Outcomes following femoro-popliteal stenting surveillance: A three-year single-centre experience

Nour Darwish, Safaa Hamid, Marcus Nicholls, Raj Gali, Andy Thompson, Kaji Sritharan
York & Scarborough Teaching Hospitals NHS Foundation Trust, York

Background

Optimal post-stent surveillance following femoro-popliteal stenting is controversial. We evaluated the effectiveness of an SFA stent surveillance programme and the factors influencing stent failure.

Methods

A retrospective analysis was conducted using a prospective database of all femoro-popliteal stents implanted between January 2022 and December 2024. Demographic data, peripheral arterial disease risk factors, antithrombotic therapy, Rutherford and TASC classification, PACCS score, vessel preparation techniques and stent-type were collected. The primary outcome was primary patency. Secondary outcomes included re-intervention, major adverse cardiovascular events (MACE), major adverse limb events (MALE) and mortality. Clinical follow-up was evaluated with attention to timing, symptoms and attendance to duplex US surveillance. Analysis was performed using IBM SPSS Statistics v31.0.2.0.

Results

166 patients were included, 112 males and 54 females, mean age 75.6 years (range 49-96). 68% were Rutherford stage 4–6 and the majority Rutherford 5 (50.6%). Re-intervention before 1-year surveillance occurred in 31.3%, major amputation in 10.2%, and mortality in 24.3%. Re-intervention and limb loss were higher in Rutherford 4–5 disease. TASC C lesions were significantly associated with major amputation (17.4%, $p=0.049$). Vessel preparation and stent type were not associated with patency. 97% attended clinical follow-up; however, 59% had clinical deterioration prior to duplex surveillance; only 19.8% underwent planned duplex assessment. Dual antiplatelet therapy demonstrated a lower non-significant trend towards MALE.

Conclusions

MALE following femoropopliteal stenting appears driven by disease severity and lesion complexity not device selection. The predominance of symptom-driven re-intervention demonstrates that annual surveillance is inadequate and supports more frequent duplex surveillance.

When antiplatelet is not enough: Platelet function monitoring and glycaemic control predict early adverse event in peripheral arterial disease

Meiling MacDonald-Nethercott[1], Hafiz Qureshi[2], Selvaraj Nambia[2], Harjeet Rayt[1], Rob D Sayers[1,3], Matthew J Bown[1,3], Athanasios Saratzis[1,3], Badri Vijaynagar[1]

[1]University Hospitals of Leicester NHS Trust, Vascular Surgery Department, Leicester

[2]University Hospitals of Leicester NHS Trust, Department of Transfusion Medicine & Centre for Platelet Function Studies, Leicester

[3]British Heart Foundation Leicester Centre for Research Excellence and National Institute for Health and Care Research Leicester Biomedical Research Centre, Division of Cardiovascular Sciences, College of Life Sciences, Leicester

Background

Antiplatelet therapy is a cornerstone of medical management in peripheral arterial disease (PAD). Despite known inter-individual variability in clopidogrel response, platelet function testing (PFT) is not routine, and the clinical significance of "clopidogrel resistance" remains poorly defined. We aimed to evaluate whether PFT, combined with clinical biomarkers, could identify patients at high risk of early post-procedural failure.

Methods

A prospective, single-centre study (2024–2025) included PAD patients undergoing lower-limb revascularisation on clopidogrel monotherapy. Perioperative platelet function was quantified using the Multiplate® analyser (ADP-test). The primary endpoint was a four-month composite of target lesion reintervention (TLR), major amputation, or all-cause mortality. Multivariable logistic regression was utilised to develop a risk-stratification model.

Results

Eighty patients completed the four-month follow-up. Platelet reactivity demonstrated significant heterogeneity, with markedly higher variance in patients who experienced adverse outcomes ($p=0.00022$). While traditional comorbidities including BMI, COPD, and cardiac and cerebral were not predictive of events, ADP-induced platelet aggregation and HbA1c were identified as significant independent predictors. A dual-variable model incorporating these two factors stratified the cohort:

High-Risk Group (35% of cohort): 46% adverse event rate.

Low-Risk Group (65% of cohort): 4% adverse event rate.

The model demonstrated excellent discrimination (AUC 0.89) and a significant difference in event-free survival (log-rank $p=0.00059$).

Conclusions

Clopidogrel response is highly variable in PAD. A strategy combining PFT and HbA1c reliably identifies a high-risk phenotype prone to early failure, providing a framework for personalised antithrombotic escalation and perioperative glycaemic optimisation.

Treatment decisions in peripheral artery disease: What do patients prioritise?

Calvin De Louche[1], Shahd Shaltout[2], Colin Bicknell[1], Anna Pouncey[1,3]
[1]Department of Surgery and Cancer, Imperial College London, London
[2]Department of Vascular Surgery, St George's University Hospitals NHS Foundation Trust, London
[3]School of Health and Medical Sciences, City St George's University of London, London

Background
Symptomatic lower-limb peripheral artery disease (PAD) is heterogeneous, ranging from intermittent claudication to chronic limb-threatening ischaemia (CLTI). Management includes best medical therapy and exercise, endovascular or open revascularisation, and amputation for advanced disease. Many choices are preference-sensitive and depend on how patients weigh benefits, burdens and risks, yet evidence on what patients prioritise and how values are incorporated into shared decision-making (SDM) is limited. This review examined patient priorities and SDM across PAD treatment decisions, including endovascular choices.

Methods
A PROSPERO-registered systematic review (CRD420251106155) was conducted following PRISMA guidance. MEDLINE, EMBASE and CENTRAL were searched for English-language studies between 1 January 2000 and 17 December 2025. Eligible studies included adults with symptomatic PAD reporting priorities, information needs, decisional role preferences, or SDM experiences. Two reviewers independently screened and extracted data. Findings were synthesised narratively.

Results
Of 319 records screened, 34 studies were included. Across claudication, CLTI and peri-amputation, priorities centred on function and quality of life: walking, pain relief, independence and emotional wellbeing. Revascularisation decisions reflected anticipated benefit, durability, likelihood of technical success, repeat procedures, surveillance and rehabilitation, and included perspectives relevant to endovascular care. Many patients preferred SDM yet described lower-than-desired involvement, often alongside limited PAD knowledge and inconsistent communication. Stated-preference studies demonstrated heterogeneity in risk tolerance and trade-offs. Study quality was mixed.

Conclusions
Patient priorities in PAD vary and extend beyond procedural choice. Strengthening SDM through values elicitation, decision support, and clearer discussion of trade-offs may better align revascularisation treatment decisions with outcomes that matter to patients.

Utilization of Natural Language Processing (NLP) for visceral artery aneurysms identification from radiology reports

Amina Amin[1], Syed Samar Ali Shah[2], Katarzyna Powezka[3], Keith Farrell Dillon[3], Arul Ganeshan[2], Alok Tiwari[3], Martin Claridge[2], Donald Adam[2], Maciej Juszczak[3]

[1]Russell Hall Hospital, Dudley

[2]Heartlands Hospital, Birmingham

[3]University of Birmingham, Birmingham

Background

Visceral artery aneurysms (VAAs) are rare entities with poorly defined true population incidence, and estimated prevalence ranging from 0.01% to 2%. The rarity of VAAs limits the development of high-quality evidence of on their etiology, natural history and treatment outcomes. Delayed referral of patients with VAAs is poorly quantified because most VAAs are incidentally detected and referral pathways differ between centres. The machine learning (ML) using natural language processing (NLP) can automate detection and referral process to vascular services. We aimed to develop NLP-based machine learning models to identify patients with VAAs from radiology reports, and to analyse epidemiology and outcomes of patients with VAAs managed in a single quaternary vascular centre.

Methods

We screened radiology reports from the University Hospitals Birmingham NHS Foundation Trust from 2011 to 2021. Cases were labelled manually as positive for any visceral artery aneurysm and negative for their absence. Six different ML models were trained/validated and tested.

Results

We screened 114,378 radiological reports of CT scans and identified 93 VVAs in 85 patients. VVAs involved: splenic artery – 52 cases (55.9%), renal arteries – 19 cases (20.4%), hepatic artery – 9 cases (9.7%), CA – 8 cases (8.6%), SMA – 4 cases (4.3%) and gastroepiploic artery – 1 case (1.1%). Six models showed divergent performance: Stochastic Gradient Descent (98.1% accuracy, 75% sensitivity, MCC=0.792) and Decision Tree (97.7%, 75%, MCC=0.783) achieved optimal results. All models achieved >96% accuracy and >99% specificity despite varying sensitivity.

Conclusions

NLP-based ML algorithms can be used to identify VAAs cases from radiology reports.

Radiation protection training in endovascular surgery: A systematic review of educational interventions

Alex Garnett[1], George Ninkovic-Hall[1], Kaji Sritharan[2]
[1]Manchester University Foundation Trust, Manchester
[2]York & Scarborough Teaching Hospitals NHS Trust, York

Background
Endovascular proceduralists are routinely exposed to ionising radiation, yet structured training in radiation protection (RP) remains inconsistent. In the UK radiation safety education is mandated however, there is limited clarity regarding teaching methods, competency standards, or measurable occupational outcomes. We conducted a PRISMA-guided systematic review to evaluate the effectiveness of radiation protection teaching interventions in vascular surgeons and interventional radiologists.

Methods
Databases were searched from 2016 - 2026 using predefined terms relating to RP, fluoroscopy/endovascular practice, and education/training interventions. Studies were eligible if they evaluated a defined RP teaching intervention targeting vascular surgeons or interventional radiologists and reported at least one measurable outcome. Two reviewers independently screened records, assessed texts, and extracted data on educational modality, intervention components, and outcomes. Owing to heterogeneity, results were synthesised narratively.

Results
Of 176 records identified, 18 underwent full-text review and 4 studies met inclusion criteria. All were single-centre studies, predominantly non-randomised pre–post designs. Educational modalities included simulation-based training, immersive virtual reality, augmented reality visualisation, and structured interventional radiology workshops. Short-term improvements in knowledge and procedural awareness were consistently demonstrated. Some studies reported improved radiation-conscious behaviours. Objective occupational dosimetry endpoints and long-term retention were infrequently measured. No multicentre comparative trials evaluating different teaching modalities were identified.

Conclusions
There remains a marked paucity of high-quality evidence guiding RP training for endovascular proceduralists. Despite mandatory UK training requirements, evidence-based pedagogical frameworks are lacking. Robust, competency-based, and dose-informed trials with standardised endpoints are needed to define training strategies and improve operator safety in practice.