Revascularization Outcomes in nonagenarians in Symptomatic Elderly with Peripheral Arterial Disease – the ROSEPAD registry

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Background

Continuous advancements in the medical field have significantly increased life expectancy, leading to a growing population of older individuals. However, data regarding the outcomes of revascularization for symptomatic peripheral arterial disease (PAD) in nonagenarians is scarce. The aim of this study is to analyze the safety and efficacy of invasive therapies in nonagenarians undergoing revascularization for lower limb atherosclerosis.

Methods

This is a multicenter, European, retrospective analysis of patients aged 90 years or older, who underwent endovascular, open, or hybrid treatment for symptomatic PAD (Rutherford Class 3-6) between December 2017 and December 2023. Primary endpoint of the study is amputation-free-survival (AFS). Overall survival (OS), amputation-free time (AF), and freedom from any reintervention of the index limb were additionally analyzed

Results

A total of 566 patients were included. The majority underwent endovascular- (n=462, 81.6%), followed by open- (n=60, 10.6%), and hybrid revascularization (n=44, 7.8%). At 36 months the AFS was 21.4%, while the freedom from amputation was 85.7% and the OS rate was 23.7%. Freedom from reintervention rate at 3 years was 73.7%. Male sex, history of coronary heart disease, periprocedural acute kidney injury, and periprocedural myocardial infarction were associated with reduced AFS [HR = 1.41 (1.10-1.79), 1.50 (1.17-1.91), 2.20 (1.55-3.1), and 2.14 (1.04-4.39), respectively], while postprocedural dual antiplatelet therapy conferred a beneficial effect [HR = 0.73 (0.56-0.95)].

Conclusions

Lower limb revascularization in nonagenarians with PAD is associated with low major amputation and re-intervention rates. However, a significantly increased mortality was observed at 3 years.

Contemporary experience of using intravascular ultrasound in the endovascular management of peripheral arterial disease

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Background

Intravascular ultrasound (IVUS) use in peripheral artery disease (PAD) intervention remains controversial. We evaluated where IVUS changes endovascular decision-making and described outcomes across lesion complexity from a workflow perspective.

Methods

Retrospective analysis of consecutive IVUS-guided endovascular PAD interventions (2018–2026). We extracted treated levels, GLASS stage (infrainguinal), vessel preparation and definitive therapies, IVUS-guided actions pre/post-treatment, and IVUS-detected dissection/residual stenosis. Outcomes were reintervention, amputation and death; 1-year Kaplan–Meier estimates were calculated.

Results

345 procedures (364 limbs) were included (mean age 70±11 years; 66% male, 92% Rutherford≥4). Multi-level revascularisation occurred in 55% of limbs; among infrainguinal limbs, GLASS III comprised 50%. Vessel preparation was extensive (POBA 70%, IVL 32%, atherectomy 20%), with ≥2 preparation modalities in 47%. Definitive therapy commonly combined modalities (≥2 in 41%): DCB 61% and any stent 61% (BMS 37%, DES 31%, covered stent 12%). IVUS guided preparation choice in 18% and triggered post-treatment optimisation in 35%. IVUS detected dissection in 25% and residual stenosis in 21%, most often prompting further ballooning or additional stenting. At 1 year, freedom from reintervention was 78%, freedom from amputation 94%, survival 83% and amputation-free survival 78%. There was a strong temporal trend of improvement in reintervention rates.

Conclusions

In a real-world cohort dominated by complex multilevel/GLASS III disease, IVUS frequently provided actionable lesion phenotyping and optimisation feedback that altered workflow. Outcomes were excellent considering the extensive lesion and severity of ischaemia treated, supporting IVUS as a decision-support tool for PAD intervention.

Predictors of symptomatic improvement following endovascular treatment for pelvic congestion: The role of reflux territory

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Background

Endovascular intervention for pelvic congestion Syndrome often achieves radiological technical success, yet symptom improvement varies. We analysed symptom-severity and reflux-territory to understand whether targeted treatments may predict symptomatic response.

Methods

Retrospective, single-centre cohort study over three years (ending July 2025). Thirteen symptom domains recorded pre and post-intervention (0-13). Reflux-territory grouped as ovarian vein (OV)-dominant, internal iliac vein (IIV)-dominant, mixed (OV+IIV), low/none. Clinical response defined as ≥30% reduction in symptoms in line with published literature. Technical success recorded on post-procedure duplex.

Results

54 patients (of 82) had data available for analysis. Median age was 39. Mean symptom-severity score was 8.4 pre-intervention, two thirds (36/54) of patients had mixed OV+IIV reflux pattern. No pre-intervention symptom-reflux alignment on univariate analysis. Coils used in 50/54 (92.6%) alongside STS in 44/54 (81.5%). No early complications recorded. Technical success was 90.4% (47/52) at follow-up. Post-intervention, mean symptom-severity score improved to 6.2, treatment effect -2.2. 46.3% (25/54) met response criteria. Symptomatic response appeared to vary by reflux-territory: IIV-dominant 60.0% (3/5), mixed OV+IIV 50.0% (18/36), OV-dominant 37.5% (3/8), low/none 25.0% (1/4). Greatest symptom improvement was in iliac fossa pain (88.9%:51.9%), dyspareunia (70.4%:35.2%) and pelvic dragging pain (88.9%:63.0%).

Conclusions

Endovascular pelvic venous interventions are safe and achieve high rates of technical success in our unit. Nearly half of patients achieved at least 30% symptomatic improvement, particularly iliac fossa pain and dyspareunia, within IIV-dominant or mixed OV+IIV reflux patterns. Pre-procedure symptom profile with reflux-territory may facilitate patient selection and targeted treatment.

Endovascular native arterial recanalisation after failed infrainguinal surgical bypass: A systematic review and meta-analysis

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Background
Endovascular recanalisation of chronically occluded native arteries has emerged as a promising therapeutic option for patients with lower limb bypass graft failure. We performed a systematic review and meta-analysis to evaluate the clinical outcomes associated with this approach.

Methods
A systematic literature search was conducted in PubMed, Embase, and the Cochrane Library, adhering to PRISMA guidelines. Studies that had reported outcomes after endovascular recanalisation of chronically occluded native arteries after failed infrainguinal surgical bypass were included. A random-effects meta-analysis of proportions was performed to obtain the weighted outcomes. Our study outcomes were technical success (TS), 12-month primary patency (PP), 12-month assisted primary patency (APP), 12-month secondary patency (SP), 12-month amputation-free survival (AFS), and 12-month limb salvage (LS) rate.

Results
Eleven studies with 817 patients and a total of 820 treated limbs were analysed. The weighted pooled TS was 95.6% (95% CI, 92.4%-97.5%). At 12 months, the weighted pooled PP was 49.2% (95% CI, 33.6% - 64.9%), APP was 81.6% (95% CI, 65.1%-91.3%), and SP was 86.4% (95% CI, 68.2% - 95.0%). The 12-month weighted pooled AFS and LS rates were 90.4% (95% CI, 84.1% - 94.4%) and 94.4% (95% CI, 90.2% -96.9%), respectively.

Conclusions
Endovascular recanalisation of chronically occluded native arteries following infrainguinal surgical bypass graft failure is associated with high technical success, reasonable short-term patency rates and favourable limb salvage rates. This approach remains a valuable limb-preserving strategy for patients with limited revascularisation options.

Single centre experience of the Phoenix mechanical atherectomy system

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Background

Published experience with the Phoenix rotational atherectomy system largely reflects mixed peripheral arterial disease cohorts with short lesions and limited chronic total occlusion (CTO) burden. Evidence in real-world chronic limb-threatening ischaemia (CLTI) with long, complex disease remains limited. We report mid-term outcomes from a UK tertiary centre in a predominantly CLTI population with high CTO burden.

Methods

A retrospective analysis was performed of all procedures using the Phoenix system between 2017 and 2024. Follow-up was available to January 2026. Primary outcomes were device-related complications, primary patency, and freedom from major adverse limb events (fMALE).

Results

Ninety-six procedures were analysed (mean age 69±11.5 years; 66% male). CLTI (Rutherford 4–6) accounted for 96% of cases. Median lesion length was 190 mm (IQR 177 mm), with 83% CTOs. Device crossing failure occurred in 2%. Perforation and distal embolisation each occurred in 5%; perforations were observed when intravascular ultrasound (IVUS) was not used to confirm intraluminal wire position. Stenting was required in 32% of cases, though overall stent length was reduced following atherectomy. Crural interventions were associated with worse primary patency (HR 2.56, p=0.038) and limb salvage (HR 4.85, p=0.004). Drug-coated balloon (DCB) use was associated with improved primary patency (HR 0.34, p=0.019).

Conclusions

In a real-world UK CLTI cohort with long lesions and high CTO burden, Phoenix rotational atherectomy achieves acceptable mid-term outcomes. Outcomes are segment-dependent, with inferior results in crural vessels. Adjunctive DCB improves patency, and rotational debulking supports a stent-sparing strategy.