterization of the left CFA. First, a COOK Zenith Alpha TEVAR graft was deployed and bridged to a Zenith T-Branch graft. The T-Branch graft was then bridged to the previous EVAR graft using a bifurcated Zenith endograft with extension grafts for each limb. Final angiography confirmed complete exclusion of the aneurysm with no endoleak. The procedure was technically challenging due to severe angulation of the previously implanted endograft, which was notably stiff, significantly hindering catheter and device navigation as well as advancement of new graft components. After 23 postoperative days, the patient was discharged to a rehabilitation center, non-ambulatory requiring nasal oxygen.

Conclusion: This case illustrates the importance of lifelong surveillance following EVAR and highlights the feasibility but also the technical challenges and the substantial risks of complex endovascular repair in the presence of hostile pre-existing endografts.

OP60

ENDOVASCULAR SALVAGE OF A COMPLEX TYPE IA ENDOLEAK USING A CUSTOM FENESTRATED ALTURA ENDOGRAFT AND BEFLARED STENT

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Background-Aim: Type Ia endoleak is a serious complication after endovascular aneurysm repair (EVAR), associated with persistent aneurysm sac pressurization, sac enlargement, and risk of rupture. Its treatment is particularly challenging in patients with hostile proximal anatomy or failed prior infrarenal repair. We present a case of successful endovascular salvage using a custom fenestrated platform with target vessel preservation.

Methods: A 76-year-old male with previous EVAR for infrarenal abdominal aortic aneurysm was found on follow-up imaging to have a persistent type Ia endoleak with aneurysm sac enlargement to 6.23 cm. He underwent elective endovascular reintervention with a custom-made fenestrated Lombard Meridian Altura endograft incorporating a single fenestration for the right renal artery. The graft dimensions were 27 × 9 mm. Target vessel incorporation was achieved using a Bentley BeFlared bridging covered stent measuring 6 × 27 mm.

Results: The procedure was completed successfully with accurate deployment of both devices. Completion angiography demonstrated complete exclusion of the type Ia endoleak, effective proximal sealing, and preservation of right renal artery perfusion without angiographic compromise. No residual endoleak was detected at the end of the procedure.

Conclusions: Endovascular salvage of complex type Ia endoleak with a custom fenestrated Meridian Altura endograft and BeFlared bridging stent is feasible and effective. This approach provides proximal seal extension while maintaining renal artery patency and may offer a valuable solution in selected patients with complex post-EVAR anatomy.

OP61

HYBRID MANAGEMENT OF A GIANT BILOBED RIGHT SUBCLAVIAN ARTERY ANEURYSM

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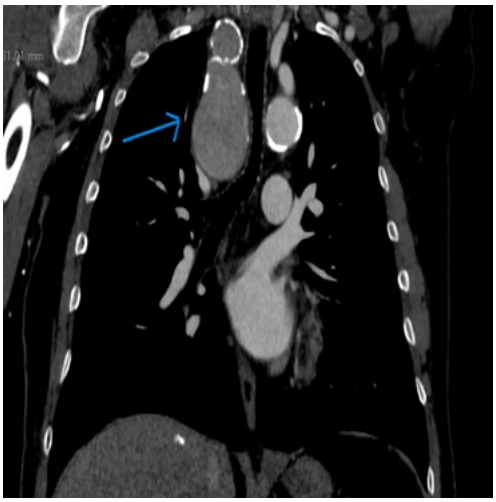
Background: Subclavian artery aneurysms (SAAs) are rare vascular lesions, accounting for less than 1% of all peripheral aneurysms, and are associated with risks of rupture, embolization, and local compression. Complex aneurysm morphology and vessel tortuosity may significantly limit the feasibility of purely endovascular repair. In such anatomically challenging cases, hybrid techniques may provide safe and durable treatment options.

Case Presentation: A 70-year-old male was diagnosed with an asymptomatic giant bilobed right subclavian artery aneurysm measuring more than 5 cm in diameter, discovered incidentally. The right vertebral artery originated distal to the aneurysm. Preoperative computed tomography angiography (CTA) demonstrated complex bilobed morphology with significant tortuosity and kinking, making accurate anatomical assessment and procedural planning difficult.

An initial attempt at endovascular repair was performed using right brachial and right femoral artery access with intraoperative angiography. Multiple attempts to advance guidewires across the aneurysm were unsuccessful due to severe angulation and inability to maintain a stable intraluminal pathway. A second endovascular attempt several weeks later using alternative catheter systems also failed.

A hybrid repair was subsequently performed. A 12 × 50 mm **Viabahn** endograft was deployed via right common carotid artery access, extending from the brachiocephalic artery to the right common carotid artery, thereby excluding the origin of the right subclavian artery. This was followed by carotid-subclavian bypass using a 7-mm ringed PTFE graft and central ligation of the right subclavian artery. The postoperative course was uneventful, and the patient was discharged on postoperative day two. Six-month follow-up imaging confirmed complete thrombosis and durable exclusion of the aneurysm.

Conclusion: This case highlights the importance of adaptability and hybrid planning in the management of complex SAAs. When conventional endovascular approaches fail, hybrid repair using alternative access strategies provides an effective and durable solution.



OP62

BILATERAL EXTRA-ANATOMIC ILIACO-AXILLARY BYPASSES AS A PREPARATION FOR THORACIC ENDOVASCULAR ANEURYSM REPAIR PROCEDURE DUE TO A LARGE THORACIC ANEURYSM IN A PATIENT WITH CHEST DEFORMITY

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Background: Management of complex thoracic aortic aneurysms in patients with severe chest wall deformities and prior cardiac surgeries presents a significant surgical challenge. In such cases, conventional open repair may be contraindicated, necessitating alternative hybrid approaches.

Case presentation: We report the case of a 30-year-old male with a large thoracic aortic aneurysm, underlying Marfan syndrome, Evans syndrome, and severe chest deformities including scoliosis and pectus excavatum. The patient had previously undergone mechanical aortic valve replacement and a Bentall procedure. Due to the prohibitive risk of reoperative open surgery, a staged hybrid approach was undertaken. Bilateral extra-anatomic iliaco-axillary bypasses using PTFE grafts were created to facilitate supra-aortic debranching and establish an adequate proximal landing zone for thoracic endovascular aneurysm repair (TEVAR) (Figure 1). Both subclavian arteries were transposed to the common carotid arteries to preserve cerebral perfusion, with additional reconstruction of vertebral circulation. Subsequently, TEVAR was successfully performed using two thoracic endografts. Postprocedural angiography revealed type Ia and Ib endoleaks. The patient declined further intervention and was discharged against medical advice. Seven days later, he suffered a fatal hemorrhagic event at home.

Conclusion: This case highlights the feasibility of bilateral extra-anatomic iliaco-axillary bypasses as a preparatory step for TEVAR in patients unsuitable for conventional surgery. Despite technical success, the presence of endoleaks and refusal of re-intervention contributed to a fatal outcome, underscoring the importance of close postoperative monitoring and timely management of complications.

OP63

FENESTRATED (FEVAR) VERSUS CHIMNEY EVAR (CHEVAR) FOR COMPLEX AORTIC ANEURYSMS; MIDTERM OUTCOMES

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Objective: The chimney technique using parallel grafts represents a valuable alternative when fenestrated endovascular aortic repair (FEVAR) is not available or feasible for the treatment of complex abdominal aortic aneurysms (AAA). The aim of this study was to present the outcomes of the chimney technique and further compare them with those of FEVAR.

Methods: This was a single-center retrospective study of patients treated with the chimney technique for complex AAA between January 1, 2016 and December 31, 2024, conducted in accordance with STROBE guidelines. A comparative analysis between elective chimney cases and elective FEVAR cases was also performed. Primary endpoints included technical success, 30-day mortality, and overall survival during follow-up.

Results: A total of 72 patients underwent chimney repair (94.4% male), of whom 60 were elective cases. In the overall chimney cohort, technical success was 98.6% and 30-day mortality was 11.1%. Gutter-related endoleaks were detected in 6.9% of patients, all resolving within the first 30 days. Mean follow-up was 36.8±5.8 months. Estimated survival was 48.2% [standard error (SE) 9.5%], and freedom from reintervention was 87.3% (SE 6.5%) at 60 months.

During the same period, 41 patients underwent FEVAR. Elective chimney patients had significantly larger aneurysms compared to FEVAR patients [63 (Q1: 56, Q3: 78) mm vs 56 (Q1: 54, Q3: 66) mm; p=0.02]. No statistically significant differences were observed in technical success (p=0.79) or 30-day mortality (p=0.30). Mean follow-up was longer in the chimney group compared to the FEVAR group (40.0±6.3 vs 27.5±6.3 months; p=0.03). Survival was significantly lower in the chimney group (79.4%, SE 5.3% vs 96.0%, SE 3.9%; log-rank p=0.003), while freedom from reintervention was similar between the two techniques (p=0.88).

Conclusions: The chimney technique demonstrated acceptable 30-day outcomes, particularly considering the inclusion of urgent cases. When elective chimney cases were compared with elective FEVAR, early outcomes were comparable. However, long-term survival was significantly lower in the chimney group.

OP64

COMPLETE MANAGEMENT OF ABDOMINAL AORTIC ANEURYSM IN PATIENTS WITH CHRONIC KIDNEY DISEASE WITHOUT IODINATED CONTRAST: A REPORT OF TWO CASES

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Objective: To present two cases of endovascular abdominal aortic aneurysm (AAA) repair in patients with chronic kidney disease (CKD) performed without iodinated contrast.

Methods: Two patients with AAA and stage IV CKD (eGFR 25-30 mL/min/1.73 m^2) underwent endovascular repair (January 2026). Preoperative planning was based on duplex ultrasound and non-contrast CT. Procedures were performed entirely using CO? angiography. Follow-up was conducted with duplex ultrasound.

Results: A 65-year-old male with a 4.2 cm AAA and a 3.2 cm left internal iliac artery aneurysm underwent repair with an Incraft endograft and iliac bifurcation reconstruction (CERIB/CERIIB). A 73-year-old male with a 5 cm rapidly expanding AAA underwent repair with an AFX II endograft. In both cases, procedures were completed using CO? angiography without iodinated contrast. Complete aneurysm exclusion was achieved with no endoleak. No postoperative renal deterioration occurred. At 30 days, duplex ultrasound confirmed patent endografts without endoleak.

Conclusions: Endovascular AAA repair without iodinated contrast is feasible in CKD patients using careful preoperative imaging, CO?-guided intervention, and duplex-based follow-up.

OP65

DYNAMIC RENAL MALPERFUSION IN TBAD: WHEN TO INTERVENE?

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Background: Acute type B aortic dissection (TBAD) is typically managed conservatively in the absence of complications. However, malperfusion syndromes may evolve dynamically, and the optimal timing of intervention—particularly in cases of isolated renal malperfusion—remains uncertain.

Case Presentation: We report a case of acute TBAD in a hemodynamically stable patient presenting with flank pain and mild renal impairment. Initial imaging demonstrated dynamic renal artery obstruction without evidence of visceral or limb ischemia. A conservative strategy with strict blood pressure control and close monitoring was initiated, with initial clinical stability.

However, during surveillance, the clinical course evolved, with sudden deterioration characterized by reduced urine output and worsening renal function, consistent with progression to complicated TBAD. Urgent thoracic endovascular aortic repair (TEVAR) was performed to seal the primary entry tear at the lesser curvature. Following the procedure, there was immediate restoration of renal perfusion, with rapid improvement in diuresis, renal function, and blood pressure control.

Discussion: This case highlights the dynamic nature of malperfusion in TBAD, where initially stable patients may rapidly progress to organ-threatening ischemia. Renal malperfusion may result from dynamic obstruction, which can fluctuate and abruptly worsen. Current evidence does not clearly define the optimal timing for intervention in isolated renal involvement. Based on available data and our experience, intervention should be considered in the presence of clinical deterioration, including declining renal function, oliguria, or failure of early improvement under optimal medical therapy.

Conclusion: Isolated renal malperfusion in TBAD requires close surveillance due to its potential for rapid progression. A stepwise approach is appropriate; however, prompt endovascular intervention is warranted when signs of renal deterioration emerge, as it can lead to immediate reversal of organ dysfunction.

Keywords: type B aortic dissection; renal malperfusion; TEVAR; dynamic obstruction; endovascular treatment

OP66

BERAB TECHNIQUE

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Background: Aortoiliac occlusive disease represents one of the most challenging manifestations of peripheral arterial disease in terms of therapeutic management. Over recent years, high-risk open surgical reconstruction, such as aortobifemoral bypass, has increasingly been replaced by contemporary minimally invasive endovascular approaches, including the Covered Endovascular Reconstruction of the Aortic Bifurcation (CERAB) technique.

Objective: To present a clinical case treated using the novel Bare Endovascular Reconstruction of the Aortic Bifurcation (BERAB) technique.

Case Presentation: A 61-year-old male presented with intermittent claudication at 100-150 meters (Rutherford class III). His medical history included arterial hypertension, dyslipidemia, diabetes mellitus, active smoking, and atrial fibrillation. Clinical examination revealed reduced pulse volume at the level of both common femoral arteries with absent distal pulses. The ankle-brachial index (ABI) was 0.6 on the right and 0.5 on the left. Endovascular intravascular lithotripsy of the infrarenal abdominal aorta was performed, followed by iliac artery angioplasty with balloon-expandable stents. The postoperative course was uneventful, and the patient was discharged with improved bilateral ABI values on single antiplatelet therapy combined with therapeutic-dose anticoagulation.

Technique: The BERAB technique is based on intravascular lithotripsy of the aorta combined with implantation of bare-metal stents. Lithotripsy was performed using a 7- or 8-mm Shockwave catheter via one vascular access, while a non-compliant balloon was introduced through a second access in a "hugging-balloon" configuration. A self-expandable bare-metal stent was then deployed in the infrarenal aorta, with additional balloon-expandable bare-metal stents placed in the iliac arteries as required. This approach offers a low-profile solution using 6- and 7-French introducers, preserves collateral circulation, and maintains the feasibility of future up-and-over interventions.

Conclusion: BERAB is a novel endovascular strategy combining the conceptual advantages of CERAB with the low-profile characteristics of intravascular lithotripsy and bare-metal stenting. While early results appear promising, further studies are required to evaluate long-term efficacy and durability.

E-POSTERS

EP01

SURGICAL MANAGEMENT OF A GIANT AORTIC ROOT ANEURYSM: TECHNICAL PEARLS FROM AN EMERGENT BENTALL PROCEDURE

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Background-Aim: Giant aortic root aneurysms exceeding 10 cm are exceptionally rare and associated with imminent risk of rupture, severe aortic valve insufficiency, and major technical challenges during surgical repair. Evidence guiding optimal intraoperative strategy in such extreme anatomy remains limited. We report a rare case of a giant aortic root aneurysm managed with emergent open repair, emphasizing critical technical pearls that enabled a safe and successful outcome.

Methods: A 58-year-old male presented with acute chest pain and refractory hypertension. Transthoracic echocardiography revealed severe aortic regurgitation, marked left ventricular dilatation, and severely reduced ejection fraction, with an estimated aortic root diameter exceeding 11 cm. Computed tomography angiography confirmed a giant aortic root aneurysm without evidence of dissection. Given the high risk of rupture, immediate surgical intervention was undertaken. Preventive right axillary artery cannulation was performed prior to sternotomy, followed by early systemic heparinization to allow rapid initiation of cardiopulmonary bypass in case of catastrophic rupture. A standard Bentall procedure was completed using a mechanical valved conduit combined with a Valsalva graft, with meticulous mobilization and reimplantation of both coronary buttons.

Results: The procedure was completed without intraoperative complications. The postoperative course was uneventful, and the patient was discharged on the fifth postoperative day. At three- and nine-month follow-up, the patient demonstrated marked functional improvement, recovery of left ventricular systolic function, and excellent prosthetic valve and graft performance, with no evidence of adverse events.

Conclusions: Surgical management of giant aortic root aneurysms requires advanced planning, alternative cannulation strategies, and precise operative execution. The Bentall procedure remains a robust and definitive solution in the setting of extreme aortic root dilatation and severe valve dysfunction. Sharing technical experience from such rare cases contributes valuable insight toward improving outcomes in high-risk aortic surgery.

EP02

NUTCRACKER SYNDROME: A CASE REPORT OF SURGICAL MANAGEMENT WITH GONADAL VEIN TRANSPOSITION

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Backround-aim: Compression of the left renal vein (LRV), commonly referred to as Nutcracker Syndrome, is a rare and frequently underdiagnosed condition. The aim of this study is to report a case of nutcracker syndrome successfully managed in our department and to highlight its clinical presentation and surgical treatment.

Methods: A 56-year-old female presented with chronic left flank pain and dysuria. During the diagnostic workup, microscopic hematuria was detected. Computed tomography angiography (CTA) revealed compression of the left renal vein between the aorta and the superior mesenteric artery, consistent with nutcracker syndrome.

Results: An open surgical approach was selected for treatment. Gonadal vein transposition was successfully performed without intraoperative or postoperative complications. The patient required a 24-hour stay in the intensive care unit and was discharged after a total hospital stay of six days. At follow-up, the patient reported significant symptom relief, and Doppler ultrasound demonstrated a patent transposed gonadal vein with adequate flow into the inferior vena cava.

Conclusions: Accurate diagnosis of nutcracker syndrome requires a high index of suspicion, combined with appropriate imaging. Surgical intervention, such as gonadal vein transposition, can provide effective symptom relief. Because most patients with nutcracker syndrome are young, long-term follow-up with scheduled ultrasound examinations should be maintained.

EP03

VALVE-SPARING SURGERY IN ACUTE TYPE A AORTIC DISSECTION: NINE-YEAR EXPERIENCE OF THE NATIONAL REFERENCE CENTER

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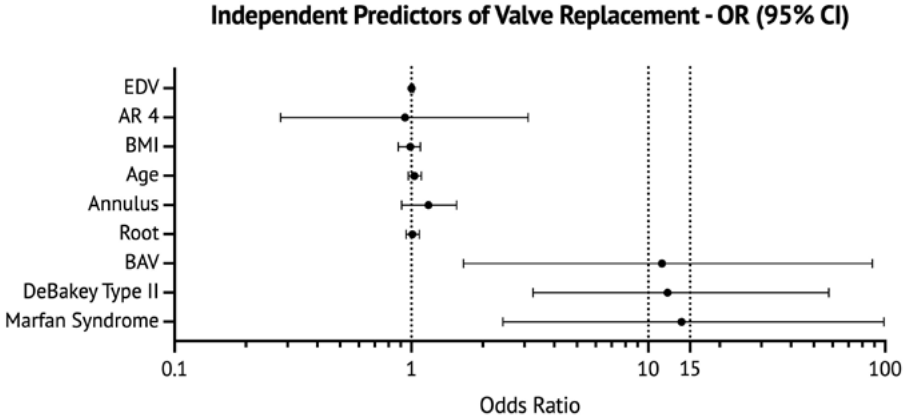
Background-Aim: Management of significant aortic regurgitation during acute type A aortic dissection (ATAAD) is challenging. Our priority is to preserve the aortic valve through valve-sparing (VS) surgery over valve replacement (VR). We share our clinical experience and progress in developing an effective and safe decision-making algorithm.

Methods: We analyzed 497 ATAAD cases, operated in 2017-2025. The target population included 238 patients with moderate to severe aortic regurgitation. A verified analytical cohort (n=102) was used for modeling. Penalized Firth logistic regression (AUC=0.90) was used to identify independent predictors for replacement.

Results: The aortic valve was preserved in 76.5% of cases (n=78/102). The VR patients were significantly younger (46.5±12.0 vs 53.1±11.4 years, p<0.05), with higher prevalence of Marfan syndrome (MS) (33.3% vs 6.4%, p<0.01), bicuspid valve (BAV) (20.8% vs 3.9%, p<0.05) and DeBakey Type II (62.5% vs 12.8%, p<0.0001) in the VR group. VR patients had a higher aortic root diameter (52.5 vs 44.0 mm, p<0.05), but multivariable analysis confirmed MS (OR=13.8), BAV (OR=11.4), and DeBakey II (OR=12.1) as independent predictors. High preservation rates did not increase risk (ischemic time p=0.31; early mortality 5.1% in VS vs 0% in VR, p>0.5). Freedom from valve-related reoperation was 96.2% (3/78 failures).

Conclusions: A structured, cluster-based approach enables high rates of valve preservation in ATAAD (>75%) without increasing risk or compromising durability. Aortic size is not an independent predictor: etiological and anatomical factors are more reliable predictors. This framework supports valve-sparing as a primary strategy for most patients.



EP04

WHEN AMPUTATION IS NOT THE END: REVASCULARIZATION FOR LATE ABOVE-KNEE STUMP ISCHEMIA

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Background - Aim: Ischemia of an above-knee amputation (AKA) stump is a rare but potentially life-threatening complication, with limited available evidence and no standardized management strategy. Although major amputation is often considered the final therapeutic step after failure of prior revascularization attempts, additional revascularization may be required to preserve stump viability and function.

Methods: We report a patient with advanced Peripheral Arterial Disease and a history of multiple revascularization procedures who ultimately underwent AKA. Following initial stump healing, she developed a progressively worsening lesion over the stump several months later. Imaging revealed thrombosis of prior iliac and femoral reconstructions, resulting in compromised arterial inflow. As the lesion was attributed to stump ischemia rather than isolated wound failure, redo revascularization was undertaken with the aim of stump salvage.

Results: After an unsuccessful attempt at endovascular recanalization of the iliofemoral axis, a femoro-femoral crossover bypass was performed, targeting the Profunda Femoris Artery of the amputated limb. Concomitant local surgical debridement of the ischemic lesion was carried out, followed by vacuum-assisted closure therapy. Revascularization restored adequate perfusion to the stump, leading to progressive wound healing and avoidance of further proximal amputation. At 50-day follow-up, the wound was near complete healing.

Conclusions: Late ischemia may develop even in a previously healed AKA stump, particularly in patients with progressive PAD and thrombosis of prior reconstructions. Early recognition of arterial insufficiency is essential, as redo revascularization can preserve stump viability and prevent hip disarticulation in selected patients.

EP05

DOUBLE CHIMNEY TEVAR FOR A LARGE AORTIC ARCH ANEURYSM: A CASE REPORT

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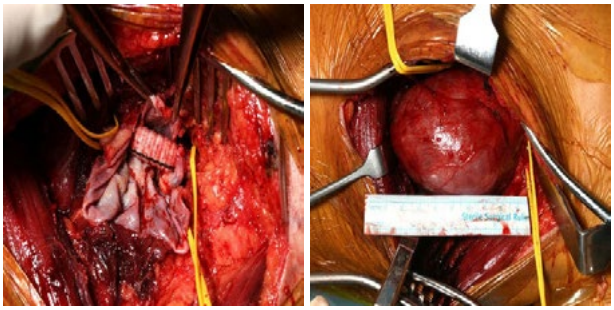
Background - aim: Endovascular management of aortic arch aneurysms remains challenging due to the need for preservation of supra - aortic branches. The chimney technique has emerged as a viable alternative in selected patients, particularly in urgent or emergent settings, offering a less invasive option compared to open repair. We present a case of a large symptomatic aortic arch aneurysm treated with a double chimney approach.

Methods: A patient presented with progressive thoracic pain radiating to the back. Computed tomography angiography demonstrated an 9.5cm saccular aneurysm involving the aortic arch. The intervention was performed under general anesthesia. Surgical exposure of the left common femoral artery, left common carotid artery and right axillary artery was obtained. A thoracic stent - graft was deployed across the aortic arch. Covered chimney stents were advanced and deployed in the innominate artery and left common carotid artery to preserve cerebral perfusion. Completion angiography confirmed successful exclusion of the aneurysm without endoleak and with preserved patency of the supra - aortic branches.

Results: The procedure was completed successfully with effective aneurysm exclusion and maintenance of perfusion to the treated vessels. Postoperatively, the patient exhibited transient neurological symptoms without imaging evidence of acute cerebrovascular event. The clinical course was further complicated by anemia requiring transfusion and mild respiratory compromise. Steady clinical recovery and normalization of laboratory parameters were observed, allowing discharge in stable condition.

Conclusions: Double chimney TEVAR represents a feasible and effective option for selected patients with complex aortic arch aneurysms, especially in cases requiring prompt intervention. Thorough procedural planning and vigilant perioperative care are essential to optimize patient outcomes.



EP06

ENDOVASCULAR MANAGEMENT OF SPONTANEOUS LEFT RENAL ARTERY DISSECTION: A CASE REPORT AND LITERATURE INSIGHT

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Objective: Spontaneous renal artery dissection (SRAD) is a rare and often underdiagnosed condition, typically presenting with nonspecific symptoms such as acute flank pain and hypertension. We present a case of spontaneous dissection of the left renal artery managed with endovascular repair, aiming to highlight diagnostic challenges and therapeutic outcomes.

Methods: A 44 year-old male patient presented with acute left flank pain and newly diagnosed and worsening hypertension. Computed tomography revealed a spontaneous dissection of the left renal artery with stenosis and renal infarction.

Given the presence of refractory hypertension and significant stenosis the patient underwent endovascular treatment. Through a femoral approach, selective renal angiography confirmed the lesion, and a bare stent was successfully deployed in the main renal artery restoring true lumen patency.

Results: The procedure was completed successfully with immediate restoration of renal blood flow and no perioperative complications. Postoperatively, the patient demonstrated:control of blood pressure, stabilization of renal function and sesolution of symptoms

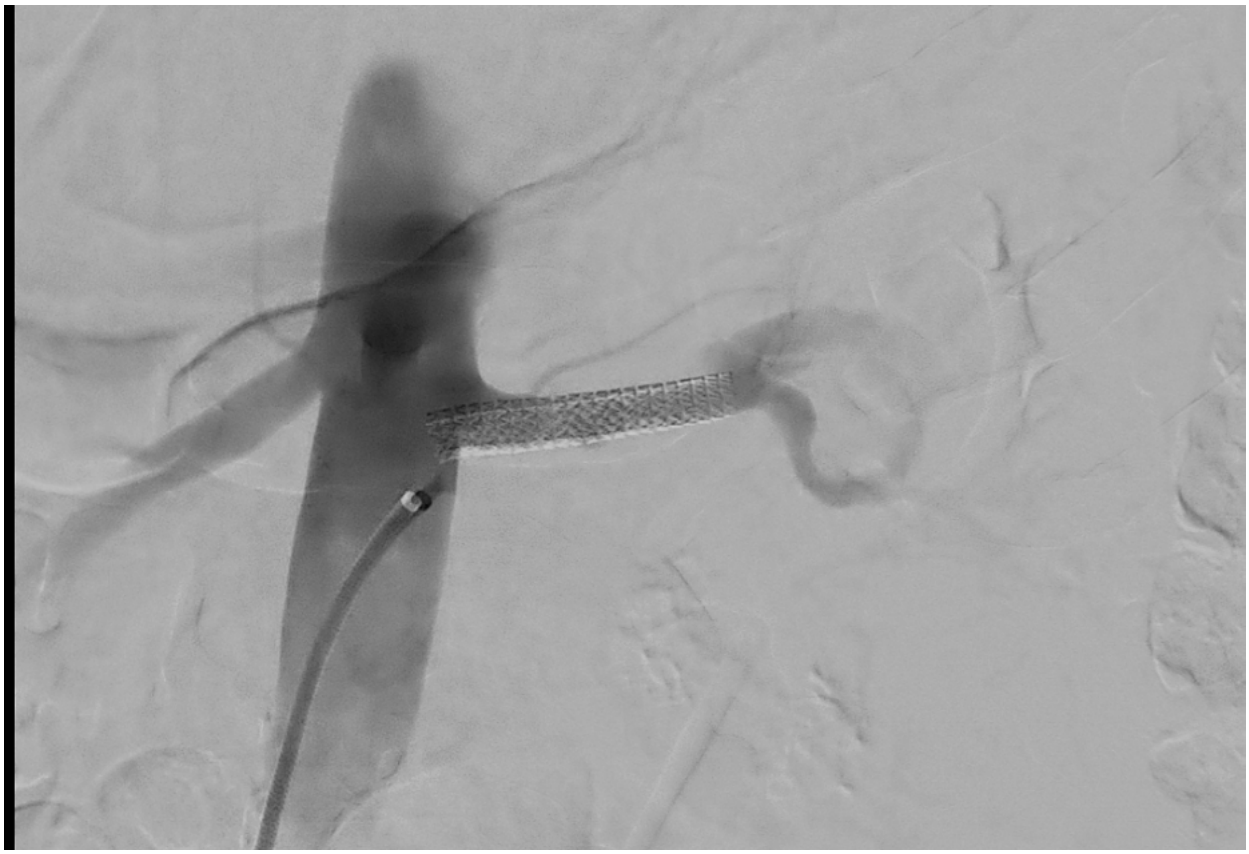
During follow-up, imaging confirmed stent patency without evidence of restenosis or occlusion, consistent with previously reported outcomes.

Discussion: SRAD is a rare vascular condition, most commonly affecting middle-aged patients and strongly associated with hypertension. Clinical presentation is often misleading, contributing to delayed diagnosis.

Endovascular repair has emerged as a safe and effective treatment option, offering high technical success rates (~93%) and significant improvement in hypertension and renal function.

Compared to open surgery, endovascular management is less invasive and associated with lower morbidity while achieving comparable outcomes.

Conclusions: Endovascular stenting represents a safe, feasible, and effective therapeutic option for spontaneous renal artery dissection, particularly in symptomatic patients or those with compromised renal perfusion. Early recognition and intervention are critical for optimal clinical outcomes.



EP07

UNEXPECTED LOSS OF ENDOGRAFT DURING CERAB AS PART OF HYBRID REVASCULARIZATION OF AN OLD THROMBOSED AORTO-BIFEMORAL BYPASS

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Background: Covered Endovascular Reconstruction of the Aortic Bifurcation (CERAB) is an established endovascular technique for the management of complex aortoiliac occlusive disease, particularly in patients with prior surgical bypasses. Despite technical advances, unexpected intraoperative complications may occur and require immediate problem-solving strategies. We report a rare complication involving accidental release of an iliac endograft during a CERAB procedure and describe the technical manoeuvres used to successfully resolve the situation.

Case Presentation: A 63-year-old male presented with critical limb ischaemia involving both lower extremities and absent pulses in the common femoral arteries. His surgical history included a previous aorto-bifemoral bypass. Computed tomography angiography confirmed thrombosis of the bypass graft, and hybrid revascularization was planned. The procedure began with thrombectomy of the graft using a Rotarex mechanical thrombectomy device, followed by a standard CERAB technique with placement of an aortic cuff and iliac limb extensions toward the common femoral arteries. During positioning of one iliac endograft within the distal aorta, unintended release of the endograft from its delivery balloon occurred, accompanied by simultaneous loss of guidewire access. Recatheterization of the displaced endograft was achieved using a new guidewire. Sequential balloon manipulations, including angioplasty and occlusion balloons, were used to reposition and deploy the endograft accurately at the intended target location. Completion angiography confirmed restoration of flow without residual stenosis or endoleak. The patient recovered uneventfully and was discharged on postoperative day three with resolution of ischaemic symptoms.

Conclusion: This case highlights the importance of maintaining procedural vigilance and technical flexibility during complex endovascular reconstructions. Familiarity with bailout techniques is essential for managing unexpected device-related complications and ensuring favorable clinical outcomes.

EP08

BEYOND OPEN REPAIR: SELECTIVE ENDOVASCULAR TREATMENT IN ASCENDING AORTIC PATHOLOGY: A CASE REPORT

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Penetrating Atherosclerotic Ulcers (PAUs) constitute 2-11% of all acute aortic syndromes. While PAUs usually occur in the descending thoracic aorta, their occurrence in the ascending aorta is uncommon, with studies reporting incidence rates as low as 1.2%. PAU of the ascending aorta can be aggressive, with higher rupture rates (25-40% in symptomatic cases) and requires urgent intervention. Surgical repair remains the gold standard for ascending aortic pathology. However, ascending thoracic endovascular aortic repair (ascending TEVAR) may be an alternative in high risk patients who are unsuitable candidates for open repair. A 65 years old male patient with a known history of chronic kidney disease undergoing hemodialysis, bilateral double-J ureteral stents, bladder cancer with extension to the renal parenchyma was referred for futher surgical treatment. The patient was asymptomatic and clinical examination revealed no pathological findings. On preoperative computed tomography angiography (CTA), an incidental finding of a penetrating atherosclerotic ulcer of the ascending aorta was identified. A diagnosis of PAU, as part of the acute aortic syndrome spectrum, was established. Due to the patient being unfit for open surgical repair, ascending TEVAR with an aortic cuff prosthesis was performed as an alternative treatment. Under rapid ventricular pacing, final position and deployment of the graft were achieved. The final angiogram demonstrated preserved patency of the coronary arteries and brachiocephalic trunk, a functional aortic valve, without endoleak or other pathological findings.The intervention was successfully, without peri- or postoperative complications. The patient was discharged from hospital after 4 days. This case highlights the role of endovascular intervention in the ascending aorta, emphasizing its feasibility and safety, with no post-intervention complications observed during the 30-day follow-up period.

EP09

ANGIOPLASTY IN A 27-YEAR-OLD FEMALE PATIENT WITH FIBROMUSCULAR DYSPLASIA OF THE RIGHT RENAL ARTERY

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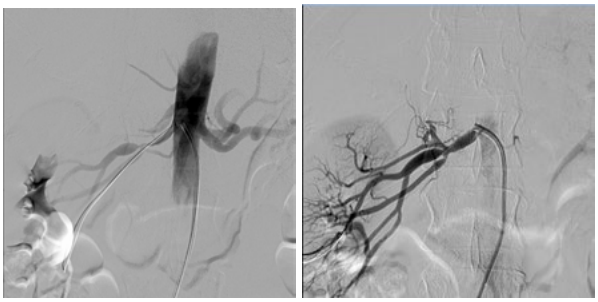
Background-Aim: Fibromuscular dysplasia is a non-atherosclerotic arteriopathy mainly affecting renal arteries of young patients, potentially causing arterial stenosis, reduced renal perfusion, and secondary hypertension. Balloon angioplasty is a key therapeutic strategy. We aim to present a case highlighting the effectiveness of percutaneous transluminal angioplasty (PTA) in restoring vascular patency and improving renal and cardiovascular outcomes.

Methods: A 27-year-old female patient with pre-occlusive stenosis of the right renal artery due to fibromuscular dysplasia presented with resistant hypertension and impaired renal function. PTA with a balloon was performed under imaging guidance, achieving technical success and complete restoration of vessel patency. Procedural safety and clinical outcomes were monitored.

Results: Vascular patency was fully re-established. Follow-up demonstrated complete recovery of renal function and significant improvement in blood pressure control, with reduced need for antihypertensive therapy. No peri-procedural complications occurred.

Conclusions: Renal artery angioplasty is an effective, minimally invasive approach for fibromuscular dysplasia, improving renal function and hypertension control while minimizing hospital stay and facilitating rapid return to daily activities. Early intervention contributes to better long-term outcomes and enhanced quality of life in young patients.



EP10

FATAL HEMORRHAGIC PANCREATITIS AFTER BRANCHED ENDOVASCULAR REPAIR OF A PARARENAL ABDOMINAL AORTIC ANEURYSM: A RARE AND CATASTROPHIC NON-VASCULAR COMPLICATION

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Background: Branched endovascular aneurysm repair (BEVAR) has expanded the treatment options for complex aortic aneurysms with acceptable perioperative morbidity and mortality. However, severe non-vascular complications remain poorly defined. We report a rare and fatal case of hemorrhagic pancreatitis following BEVAR, highlighting a potentially underrecognized complication in high-risk patients.

Methods: A 76-year-old male underwent elective BEVAR for a 10 cm pararenal abdominal aortic aneurysm using a G-branch (Lifetech) device. Preoperative work-up revealed significant comorbidities, including three-vessel coronary artery disease and unexplained thrombocytopenia under investigation (immune thrombocytopenia vs myelodysplastic syndrome). No pancreatic pathology was identified preoperatively.

Results: The procedure was technically successful and uneventful. Shortly after admission to the intensive care unit, the patient developed abrupt hemodynamic collapse with rapidly escalating vasopressor requirements. Emergency computed tomography angiography demonstrated extensive hemorrhagic pancreatitis without evidence of procedural vascular injury. Despite aggressive resuscitative efforts, the patient died within 24 hours.

Conclusions: This case suggests that hemorrhagic pancreatitis may represent a rare but catastrophic complication following complex endovascular aortic repair. In the absence of direct pancreatic injury, a multifactorial mechanism involving systemic inflammatory response, microvascular ischemia-reperfusion injury and endothelial dysfunction is likely implicated. **Importantly, while thrombocytopenia alone is not recognized as a direct cause of pancreatitis, pre-existing impairment of hemostasis may have contributed to hemorrhagic transformation in the setting of pancreatic ischemic injury.** These findings highlight the need for careful perioperative risk assessment and increased vigilance in patients with underlying hematologic abnormalities undergoing complex endovascular procedures.

EP11

ENDOVASCULAR MANAGEMENT OF COMPLEX AORTOILIAC OCCUSIVE DISEASE WITH A BIFURCATED ENDOGRAFT: A CASE REPORT AND LITERATURE REVIEW

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Severe aortoiliac occlusive disease (AIOD), particularly TransAtlantic Inter-Society Consensus (TASC) II C/D lesions, presents a therapeutic challenge and has traditionally been managed with aortobifemoral bypass, which offers durable patency but carries substantial perioperative morbidity and mortality. Endovascular approaches, including bifurcated endografts, have emerged as less invasive alternatives, demonstrating favorable patency outcomes, technical advantages, and reduced hospital stays. We present the case of a 49-year-old male with complex TASC II D lesions who was successfully treated with a bifurcated endograft. The procedure achieved complete revascularization without perioperative complications, and one-year follow-up confirmed durable patency. This case highlights the feasibility of bifurcated endografts in selected high-risk patients with advanced AIOD. Although encouraging, their application in non-aneurysmal disease remains off-label, underscoring the need for long-term and comparative studies to validate outcomes and guide patient selection.

Key Words: *Aortoiliac occlusive disease, Endovascular procedures, Stent graft, Bifurcated endograft, Revascularization*

EP12

ENDOVASCULAR REPAIR OF A PROXIMAL PARAANASTOMOTIC ANEURYSM USING THE TROMBONE TECHNIQUE AFTER OPEN AAA REPAIR

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Paraanastomotic aneurysm after open surgical repair (OSR) for the treatment of abdominal aortic aneurysm (AAA) is a long-term and potentially life threatening complication. Because prior abdominal surgery often makes open reintervention technically challenging, endovascular repair (EVAR) with stent-graft implantation should be considered as a suitable alternative. We report a case of a proximal anastomotic paraanastomotic aneurysm successfully treated by endovascular means using two tube stent grafts deployed in a trombone technique, with prior embolisation of lumbal arteries. Follow-up computed tomography angiography at one month demonstrated complete exclusion of the aneurysm with no evidence of a persistent endoleak. This case highlights the feasibility and safety of endovascular aneurysm repair using the trombone technique for proximal paraanastomotic aneurysms after OSR for AAA. It also underscores the role of pre-emptive lumbar artery embolisation in reducing the risk of type II endoleak and emphasizes the importance of long-term postoperative imaging surveillance to ensure durable outcomes following both open and endovascular aneurysm repair.

EP13

OPEN TREATMENT OF AN ISOLATED ILIAC BIFURCATION ANEURYSM IN A PATIENT WITH MARFAN SYNDROME - A CASE PRESENTATION

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Background-Aim: Aim of this report is to present a rare case of a patient with Marfan syndrome and an isolated common iliac artery (CIA) bifurcation aneurysm.

Methods: Case report

Results: A 45-year-old male patient with Marfan syndrome presented with an isolated left CIA bifurcation aneurysm. There was no aneurysm of the abdominal aorta. The maximal diameter was 4.5cm. His medical history included a previous open thoracic aortic aneurysm repair as well. The patient underwent an open repair with placement of a bifurcated synthetic PTFE graft with distal anastomoses to the left internal and external iliac artery. The postoperative course of the patient was uneventful.

Conclusions: An isolated CIA bifurcation aneurysm is rare among patients with Marfan syndrome. An open repair is the first choice of treatment.

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