## **Agenda**

02 October 2025

8:30 am - 10:00 am AORTIC MASTERCLASS (TECHNOLOGY AND TECHNIQUES WORKSHOP - TICKETED EVENT)

Workshop - Vascular - City Room 1

02 October 2025

10:00 am - 10:30 am Morning Tea

Catering - Vascular - City Room 1 Foyer

02 October 2025

10:30 am - 12:30 pm VENOUS MASTERCLASS (TECHNOLOGY AND TECHNIQUES WORKSHOP - TICKETED EVENT)

Workshop - Vascular - City Room 1

10:30 am

The Benefit and Interpretation of IntraVascular UltraSound in Venous Disease Phillip Puckridge

10:50 am

Achieving Success in Chronic Ilio-femoral Venous Disease Shueh Hao Lim

11:10 am

exPERT: Clear clot with confidence

**Chris Delaney** 

11:30 am

When the Drugs Don't Work: What Comes Next? – Managing Acute DVT Shueh Hao Lim

Presentation of acute DVT thrombectomy evidence and techniques.

11:50 am

Extensive DVT options and adjuncts in therapy Phillip Puckridge

12:10 pm

**Discussion** 

02 October 2025

Lunch
Catering - <u>Vascular</u> - City Room 1 Foyer
02 October 2025  1:30 pm - 3:00 pm
LIMB SALVAGE MASTERCLASS (TECHNOLOGY AND TECHNIQUES WORKSHOP - TICKETED EVENT)
Workshop - <u>Vascular</u> - City Room 1
02 October 2025 3:00 pm - 3:30 pm
Afternoon Tea
Catering - <u>Vascular</u> - City Room 1 Foyer
02 October 2025
3:30 pm - 5:30 pm Embolisation Masterclass (TECHNOLOGY AND TECHNIQUES WORKSHOP - TICKETED EVENT)
Workshop - <u>Vascular</u> - City Room 1
02 October 2025
7:00 pm - 10:30 pm Trainees Dinner (Ticketed Event)
Speciality Dinner - <u>Vascular</u>
03 October 2025
7:00 am - 8:20 am WOMEN IN VASCULAR SURGERY BREAKFAST (TICKETED EVENT)
Breakfast Session - <u>Vascular</u> - Room L3

12.30 pm - 1.30 pm

8:30 am - 10:00 am Opening

Scientific Session - Nursing - Room L2

8:30 am

<u>Convener Welcome and Acknowledgement of Country</u> <u>Juliet Scott, Sue Monaro</u>

8:35 am

<u>Tracks to advanced vascular nursing role</u> <u>Frank Guerriero</u>

9:05 am

<u>Integrated Function of the Vascular CNC: Bridging Clinical and Operational Continuity in a Tertiary Centre Kreyen Ponen</u>

9:20 am

<u>Surgery to Strength: The transformative role of the amputee nurse</u> <u>Annie Mathew</u>

The Amputee Clinical Nurse role designed to improve the major limb amputation (MLA) patient journey and to coordinate the care from admission in the acute setting to rehabilitation. Ensure holistic support through coordination with allied health services and streamline the patient journey across care settings. Since 2023 this role has supported 247 individuals experiencing amputation across South Australia. Major limb amputation presents complex medical, functional, and psychosocial challenges that require coordinated, multidisciplinary care. This presentation outlines the development and implementation of a dedicated Amputee Nurse role within the Central Adelaide Local Health Network (CALHN), designed to bridge gaps across the continuum of amputee care—from acute hospitalisation to rehabilitation. Key components of the role include Prehabilitation education, wound care, holistic patient assessment, discharge planning, and coordination of prosthetic services. With a strong focus on continuity of care, the Amputee Nurse acts as a central point of contact, guiding patients and families through perioperative preparation, postoperative wound management, and psychosocial support. Achievements highlighted include improved interdisciplinary collaboration, earlier involvement of allied health professionals, pressure injury prevention, and enhanced patient and family satisfaction. In addition, the role has contributed to research and quality improvement initiatives, including trial of Prevena VAC therapy on stump wound management, as well as support for data-driven practice updates. This presentation demonstrates how a single, strategically positioned role can transform amputee rehabilitation outcomes by fostering system-wide integration, education, and person-centred care.

9:35 am

<u>Deadly Feet: Your foot health, Closer to home</u> <u>Courtney Finch</u>

Background: Deadly Feet is a co-designed, multi-disciplinary outreach service delivered across multiple sites. Deadly Feet aims to improve clinical pathways and outcomes for Aboriginal and Torres Strait Islander people at risk of or with foot disease through early detection, risk modification and intervention by addressing the known barriers Aboriginal and Torres Strait Islander people face accessing healthcare. This is achieved by delivering podiatry, vascular sonography, and vascular specialist services to patients in a culturally appropriate manner. It operates in collaboration with Hospital and Health Services (HHS), Institute of Urban Indigenous Health (IUIH), Moreton Aboriginal and Torres Strait Islander Community Health Services (MATSICHS) and Galangoor Duwamali Primary Healthcare Service, Cherbourg Regional Aboriginal and Torres Strait Islander Community Controlled Health Service (CRIACCHS) and local Aboriginal and Torres Strait Islander community and health teams. Deadly Feet also monitors the Royal Brisbane Woman's Hospital (RBWH) vascular clinic waitlist for any Identified patients that have been referred into the service rather than Deadly Feet. Method: Deadly Feet use a culturally responsive model of care that includes Community engagement events as well as providing education and opportunistic screening using the Better together health van, ability to receive self-referrals, patients reviewed by 3 specialists in one appointment, assistance with transport and providing care closer to home. Result: the team has held over 67 clinics over 500 people reviewed, 4 patients have received limb salvaging surgery, and 6 patients have

received surgical intervention for rest pain.

9:50 am
Discussion

8:30 am - 10:00 am TECH INNOVATION

Scientific Session - Vascular - Hall M

8:30 am

Welcome to Country

8:40 am

**Convener Welcome** 

8:45 am

AI + Vascular Surgery

**Fabien Lareyre** 

Artificial Intelligence has brought new opportunities in medicine, with various fields and applications. This presentation highlights how AI has the potential to improve the management of vascular diseases in clinical practice, medical research as well as in education.

#### 9:00 am

## Advanced technologies to improve telehealth delivery for diabetes-related foot disease Neil McMillan

Purpose. Amputation rates for diabetes-related foot disease (DFD) are considerably higher in regional and rural areas compared to metropolitan centres, highlighting a lack of access to specialist care. Telehealth offers a promising solution to bridge this gap by facilitating timely, multidisciplinary care for patients with complicated DFD living in regional or remote locations. However, identified barriers to providing effective telehealth consultation within our service included: limited access to local clinical expertise, suboptimal image quality, and constrained technological infrastructure. Methodology. Augmented Reality (AR) was implemented using a monocular AR headset, allowing multidisciplinary clinicians in Central Adelaide to "see through the eyes" of regional practitioners in the Riverland, enabling more precise real-time assessments. Working with local technology experts, the advanced telehealth setup incorporated a workstation on wheels to host the call, video conferencing to improve interaction, and lapel microphones to enhance audio clarity. Results. We will present initial feasibility analysis of the AR telehealth program from our project trialling the system with stakeholders and consumers, building on two years of collaborative development of the system. AR has been initially well-accepted by practitioners in both metro and rural facilities, and further has been a scaffold for improving the effectiveness of delivery and building collaborations across health networks. Conclusion. We anticipate the implementation of advanced technologies in telehealth will significantly improve patient experience, increase diagnostic accuracy, reduce the travel burden for patients, and ultimately lead to better clinical outcomes for patients with DFD in rural communities. However, these technologies require collaborative development and consumer-led focus to produce practical improvements to provide a system that can be readily used in the clinical space.

9:10 am

<u>VeriQ™-Guided Intraoperative Flow Predicts Early and Long-Term Outcomes in Paramalleolar Bypass</u> <u>Surgery</u>

## Shinsuke Kikuchi

Purpose: This study evaluated the predictive value of intraoperative graft flow measurement using the Medistim VeriQ™ system in paramalleolar bypass for chronic limb-threatening ischemia (CLTI), incorporating the Inframalleolar/Pedal Descriptor (IMPD) classification as a marker of pedal arterial complexity. Methodology: A total of 165 inframalleolar bypasses were performed between 2014 and 2019. Target vessels were selected based on angiographic run-off, lateral foot radiographs for arterial calcification, and intraoperative ultrasonography. Graft flow was measured using the VeriQ™ transit-time flowmeter after anastomosis. Pedal anatomy was classified using the IMPD system (PO-P2). ROC analysis identified thresholds for early intervention. Patients with intraoperative flow <20 mL/min received intra-graft vasodilators; refractory cases underwent catheter-based postoperative infusion. Multivariate analysis determined predictors of early (≤30 days), intermediate (≤3 months), and long-term outcomes. Results:

Mean flow values were 52±26 (P0), 49±41 (P1), and 33±30 mL/min (P2) (P=0.20). Early reintervention occurred in 4% (P0), 6% (P1), and 33% (P2). Two-year primary/secondary patency rates were 58%/100% (P0), 53%/84% (P1), and 22%/70% (P2). Flow <25 mL/min (OR: 3.4) and P2 anatomy (OR: 10.4) predicted early failure. For 3-month intervention, flow <40 mL/min (OR: 4.0) and P2 lesions (OR: 10.9) were significant. Long-term failure was associated with poor vein quality (HR: 2.1), chronic heart failure (HR: 1.9), and P2 anatomy (HR: 6.6). Conclusion: Intraoperative graft flow measured by the VeriQ<sup>™</sup> system helps predict early graft intervention after paramalleolar bypass. Thresholds of <25 and <40 mL/min identify patients at immediate and intermediate risk, and IMPD-based stratification further supports informed surgical decision-making.

9:20 am

<u>Genetic news and targeted therapy in patients with vascular malformation</u> <u>Iris Baumgartner</u>

9:35 am

From 3 Months to 13 Seconds: Large Language Models Revolutionise Vascular Surgery Patient Leaflets
Asanka Wijetunga

9:45 am

Al-interpreted ECGs predict myocardial injury risk after vascular surgery Uyen Giao Vo

Purpose: To determine if the MyoVista electrocardiography device predicts myocardial injury after vascular surgery. Methodology: The MyoVista wavECG device utilises continuous wavelet transform signal processing and artificial intelligence to detect diastolic dysfunction pre-operatively, in patients undergoing vascular surgery procedures. Troponin levels were collected pre-operatively, as well as at post-operative days 1, 2 and 3. MINS was defined as an increase in any post-operative troponin. Secondary outcomes of 30-day readmission and mortality were collected. Statistical analysis was performed using Fischer's exact test and binary logistics regression, IBM SPSS v31. Results: The study included 46 participants, age 71.2±11.9 years old. Majority were male (78.3%), with median ASA of 3. Majority of included procedures were carotid endarterectomies (28.3%), open abdominal aortic aneurysm repairs (21.7%), endovascular approaches to lower limb revascularizations (17.4%) and minor amputations (15.2%). Myocardial injury after non-cardiac surgery (MINS) was higher in current smokers (33.3%), compared non-smokers (16.0%), then ex-smokers (6.7%), p=0.303. Pre-operative findings of diastolic dysfunction with MyoVista was associated with higher MINS (25.0% vs. 5%, p=0.106), with an OR of 6.33 (95% CI, 0.69-57.9). After adjusting for age, sex, history of cardiac disease, diabetes mellitus, and chronic kidney disease, preoperative diastolic dysfunction had greater significance on MINS, with OR of 16.1 (95% CI, 1.07-242.5, p=0.044). Higher incidence of 30-day mortality (14.3% vs 0%, p=0.152) and readmissions (28.6% vs. 12.8%, p=0.286) was seen with occurrence of MINS. Conclusion: This study demonstrates a strong relationship between diastolic dysfunction detected via MyoVista wavECG device and MINS. In vascular surgery patients, this could provide additional value as a preoperative assessment to identify those with increased cardiovascular risk.

9:55 am
<a href="Discussion">Discussion</a>

03 October 2025

10:00 am - 10:30 am Moderated ePoster Session - FRIDAY

Scientific Session - Vascular - Hall L Lounge

10:00 am

A Retrospective Study on a Regional Centre's Experience with the Jetstream Atherectomy Device. David Sun

10:02 am

Qualitative Exploration of Patient Factors Influencing Women's Participation in Abdominal Aortic Aneurysm Clinical Trials: A Multicentre Study in Aotearoa New Zealand Thomas Williams

Purpose: Women are underrepresented in cardiovascular disease management trials. We aimed to explore the contextual, emotional, and relational factors influencing research participation in New Zealand, to better understand why women's willingness to participate in research may not result in trial recruitment. Methodology: People undergoing small AAA surveillance in two NZ regions were invited to a convergent parallel mixed-methods study via telephone interview. Questions explored emotional responses to their AAA, perceived role of values, cultural beliefs in care and willingness to participate in clinical trials. Interviews were anonymised and analysed using Reflexive Thematic Analysis (Nvivo software) with themes developed inductively and reported using the COREQ framework. Ethical approval was obtained. Results: Between 2023-2025, 49 patients (29 women; 36 Pākehā, 12 Māori) agreed to participate. Three interrelated themes and two subthemes emerged to explain willingness to be randomised in trials. i) 'Trust as Emotional Infrastructure': Trust served as a relational foundation enabling openness to participation, and was built or eroded through prior clinical interactions. ii) 'Adapting to aneurysm': Emotional adaptation was dynamic and shaped by communication, care experiences, family history and the delivery of the initial diagnosis of an AAA. Older participants more often described a sense of fatalistic acceptance. iii) 'Negotiating participation': Willingness to enrol in clinical research was negotiated between the patient and clinician, rather than immediately decided, and shaped by information clarity, pre-existing trust, logistic barriers and patient context. Conclusion: Willingness to participate in research depends heavily on pre-existing trust, patient views about their AAA, and negotiation of trial participation. Positive factors can be easily eroded through barriers to participation such as transport. Further work will explore these themes in focus groups.

#### 10:04 am

## <u>A 10-Year Review of Operative Trends for Atherosclerotic Carotid Artery Disease at a Tertiary Centre Ashton Arthur</u>

Background: Atherosclerotic carotid artery disease is a major stroke cause, primarily treated via carotid endarterectomy (CEA) or carotid artery stenting (CAS). Evolving practices and patient profiles may influence intervention trends. This study reviews 10 years of carotid procedures at a tertiary centre to assess these changes. Methods: We retrospectively reviewed all carotid interventions for atherosclerotic disease at Northern Health from January 2015 to December 2024. Patients were identified via perioperative records and the Australasian Vascular Audit. Data on demographics, comorbidities, procedures, and perioperative outcomes were extracted and trends analysed with linear and logistic regression. Results: Over a 10-year period, 255 carotid procedures were performed, including 231 CEAs and 24 CAS. Mean patient age was 72.7 years, and 189 (74.1%) were male. Among CEAs, 56 eversion endarterectomies were performed, more commonly during the earlier years of the study, while 173 patch angioplasties were carried out. Majority of interventions (82.4%) were for symptomatic disease. In the symptomatic cohort, mean age rose from 71.1 years (2015) to 75.0 years (2024) ( $\beta$  = 0.54, p = 0.033). The proportion of symptomatic cases also increased over time (OR 1.15; 95% CI: 1.02–1.30; p = 0.018). No significant temporal trends were observed in patient comorbidities, hospital stay duration (p = 0.60), the proportion of symptomatic patients undergoing intervention during the index admission (p = 0.32), or perioperative stroke and mortality rates (p = 0.76). Conclusion: Over the study period, carotid interventions at Northern Health were increasingly performed on older and symptomatic patients. Despite this, key outcomes such as hospital stay, timing of intervention, and perioperative complications remained stable. These findings suggest a change in patient demographics and a more selective approach to treating asymptomatic carotid artery disease.

### 10:06 am

A review of outcomes for type B aortic syndrome from the B-CLEAR Registry: a single centre observational registry

Michael Na

Purpose Traditionally, "uncomplicated" type B aortic syndromes were treated with pharmacological management alone. Recent randomised and observational trials have suggested that endovascular intervention had beneficial effects on the risk of mortality related to aortic complications and progression of aortic disease (Nienaber et al., 2013) and that long term outcomes with only medical therapy are relatively poor (Durham et al., 2015) This study aims to determine the natural history of aortic syndromes based on current management guidelines and practices, looking particularly at outcomes after early intervention for uncomplicated Type B aortic syndrome Methodology Patients who presented to our institution with type B aortic syndromes since May 2016 were entered into the registry. After initially collecting data on their risk factors, specifics of their aortic pathology, and their management on presentation, follow-up data was obtained to determine outcomes and complication rates The primary outcomes were to determine survival duration after diagnosis with aortic syndrome, as well as cause of death and whether this was aortic related Results 100 patients with type B aortic syndrome entered the registry between May 2016 and June 2025. 58 were male and 42 female. Median age was 76 (range 39-97), 43 were treated with best medical therapy only, and 58 treated surgically of which 37 operations were within the first 7 days 30-day mortality was 3% (all in medical treatment group). All-cause mortality of 28%, with 19 in medical group and 9 in surgical group. 5

aortic cause mortalities in medical group, 2 in surgical group Conclusion We reviewed baseline patient factors and mortality outcomes for type B aortic syndromes within our centre, with majority of surgical interventions being within 7 days and no increase in perioperative mortality rates seen with treatment in this period. More ongoing research into the area is required to help for recommendations and guidelines for management of type B aortic syndromes

10:08 am

Keystone Island Flap Repair of the Ulcerated Arteriovenous Fistula: Our Technique and Case Series Asanka Wijetunga

10:10 am

The use of endoanchor fixation in challenging proximal sealing zones

Dani Dwight

Purpose: Endoanchor fixation is an effective adjunct in preventing type la endoleaks and graft migration in endovascular aortic repair (EVAR) and thoracic endovascular aortic repair (TEVAR). Methodology: The study included consecutive patients who underwent endoanchor fixation for thoracic or abdominal endovascular repair between June 2019 and Dec 2024. Primary placement was defined as endoanchor fixation at the time of the index procedure, while secondary placement was defined as an additional procedure to treat sac expansion from an ongoing type I leak. Maximal aneurysmal diameter was measured pre and post operatively. Patients were followed up to monitor for aneurysmal re-expansion, complications (including endoleaks), and need for reintervention. All patients were followed up clinically and with imaging. Results: There were 30 patients (7 Females) with a median (range) age 80 (44-91) years. The median (range) follow up was 20 (2-59) months. Of the 30 patients, 25 (83%) had abdominal aortic interventions. The median preoperative and postoperative maximal aneurysm diameters were 60mm and 59.5mm respectively in the primary intervention group, and 69.5mm and 67mm in the secondary intervention group. There were 2 patients in each group that required unplanned aortic re-intervention (two for a type la endoleaks, and two type 2 endoleak). There were no endoanchor mislodgments or fractures observed. Conclusion: Endoanchor fixation during EVAR and TEVAR in challenging proximal landing zones could improve the durability of endovascular aortic repair. Further follow up is required to define the role of this additional endovascular armamentarium.

10:12 am

Acute Aortic Syndrome: Patients' understanding and lived experiences in Aotearoa New Zealand Meg Beaumont

10:14 am

<u>Inter and Intra-Rater Reliability of Pedal Acceleration Time Measurements Rawiri Kapa-Hakeney</u>

10:16 am

Stent choice and patency rates during inner-branched endovascular arch repair- a 5-year experience Abhishekh Srinivas

10:18 am

<u>Steal syndrome in the Northern Region - A New Zealand based retrospective multicentre cohort study</u> <u>Lauren Whearty</u>

10:00 am - 10:30 am Morning Tea

Catering - Nursing, Vascular - Hall L

03 October 2025

10:30 am - 12:30 pm Aortic

#### 10:30 am

<u>Challenging anatomy cohort data supporting 90-degree neck angulation with up to 10mm infrarenal seal</u>

<u>Robert Rhee</u>

#### 10:45 am

<u>VEGF-Mediated Angiogenesis in Type II Endoleaks: A Potential Driver of Sac Expansion Post-EVAR Dushan Miladinovic</u>

Purpose: Type II endoleaks (T2EL) are a leading cause of aneurysmal sac enlargement following an EVAR, raising concerns about potential late rupture. Despite their clinical relevance, treatment options for T2EL remain limited due to an incomplete understanding of their pathophysiology. This study examines inflammatory biomarkers within the excluded aneurysm sac to uncover mechanisms driving T2EL persistence and identify potential therapeutic targets for AAA management. Methodology: A prospective cohort study of 28 patients was undertaken at Royal Prince Alfred Hospital, Sydney. Participants were grouped into T2EL (n = 5), EVAR without sac enlargement (n = 12), and control group of peripheral arterial intervention (PAI; n = 11). Blood was collected from a peripheral artery, vein, and intervention site, and an enzyme-linked immunosorbent assay was undertaken for Vascular Endothelial Growth Factor (VEGF), interleukin 6 (IL-6), interleukin-1 beta (IL-1β) and TNF-related apoptosis-inducing ligand (TRAIL). Results: VEGF levels were notably elevated at the intervention site in the T2EL group (57.19 ± 25.51 pg/mL) compared to EVAR (17.65  $\pm$  10.73 pg/mL, p=0.15) and PAI (21.15  $\pm$  28.91 pg/mL, p=0.21). In contrast, peripheral VEGF concentrations were similar between the T2EL, EVAR and PAI cohorts, suggesting localised VEGF-driven angiogenesis within the expanding sac. Inflammatory markers (IL-6, IL-1β, and TRAIL) showed no significant differences between groups or sampling sites. To standardise for inflammation, VEGF levels were normalised to TRAIL. The VEGF/TRAIL ratio was significantly higher (p<0.05) in the T2EL group compared to the combined non-T2EL cohort (EVAR and PAI cohorts). Conclusion: This study is among the first to implicate local VEGF-mediated angiogenesis, rather than inflammation, as a potential mechanism sustaining T2EL and driving sac expansion. Targeting VEGF may represent a novel therapeutic strategy to halt T2EL progression and reduce AAA-related risk.

## 10:55 am

<u>A 22-year experience with aortic endograft infection: Management and Results Using Updated Outcome Definitions</u>
<u>William Ju</u>

Aim Management of aortic vascular graft and endograft infection (VGEI) is complex and associated with high mortality. We aimed to compare the outcomes of VGEI managed conservatively or by explantation, using recently proposed definitions, including 'cure' and clinical relapse. Methods Patents with possible VGEI discharged 2011-2023 were identified using ICD-10 codes and database searches. VGEI was diagnosed by Management of Aortic Graft Infection Collaboration criteria. Patents were managed by a multidisciplinary team including infectious diseases. The primary outcome was all-cause mortality (Cox regression model). Secondary outcomes were pre-defined clinical relapse and cure. Results Fifty-eight patients were included, 43 (74%) men, median age 74 (range 36-92). Median follow-up was 3.0 (IQR 4.5) years from presentation, with no loss of follow-up. 43 (74%) grafts were infrarenal, 1 (2%) was juxtarenal, 11 (19%) were descending thoracic, and 3 (5%) were ascending thoracic. 15 (26%) had an enteric fistula. 8 (14%) were completely explanted and 5 (9%) were partially explanted. There were no significant improvements in mortality, relapse, or cure, with explantation. Excluding patients with fistula, pre-defined 'cure' was achieved in 9/45 (20%) with conservative management, and 4/9 (31%) with explantation. Explantation was not associated with improved survival in either an unadjusted cox model (HR 0.56, 95% CI 0.194-1.61) or after adjustment for age, COPD, CKD stage ≥3 (HR 0.61, 95% CI 0.21–1.8). In addition, explantation was not associated with cure or clinical relapse. Conclusions In this 22-year series, using pre-defined outcome measures, the outcomes of explantation were not significantly superior to those of conservative management. Some patients were cured with antibiotic therapy alone. No patient with a fistula was cured.

## 11:05 am

Ascending and arch aortic endovascular procedures and stroke rates- the Alfred experience over 5 years Abhishekh Srinivas

Purpose The surgical intervention for ascending aortic pathologies has seen a marked evolution over the years, due to the intertwined combination of technological improvements in equipment, as well as s a better understanding of its natural history. Anecdotal evidence at our centre has demonstrated a potentially increased stroke rate amongst patients who underwent complex ascending aortic endovascular surgery. The objective of this project is to identify risk factors based on available preoperative and intraoperative

clinical data which best predict post-operative stroke rates amongst these patients. Methodology Deriving data from the Alfred aortic database, an observational study was conducted using a prospectively-maintained institutional dataset to identify patients who underwent aortic endovascular surgery involving either the ascending aorta and/or aortic arch. Following this, pre-operative patient characteristics, types of stents used, size and route of access sheaths and coverage were evaluated for all patients who underwent endovascular ascending/arch intervention between January 2020 to June 2025. Strokes were defined as radiological (either CT or MRI) evidence of infarcts on cross-sectional neuroimaging. Results We identified 118 ascending aortic and arch endovascular cases over a 5-year period, all of which were included in this study. The overall stroke rate was 5.1%. Independent predictors of strokes included subclavian to carotid transposition (OR 5.2, p-value 0.30), a Type II/III aortic arch (OR 10.1; p-value 0.54) and presence of aortic atheroma (OR 3.1, p-value 0.04). Conclusion In our retrospective single-centre experience, ascending aortic and arch endovascular procedures were associated with a 5.1% stroke rate, with factors associated with stroke development including carotid transposition surgery to facilitate stent deployment, aortic arch anatomic anomalies and the presence of aortic atheroma.

## 11:15 am

<u>Patient Factors Influencing Willingness to Participate in Abdominal Aortic Aneurysm Clinical Trials: A Multicentre Study in Aotearoa New Zealand</u>

**Thomas Williams** 

Purpose: Women are poorly recruited (relative to disease prevalence) in cardiovascular management trials. This is hypothesised to be due to caregiving responsibilities, travel difficulty, distrust of clinicians, and differing risk perception. We aimed to understand patient factors influencing willingness to participate in AAA trials. Methodology: People undergoing small AAA surveillance in two NZ regions were invited to a mixed-methods study via telephone interview. Participants completed validated questionnaires and additional questions on quality of life, carer stress, distrust in doctors, practical barriers to participation, and their willingness to participate in multiple hypothetical trial scenarios. Ethical approval was obtained. Analysis was in SPSS29. Results: Between 2023-2025, 49 patients (29 women; 36 Pākehā, 12 Māori) agreed to participate. AAA size (mean±SD) was 39±10mm. Quality of life (SF-36) was similar across all domains for women and men (P=ns). Women were not more often carers (10% vs 5%, P=ns), and carer stress was rated equally 13.7±6.9, vs 12.9±5.8 for men (P=ns). Distrust was similar (P=ns). Women were less likely to drive to hospital appointments (37.9% vs 75%, P<0.05), but rated similar difficulty attending appointments (mean±SD) 3.4±1.4, vs 3.6±1.4 for men (P=ns). Travel distance to hospital was similar, median (IQR) 8.3km (6.3-27.4), vs 22.6km (10.8-54.8) for men (P=ns). Both sexes showed moderate willingness to participate in hypothetical research scenarios, 3.5±0.8, vs 3.7±0.9 for men (P=ns). Willingness to participate in research dropped with increasing age (P=0.025). Conclusion: Despite historical under-recruitment, women expressed similar willingness to men to be randomised into hypothetical trials; poor recruitment of women may be due to non-patient factors. Further research is needed to understand women's under-recruitment and ensure equitable future cardiovascular research.

11:25 am

A Retrospective Analysis of 10-year Experience in Branched and Fenestrated Endovascular Aortic Arch Repair
Nikolaos Tsilimparis

11:40 am

<u>Decision Matrix OPEN v ENDO TAAA</u>

<u>Timothy Wagner</u>

12:10 pm Discussion

10:30 am - 12:30 pm Fundamentals 10:30 am

<u>Comprehensive Assessment of the Lower Leg</u> <u>Andrea Minnis, Martin Forbes</u>

03 October 2025

12:30 pm - 1:30 pm Lunch

Catering - Nursing, Vascular - Hall L

03 October 2025

12:45 pm - 1:15 pm

Meditronic Lunchtime Symposium - Diagnosis and Treatment Algorithms for AVM's and Pelvic Venous Disorders: The Role of Onyx in Endovascular Management

Scientific Session - Vascular - Hall L Lounge

12:45 pm Introduction Vikram Puttaswamy

12:50 pm

<u>Diagnosis and Treatment Algorithms for AVM's and Pelvic Venous Disorders: The Role of Onyx in Endovascular Management</u>
<u>Arne Schwindt</u>

1:10 pm Discussion

03 October 2025

1:30 pm - 3:00 pm CAROTID / MESENTERIC

Scientific Session - Vascular - Hall M

1:30 pm

Impact of rurality on the timeliness of carotid endarterectomy for symptomatic carotid stenosis Kam Fai Ho

Objective Carotid endarterectomy (CEA) has been demonstrated to reduce risk of recurrent stroke in symptomatic patients with a 50-99% carotid artery stenosis. Performing CEA within 2 weeks of symptom onset results in the greatest risk reduction and has been recommended by international guidelines. The purpose of this study was to evaluate the timeliness of CEA performed in an Australian tertiary vascular surgery centre and to identify the impact of rurality on this outcome. Methods We performed a retrospective single-centre observational study at the Princess Alexandra Hospital, Queensland, Australia. Patients who received CEA for symptomatic carotid stenosis between October 2017 and October 2022 were included. The primary outcome measure was delay to CEA beyond 2 weeks of symptom onset. We used a logistic regression model to analyse the association between the primary outcome and rurality, as well as other clinical features. Results 230 patients (30% female) were included. Delay to CEA was greater than 2

weeks in 50% of patients. Patients from rural or remote communities, those with high-grade (80-99%) carotid artery stenosis, and those who presented with stroke were more likely to receive CEA within 2 weeks of symptoms. Age, gender, comorbidities, smoking status, and socioeconomic status were not associated with delay to CEA. Conclusion Only half of the symptomatic carotid artery stenosis patients received CEA within the recommended 2-week timeframe. Patients who presented with stroke or high-grade carotid stenosis were more likely to receive timely CEA. Contrary to our expectations, rural or remote residents were more likely to receive CEA within 2 weeks compared to their metropolitan counterparts. "Rural reversal" may be present in our cohort and future studies should examine the generalisability of our findings.

## 1:40 pm

Biomarkers in the assessment of acute mesenteric ischaemia Fabien Larevre

Acute intestinal ischaemia remains a major diagnostic challenge, associated with high morbidity and mortality. In this presentation, we summarize current and emerging biomarkers, with a focus on proglucagon-derived hormones.

1:55 pm

<u>Changing trends in carotid revascularisation in Australia: a nationwide study over 30 years You Yang Qu</u>

2:05 pm <u>Mesenteric surgery</u> <u>Allan Kruger</u>

2:20 pm

<u>Implementation of a Neuro-Vascular Multidisciplinary Meeting at a Tertiary Vascular Centre Ashton Arthur</u>

Background: In December 2019, Northern Health introduced a Neuro-Vascular multidisciplinary meeting (MDM) to coordinate management of shared patients. While MDMs are widely adopted across multiple specialties, concerns exist regarding potential delays in care. This study aimed to assess whether the Neuro-Vascular MDM delayed intervention for symptomatic atherosclerotic carotid artery disease, and whether it influenced patient outcomes. Methods: A retrospective analysis was conducted at Northern Health from January 2015 to May 2025. Patients with atherosclerotic carotid disease were identified using perioperative coordinator records and the Australasian Vascular Audit. Demographics, indications, timing of intervention, and 30-day outcomes (stroke, TIA, mortality) were collected from electronic records. Patients were stratified into pre- and post-MDM groups, and comparative analyses were performed. Results: Over 125 months, 270 carotid procedures were performed - 245 carotid endarterectomies (CEA) and 25 carotid artery stents (CAS). Mean number of procedures per month rose slightly after MDM implementation (2.02 increasing to 2.28/month, p = 0.32). The proportion of symptomatic cases increased significantly post-MDM (86.0% vs. 76.7%; p = 0.048). There was a trend toward earlier intervention, with 75% of post-MDM CEAs performed within two weeks of symptoms compared to 65% pre-MDM (p = 0.14). Thirty-day stroke and mortality rates remained similar (2.5% pre-MDM vs. 4.0% post-MDM; p = 0.74). Conclusion: The introduction of a Neuro-Vascular MDM was associated with a significant increase in symptomatic carotid interventions, without delaying care or increasing perioperative rates of stroke and mortality. These findings suggest potential benefits of multidisciplinary implementation without compromising patient outcomes.

## 2:30 pm

Comparative analysis of carotid artery stenting practice and outcomes across operator specialties: insights from a prespecified sub analysis of a large real-world patient cohort (ROADSAVER Study)

Arne Schwindt

2:45 pm Discussion

1:30 pm - 3:00 pm Wellness

Scientific Session - Nursing - Room L2

Wellness for Vascular Nurses
Jo Gibbs, Sue Monaro

03 October 2025

3:00 pm - 3:30 pm
Afternoon Tea

Catering - Vascular, Nursing - Hall L

03 October 2025

3:05 pm - 3:25 pm
BOSTON SCIENTIFIC SYMPOSIUM - From hip to toe: Advanced solutions for managing the complexities of lower limb PAD

Scientific Session - Vascular - Hall L Lounge

03 October 2025

3:30 pm - 5:30 pm LIMB SALVAGE

Scientific Session - Nursing, Vascular - Hall M

This session is held in association with SAL-VAGE Proudly sponsored by Abbott Vascular and Penumbra

## 3:30 pm

Bilayer biodegradable synthetic matrix (NovoSorb BTM) accelerates healing of large post-surgical diabetes-related foot wounds: A single-centre randomised controlled trial. A Silver Bullet Made of Plastic? Frank Guerriero

Purpose Early case series reports of the use of a novel synthetic matrix - NovoSorb BTM - in the treatment of diabetes-related neuropathic and neuroischemic foot wounds have demonstrated promising clinical outcomes. A single-centre randomized control trial (RCT) was conducted to establish the efficacy of this novel therapy in a diabetes-related foot wound cohort. Methodology An RCT comparing the use of NovoSorb BTM plus usual standard of care (USOC) in the treatment of moderate to severe post-surgical diabetes-related foot wounds, compared with the USOC alone. Participant inclusion was limited to wounds of moderate to high severity as defined by SVS Wound, Ischemia and foot Infection (WIfI) grading system (grade 3 or 4). Primary outcomes were complete wound healing, and amputation rates at 12-month post treatment. Secondary outcomes included days to wound healing, wound surface area reduction, and infection. Results Between May 2022 and September 2024, a total of 64 participants were enrolled, with 32 progressing to BTM treatment plus USOC and 30 to USOC alone. Interim analysis of complete wound healing at 12-months was observed in 66.7 % of BTM-treated wounds compared with 56.5 % of USOC, however this was not statistically significant (P = 0.48). There were no significant differences observed in 12month amputation rates between either group. Kaplan-Meier analysis of days to wound healing of wounds with a starting surface area (SA) of > 10cm2 observed a significant decrease in those wounds treated with BTM (191days) compared with USOC (319 days) (Log-Rank Sig. 0.04, 95 % CI 209, 300). Conclusion The significant reduction in days to complete wound healing in large SA wounds treated with NovoSorb BTM, compared with USOC, positions this novel technology as a useful new weapon in the limited armamentarium of treatment options for post-surgical diabetes-related neuropathic / neuroischemic wounds healing by secondary intention.

## 3:45 pm

## <u>Technical and Non-technical Skills in Complex Wound Management</u> Sue Monaro

Introduction: After limb salvage procedures, patients often have complex and severe wounds that require vascular team members to work cohesively and across disciplines, sharing decisions with patients and their families. The nursing team need a high level of capability in wound assessment and management to deliver individualised, person-centred care. The required skills are both technical and non-technical and develop as nurses engage in modes of learning that transition them from novice to expert. Aim: To overview the technical and non-technical skills required to assess and manage patients with complex wounds and the modes of learning to build capability. Findings: Technical skills include holistic patient assessment and procedural skills in wound management, including skin and nail care, positioning, pressure offloading, pain management (pharmacological and non-pharmacological), wound hygiene (cleansing and debridement), dressing selection and retention (aseptic technique), and the application of therapeutic compression. Nontechnical skills refer to the cognitive and interpersonal abilities that enhance safety and complement technical skills. These include situation awareness (gathering information, recognising and understanding, and anticipating and thinking ahead), decision-making (identifying possible options, assessing risks and selecting options, re-evaluating), task management (prioritising, planning and preparing, identifying and utilising resources, maintaining standards and levels of quality) and teamwork (exchanging information, assessing roles and capabilities, co-ordinating activities, displaying authority and assertiveness, supporting other team members). The non-technical elements are employed throughout the planning and provision of wound care. Conclusions: Vascular nurses need to high-level technical and non-technical skills to optimise patient outcomes and experience. Novice vascular nurses benefit from mentorship and opportunities for experiential learning that arise from working alongside experienced nurses. Nurses need to engage in modes of learning that develop their capabilities and activities that ensure their well-being. Skilled, empathetic clinicians who listen and understand patients' needs and preferences must also have enough time to deliver quality care. With the current nursing shortage and in a climate of cost savings and service redesign, organisations need to look carefully at models of care to ensure that patients and families have contact with the right clinicians at the right time to receive the right care.

#### 4:00 pm

## <u>Diabetic Foot Disease Outcomes in Australia and New Zealand</u> Rawiri Kapa-Hakeney

Purpose: Diabetic foot disease (DFD) is highly prevalent and progression to amputation is common. There is a lack of large epidemiological studies of DFD in Australia and New Zealand, and limited use of wound staging scores in research and clinical practice. This was a bi-national study to prospectively report the presentation, management, and outcomes of DFD. Methodology: This was a multicentre observational study. Patients with DFD were recruited as inpatients or from diabetic foot clinics from 2020-2022. Demographic, clinical, and wound data were collected, with 12-months of follow-up. Primary outcomes were time to wound healing, major amputation, amputation-free survival, and mortality. Kaplan-Meier analysis was used to assess time to wound healing. Results: 276 patients (384 limbs) were recruited (median 67yrs, 75% male) and 54% had PAD. Wifi breakdown was 1(48%), 2(20%), 3(20%), 4(13%). 49% of wounds were infected, 97% ulcerated, and 19% had gangrene. 36% underwent revascularisation and 95% received antibiotics. 71% of wounds healed, with median time by WIfl stage 1-4 of 15,19,24, or 33 weeks respectively. Predictors of poor healing were higher WIfl, PAD, CVD, hyperlipidaemia, and frailty (P<0.05). At lyr, 17% underwent a major amputation, which was significantly associated with higher WIfI (P<0.001). Higher WIfI conferred worse amputation-free survival (P<0.001). Overall mortality was 15%, which increased with Wlfi (P<0.001). Conclusion: This bi-national study reports one-year outcomes of DFD. DFD continues to be a major health issue in Australasia. WIfI stage is strongly associated with healing, major limb amputation, amputation-free survival, and mortality, supporting its use in practice.

## 4:10 pm

Therapy outcomes and Healthcare Resource Utilization in Computer-Assisted Vacuum Thrombectomy vs Open Embolectomy: The THRIVE study. Frank Arko

#### 4:20 pm

What is a salvageable and functional foot? Chia-Ding Shih

Limb loss due to diabetic foot complications signifies a worsening disease process. Preserving limb helps maintain the mobility, cardiovascular health as well as overall wellbeing of the patient. However, limb salvage is a challenging topic as each individual patient and wound condition is different. Determining

factors for a salvageable foot may include post surgical tissue loss, soft tissue coverage, perfusion status and preoperative functional status. Management and approach to limb salvage should be patient-centered in order to achieve the best outcome. 1. Akhtar S, Schaper N, Apelqvist J, Jude E. A review of the Eurodiale studies: what lessons for diabetic foot care?. Curr Diab Rep. 2011;11(4):302-309. doi:10.1007/s11892-011-0195-x Khan T, Plotkin A, Magee GA, et al. 2. Functional ambulatory status as a potential adjunctive decision-making tool following wound, level of ischemia, and severity of foot infection assessment. J Vasc Surg. 2020;72(2):738-746. doi:10.1016/j.jvs.2019.11.064

## 4:30 pm

<u>Lipoprotein(a) and Its Role in Arterial Re-stenosis in Peripheral Arterial Disease: A Systematic Review and Meta-analysis</u>

**Gabrielle Stratford** 

Purpose: Although lipoprotein(a) [Lp(a)] is an established coronary risk factor, its relation to peripheral arterial disease (PAD) and to outcomes after lower-limb revascularisation remains uncertain. Methodology: We searched MEDLINE, Embase, CINAHL, and the Web of Science Core Collection from inception to 31 August 2024. Studies reporting PAD prevalence or post-revascularisation outcomes according to Lp(a) level were eligible. Two reviewers independently extracted data and assessed risk of bias (ROBINS-E/ROB2). Random-effects meta-analyses generated pooled odds ratios (OR) or hazard ratios (HR); heterogeneity was assessed with I2. Results: Ten observational studies involving 5,794 participants met the inclusion criteria. Four studies (n = 2,830) showed that an elevated Lp(a) concentration was associated with higher odds of PAD (pooled OR, 1.81; 95 % CI, 1.37–2.39; I<sup>2</sup> = 26 %). Two case-control studies found that mean Lp(a) values were 21.8 mg per decilitre higher in patients with PAD than in controls. Among 2,964 patients who underwent lower-limb revascularisation, high Lp(a) independently increased the risk of target-lesion restenosis (OR, 3.22; 95 % CI, 2.36-4.40), major amputation (OR, 2.62; 95 % CI, 1.36-5.03), and major adverse limb events (MALE) (OR, 5.09; 95 % CI, 3.89-6.67). Elevated Lp(a) doubled the hazard of MALE over time (HR, 2.52; 95 % CI, 1.20-5.28); its association with major adverse cardiovascular events (MACE) was not significant (HR, 1.39; 95 % CI, 0.57-3.35). Conclusion: Elevated Lp(a) is associated with both the presence of PAD and substantially worse limb outcomes after revascularisation. Routine measurement of Lp(a) may refine risk stratification, and ongoing Lp(a)-lowering trials should evaluate limb-centred end points. PROSPERO registration: CRD42023481959.

4:40 pm

Twenty-Four-Month Outcomes of Drug-Coated Balloon in Diabetic Patients in the BIOLUX P-III Registry: A Subgroup Analysis
Gabrielle Stratford

4:50 pm <u>Limb Salvage</u> <u>Guil Pena</u>

5:05 pm

The argument for Limb Salvage subspecialisation Marta Lobato

Limb salvage represents a critical goal in the management of complex vascular and musculoskeletal pathologies. The integration of a dedicated vascular center within a multidisciplinary framework significantly improves the success of limb preservation by enabling timely revascularization, advanced endovascular and open surgical techniques, and coordinated perioperative care. Collaboration between vascular surgeons, orthopedic specialists, plastic and reconstructive teams, and rehabilitation experts ensures a comprehensive strategy that maximizes functional outcomes and reduces amputation rates. The establishment of specialized vascular centers is therefore pivotal to advancing limb salvage and enhancing patient quality of life

5:20 pm Discussion

03 October 2025

5:30 pm - 6:30 pm Welcome Reception (Ticketed Event) Cocktail - Nursing, Vascular - Hall L

Join us at the Welcome Reception for light refreshments and canapés as we celebrate the opening of the ANZSVS Conference 2025 program with colleagues and industry partners.

04 October 2025

7:00 am - 9:00 am SAL-VAGE Fun Run (Ticketed Event)

Breakfast Session - Nursing, Vascular

Race Start: 7.30am, Adelaide Riverbank Lawns Join us in Adelaide for the SALVAGE Fun Run/Walk - Run 5km or walk 3km along the banks of the beautiful River Torrens! From arteries to asphalt—gather your colleagues, family and friends for a healthy dose of cardio as we come together to raise funds for the Vascular Foundation.

The fun run has been organised as an initiative by a group of ANZSVS members (SALVAGE). SAL-VAGE aims to advance the prevention, diagnosis, and treatment of chronic limb-threatening ischemia (CLTI).

04 October 2025

9:00 am - 10:00 am The Art of Recovery: Reset for Resilience (Ticketed Event)

Breakfast Session - Nursing, Vascular - Room L3

The Rest and Recovery session is specifically designed to support healthcare staff manage internal and external pressures and maintain their sense of wellbeing. Grounded in current research, this evidence-based session introduces practical tools to reduce physical and cognitive fatigue, manage stressful thinking, and promote emotional regulation.

04 October 2025

10:00 am - 10:30 am Moderated ePoster Session - SATURDAY

Scientific Session - Vascular - Hall L Lounge

10:00 am

<u>Toward Sex-Specific Therapies: Biological Differences in Plaques from Men and Women with Peripheral Arterial Disease</u>

**Dushan Miladinovic** 

Purpose: Women with PAD experience greater disease burden and complications, but the biological basis for these sex-specific outcomes remains unclear. This study investigates the sex-specific biology of atherosclerotic plaques by comparing plaque composition, inflammation, and oxidative stress in carotid and femoral arteries. Understanding these differences may inform more targeted diagnostic and therapeutic approaches for PAD. Methodology: Atherosclerotic plaques and plasma samples were collected from patients undergoing carotid (n=10) and femoral endarterectomies (n=10), with even sex-distribution. Gene expression analysis was performed for inflammation with Interleukin (IL)-1 $\beta$ , -18, -6 and Tissue Necrosis Factor- $\alpha$  (TNF- $\alpha$ ) as well as oxidative stress via NADPH oxidase (NOX). Calcification was measured using calcium assays and Bone Morphogenetic Protein-2 (BMP-2) mRNA expression. Histological analyses were performed. Results: When stratified by sex, female plaques showed significantly lower collagen-I (p<0.05)

and BMP-2 (p<0.05), suggesting greater plaque instability. Oxidative stress markers NOX-2 and NOX-4 were also reduced in females, suggesting reduced oxidative signalling in the plaque that may reflect impaired repair mechanisms that promotes stability. Furthermore, females with femoral artery disease exhibited significantly higher plasma IL-6 levels (p<0.05), indicating a more pronounced systemic inflammatory response. Male plaques were more inflamed, with elevated IL-1 $\beta$  and TNF- $\alpha$  expression (both p<0.05) Conclusion: Women with PAD exhibit more unstable plaque characteristics and heightened systemic inflammation. This may contribute to greater plaque instability, embolic risk, and the increased incidence of microvascular complications and limb amputation observed in female patients. These findings underscore the need for sex-specific diagnostic and therapeutic approaches to PAD tailored to the pathophysiology and clinical outcomes experienced by each sex.

#### 10:02 am

<u>Tumour Thrombectomy: An Unanticipated Application of Computer-Assisted Vacuum Thrombectomy</u>
(CAVT)

## Yu Shan Neo

Background: Tumour thrombus is a serious complication associated with cancers. This condition often involves the inferior vena cava and pulmonary arteries, leading to significant morbidity and mortality. Traditional treatment modalities, carry inherent risks and may not be suitable for all patients. Consequently, there is a growing interest in minimally invasive techniques to manage tumour thrombus effectively. Purpose: This study aims to review our institution's experience with inadvertent tumour thrombus retrieval during computer-assisted vacuum thrombectomy (CAVT) procedures and to contextualize these findings within the existing literature. Methodology: A retrospective review was conducted of patients who underwent CAVT at our institution between 2023 and June 2025. Cases were identified where histopathological analysis of the retrieved specimen confirmed the presence of malignant cells. A comprehensive literature review was also undertaken to compare our findings with existing reports. Results: A total of five cases were identified. The cohort included one arterial and four venous thrombectomies. Final histopathological diagnoses were renal cell carcinoma, embryonal carcinoma, endometrial carcinosarcoma, and metastatic poorly differentiated carcinoma. Of these, one was an expected tumour thrombus, two had known malignancies, and two were new malignancy diagnoses identified during the same admission, with the CAVT finding supporting the initial diagnosis. Notably, our series includes arterial tumour emboli, a rarity in published literature and the use of CAVT for tumour thrombectomy appears to be a novel application with only a single case previously reported. Conclusion: Our centre's experience demonstrates that malignant thrombus can be an unexpected finding in both arterial and venous systems during CAVT procedures. These findings underscore the critical importance of routine histopathological analysis of unusual retrieved endovascular specimens to avoid missing or delaying a diagnosis of malignancy.

## 10:04 am

Establishing a South Australian plasma biobank for biomarker identification related to diabetes-related foot ulcers

## Zahra Lotfollahi

Purpose: Despite the significant impact of diabetes-related foot ulcers (DRFUs), there is no precise diagnostic tool to predict healing trajectory or identify patients at risk of non-healing wounds. We need better tools to guide clinical management plans, before and after developing foot wounds. Establishing a biobank of plasma collected from patients with diabetes over time will enable us to discover different biomarkers associated with wound healing outcomes. Methodology: Four different groups of patients with diabetes have been recruited from early 2023 and blood samples, clinical information and wound measurements collected at enrolment and approximately every 6 months for up to 3 years in follow-up appointments. Clinical information includes clinical history, medications, and where appropriate, anklebrachial index, toe perfusion pressure, clinical estimation of wound areas, and wound description using the WIFI (Wound, Ischaemia, foot Infection) scoring system. A single blood sample was also collected from nondiabetic patients to serve as a control group. The levels of different biomarkers in the plasma were measured using enzyme-linked immunosorbent assays. Results: To date, samples have been collected from 42 non-diabetic and 141 diabetic patients, with 27 of these at low risk of developing a DFU, 19 at high risk of developing a DFU, 54 with an existing DFU and 41 with a healed wound within the 12-months prior to recruitment. Biomarker quantification has been performed and correlated with the respective clinical information, with initial results demonstrating links between candidate biomarkers and total wound area and the WIfl scoring system. Ongoing analyses is underway to determine utility for the prediction of healing or development of new ulcers in the patients now 24 months from recruitment. Conclusion: This biobank is a unique resource that will be valuable for creating novel diagnostic tools for risk assessments in people with diabetes and non-healing foot ulcers.

<u>Disparity in major limb amputation for M&#257;ori patients in Aotearoa New Zealand – a 12-year national retrospective study</u>

**Uma Sreedhar** 

Purpose: This retrospective, observational database study aimed to report the national major limb amputation (MLA) rates and outcomes for Māori and non-Māori patients who underwent MLA in Aotearoa New Zealand (AoNZ). Methodology: A combined dataset using the National Minimum Dataset and the Australasian Vascular Audit database was used to include Māori and non-Māori patients who underwent MLA between the 1st of January 2010 and the 31st of December 2021 in AoNZ. Crude, age- and sexstandardised rates of MLA, survival post-procedure, and a comparison of 1-year outcomes were recorded. Results: There were 5,293 MLA in 4,242 patients. A total of 818 Māori patients (19%) underwent 1,089 MLA and 3424 non-Māori patients (80%) underwent 4,204 MLA. The 12-year overall age-standardised rate for Māori undergoing MLA was higher (14.33 per 100,000; non-Māori 5.21 per 100,000, p<0.001). Māori patients underwent a higher number of multiple MLA (Māori 29%, non-Māori 20%, p<0.001); and 73% of Māori patients had their index MLA under the age of 69 years, compared to 41% of non-Māori patients (p<0.001). Māori women underwent proportionately more MLA (42%) compared to non-Māori women (35%, p<0.001). The 1year mortality rate after MLA was higher for Māori (33.6, 95%CI 30.2-37.1) compared to non-Māori (29, 95%CI 27.4-30.6). After adjustment for age, sex and comorbidities, there were shorter survival times post-MLA for Māori patients compared to non-Māori (HR 1.49,95%CI 1.34-1.66, p<0.001). Conclusion: There is significant inequity in the outcomes of MLA for Māori patients in AoNZ. Māori underwent more MLA, were younger, with a higher percentage of women, and shorter survival time post-MLA. This requires urgent attention with the implementation of equitable social and health policies and the introduction of healthcare delivery changes.

#### 10:08 am

Retrospective Review of Early Outcomes Of Inner-Branched Endovascular Aortic Repair (IBEVAR) For The Treatment of Complex Aortic Pathologies – A Single Centre Experience

Michael Na

Purpose Endovascular repair of complex aortic pathologies involving thoracoabdominal, pararenal, and juxtarenal segments remains one of the most technically demanding scenarios, often requiring advanced graft design. Endovascular aortic repair (EVAR) has evolved since the inclusion of fenestrated and branched devices (F/BEVAR), which are now recognised alternatives to open repair, however, their applicability is still limited by technical and anatomical constraints. In this context, inner-branched endovascular aortic repair (IBEVAR) has emerged as an innovative technique, incorporating directional branches within the main graft lumen. This design is intended to facilitate visceral vessel cannulation in narrowed or angulated segments, and to create a more stable environment for bridging stents. Our aim was to evaluate early outcomes for patients treated with IBEVAR at our centre. Methodology All patients undergoing IBEVAR at our institution were retrospectively reviewed. The primary outcome was operative technical success (SVS criteria); secondary outcomes included perioperative morbidity and mortality, reintervention, overall survival, aorticrelated mortality, and visceral branch patency. Results Among 14 patients, indications included symptomatic, large, or rapidly expanding pararenal/thoracoabdominal aneurysms, type IA endoleak, and infected pseudoaneurysm. Five patients were treated with off-the-shelf devices and nine with customised platforms. Operative technical success was 93% (13/14); one case had pre-existing critical stenosis of the coeliac and right renal arteries, which were intentionally covered. Two reinterventions occurred: SMA stent angioplasty and embolisation for a type II endoleak. There were three deaths: one from malignancy and two from multiorgan failure. Median follow-up was 487 days (mean 458). Conclusion This single-centre review of the first 14 IBEVAR cases demonstrates promising technical success and acceptable early outcomes. Further studies are needed to assess long-term durability.

## 10:10 am

## <u>Use of lithotripsy and drug coated balloon angioplasty in femoropopliteal disease</u> Prakash Balakrishnan

Purpose: Recent published data have demonstrated the rising incidence of peripheral vascular disease, likely as a consequence of rising cardiovascular disease worldwide. Management of peripheral vascular disease can be challenging but advancement in endovascular technology adds to our armamentarium. Use of lithotripsy has been shown to be safe and effective with good patency outcomes. Our study aims to assess the outcomes following the use of lithotripsy and drug-coated balloon (DCB) angioplasty in patients with femoropopliteal disease. Methodology: A retrospective observational study was performed over a 5-year period in a single tertiary Vascular referral centre. Patients who underwent lithotripsy and DCB angioplasty for femoropopliteal disease were recruited. Patients were identified from a local database and relevant data were collected from our local electronic patient management system. Results: 53 patients were recruited into the study with the majority identifying as New Zealand European (NZE) (81.1%). Majority of cases were performed for a Rutherford 5 classification (n=25) with a difference noted between both

gender groups, but this was not statistically significant (p=0.097). There were two cases (3.8%) of access complications and procedural complications. Only half of the patients were commenced on dual antiplatelet therapy post procedure. There were seven major adverse cardiovascular events (MACE) (13.2%) with one death being procedure related. There were four major adverse limb events (MALE) (7.5%) with three major amputations being performed at the same admission. Kaplan-Meier analysis demonstrated a 3-month freedom from restenosis of 82.8%. Conclusion: The use of lithotripsy and DCB angioplasty were shown to have satisfactory outcomes and patency in the management of patients with femoropopliteal vascular disease.

#### 10:12 am

<u>Indications and Outcomes from Major Limb Amputations at a Tertiary Referral Centre in Aotearoa New Zealand</u>

**Philip Allan** 

Purpose: Major limb amputations (MLA) as a result of peripheral arterial disease (PAD) and/or diabetic foot disease (DFD), has major physical, psychological, functional, and financial ramifications. Decision making when considering a major limb amputation is complex and requires an individualised approach. Furthermore, there is an increasing prevalence of PAD and DFD. The aim of this study was to evaluate the indications for and outcomes from MLA in the New Zealand context. Methodology: This was a retrospective single-centre study of patients who had a MLA between Jan 2022-Dec 2024 for PAD and/or DFD. Baseline demographics, indication, data on prior revascularisation attempts, and outcome data were collected. The primary outcome was mortality. Secondary outcomes were length of stay and reintervention. Data is expressed as mean±SD or %. Results: Overall there were 154 major limb amputations (64±13 years, 68% male), of which 48% were below-knee, 49% were above-knee, and 3% were through-knee. 48% of patients were New Zealand European and 42% were Māori. 41% of patients domiciled from the most socioeconomically deprived quintile of New Zealand. The indication for operation was infection in 62% and ischaemia in 61% of patients. 25% of patients had a revascularisation attempt during the current admission (76% endovascular), while 45% had a revascularisation attempt on a previous admission (65% endovascular). 30-day mortality was 8%, and 1-year mortality was 21%. The total average length of stay was 18±18 days. The reintervention rate was 17%. Conclusion: This study affirms that major limb amputations are a common procedure and remain a significant cause of morbidity and mortality. There is a disproportionate impact on Māori (18% of New Zealand) and those from socioeconomically deprived backgrounds. Similar proportions of patients undergo major limb amputations for infection or ischaemia. This data may help benchmark current standards for future work to improve patient outcomes.

## 10:14 am

A five-year comparison of outcomes of open versus endovascular revascularisation of acute lower limb ischaemia in a rural Australian centre.

Shawn Ng

Purpose Acute limb ischaemia is a vascular emergency due to its high risk for limb loss. Both open surgery and endovascular intervention are viable options to obtain revascularisation of the limb. The optimal strategy for limb salvage remains unclear. This study aims to compare surgical outcomes at 30 days in patients treated for acute limb ischaemia with either open surgical or endovascular revascularisation at a single rural centre over a five-year period. Methodology A retrospective cohort study design was used. Patients that presented to Wagga Wagga Base Hospital (New South Wales, Australia) with acute lower limb ischaemia requiring intervention between April 2019 and April 2024 were included in the study. Electronic medical records were accessed to identify patient demographics, the intervention and 30-day outcomes for each patient. Data recorded included diabetic status, level of occlusion, aetiology of acute limb ischaemia, and Rutherford classification. Results 87 patients underwent endovascular intervention, and 34 patients underwent open revascularisation. The mean age of patients was 67.4 years; 32.4 percent were women. At 30-day follow-up, amputation rates were 17.0 percent within the open group versus 9.0 percent within the endovascular group. Conclusion Endovascular treatment of acute lower limb ischaemia appears to have a lower rate of major limb amputation within 30 days. Further research with a greater patient population should be performed to confirm the advantageous efficacy of endovascular treatment over open surgical revascularisation.

## 10:16 am

<u>Juxta-Anastomotic Stenting in Arteriovenous Fistulas: A Pooled Analysis Asanka Wijetunga</u>

## 10:18 am

Following DCB treatment of peripheral arterial disease, dyslipidaemia was associated with increased requirements for revascularisation

**Louis Scarrold** 

10:20 am
<u>Altered Autophagy in Peripheral Arterial Disease</u>
Bronwyn Beelders

10:00 am - 10:30 am Morning Tea

Catering - Nursing, Vascular - Hall L

04 October 2025

10:30 am - 12:30 pm ADVANCES IN AORTIC IMAGING

Scientific Session - Vascular - Hall M

10:30 am

Endovascular Aneurysm Repair Surveillance Compliance: A 14-Year Experience at Single Centre Regional Centre
Hugh Marslen

10:40 am

Establishment of Contrast Enhanced Ultrasound (CEUS) into algorithm of EVAR Surveillance Denise Roach

INTRODUCTION: EVAR surveillance at the Royal Adelaide Hospital is traditionally performed with arterial duplex ultrasound (ADUS) with the possible addition of computed tomography angiography and /or digital subtraction angiography for further interrogation. We have added CEUS into the algorithm over the last three years. This study aims to evaluate our process and early results. METHODS: The process of commencing a new CEUS service will be reviewed. EVAR patients at our institution undergo ADUS for monitoring of graft patency and endoleak detection as the first line investigation, at 6 weeks, 6 months and annually post-EVAR. CEUS is performed when an endoleak is suspected on preceding imaging but ill defined. CEUS was performed with endoleak documentation at each stage. The results were further reviewed by a consultant vascular sonologist for consistency and validation. RESULTS: Data from CEUS from June 2022 to August 2025 was enrolled into the study with institutional ethics approval. 45 ADUS and CEUS studies were performed and evaluated. There were 17 cases in which ADUS identified an endoleak, but not type, with CEUS providing clarity in 16/17 (94%) of cases. CEUS enabled avoidance of further contrast administration in patients with either no endoleak, or type 2 endoleak; 11/17 (65%) of cases. CEUS was able to identify that 8/12 cases where ADUS concluded there was no endoleak, that were in fact type 2 endoleaks. CONCLUSIONS: For endoleaks which are inconclusive with ADUS, the introduction of a CEUS service was able to provide clarity in 94% of cases in our small series, with the majority of these not requiring any further imaging such as CTA, avoiding radiation dose and risk of kidney injury.

10:55 am

Role of AI EVAR surveillance

Fabien Lareyre

Endovascular aneurysm repair (EVAR) requires long-term surveillance to early detect and prevent post-operative complications. In this presentation, we highlight and discuss main studies that aimed to develop Artificial Intelligence based models for detection and/or prediction of outcomes following EVAR including occurrence of endoleaks.

11:10 am

Reliability of the DISFORM post-angioplasty dissection classification system

Tam Vo

Purpose: The DISFORM dissection classification was created using a Delphi methodology to address the

lack of a peripheral arterial classification system. This classification has recently been validated against clinical outcomes and showed that the DISFORM IV grade was an independent predictor of patency. Currently there is no data on the reliability of this method, which is vital in allowing for greater usage in clinical practice. This study aims to assess the reliability of the DISFORM classification. Methodology: Digital subtraction angiography images of the femoropoliteal arterial segment post angioplasty were retrospectively selected from 100 cases sourced from two studies investigating the use of IVUS in femoropopliteal disease. All cases were de-identified and presented in a form that could be viewed as "runs" simulating viewing during the procedure. Each case was scored by two blinded, independent readers using the DISFORM dissection classification system. A subgroup of 25 randomly selected cases was reanalysed three months after initial reading. Inter-observer and intra-observer agreement was tested using the kappa statistic. Results: Based on the 100 cases studied, the inter-observer reliability demonstrated moderate agreement (k=0.552, p<0.001) using the DISFORM classification system. From the subgroup of 25 cases, the intra-observer reliability also demonstrated moderate level of agreement for both readers (reader 1 - $\kappa$ =0.496 and reader 2 -  $\kappa$ =0.504). Conclusion: This study demonstrates that the DISFORM classification system has moderate inter- observer and intra-observer reliability. This should be taken into consideration when reporting femoropopliteal dissections and used to guide intraoperative planning and need for further scaffolding.

11:20 am

Evolving imaging and the understanding of aortic dissection Vikram Puttaswamy

11:30 am

<u>Abdominal Aortic Calcifications – Additional Considerations for Cardiovascular Health in Vascular Surgery Ryan Teh</u>

11:40 am Radiation safety Joseph Dawson

11:55 am

Reduced EVAR surveillance is safe to 5 years
Dhenisha Dahya

Purpose Post-endovascular aortic aneurysm repair (EVAR) surveillance is routinely performed worldwide, however there is no universally accepted protocol. The newly published European Society for Vascular Surgery (ESVS) 2024 Clinical Practice Guidelines (CPG) on the Management of Abdominal Aorto-Iliac Artery Aneurysms have recommended a dramatic reduction in follow-up imaging. The aim of this study was to assess the safety and efficacy of these surveillance recommendations using retrospective data from an aortic referral hospital Methods: This retrospective cohort study included all patients that underwent standard endovascular aortic aneurysm repair (EVAR) between January 1st 2000 and December 31st 2019. Computed Tomography Angiography (CTA) at 30-days were reviewed for 'failure' and 'high risk features' (defined by the ESVS CPG) by a Vascular Surgeon and Interventional Radiologist. Data were analysed for surveillance compliance; indication and timing of re-intervention; morbidity and aortic and all-cause mortality. Results: 477 patients underwent a standard EVAR between January 1 2000 and December 31 2019. 86% were male, median age for repair was 75.8 years (IQR 70-81) and median AAA diameter of 57mm (IQR 53-64). 64.8% of patients had high risk features on 30-day CTA (52.4% type 2 endoleak, 24.9% iliac diameter >20, 8.6% neck angulation >60). Re-intervention was significantly higher in patients with high risk features, 24% vs. 11.5% (Chi-square 6.712, df=1, Fisher's Exact Test p-value 0.013). 9 (8.7%) low risk patients required reintervention with a median time to re-intervention of 5 years (IQR 5-7). Aortic mortality was rare (n=5) and only observed in high-risk patients. Conclusion: The ESVS CPG surveillance recommendations appear to be safe for the majority of patients, with very few low risk patients requiring reintervention within 5 years of intervention.

12:05 pm

<u>Assessment + Management of large vessel vasculitis</u> <u>Robert Rhee</u>

12:20 pm <u>Discussion</u> Scientific Session - Nursing - Room L2

#### 10:30 am

Putting our best foot forward. An audit of iHRFS Podiatry care needs for inpatients admitted under Vascular Surgery at two major Sydney hospitals.

Jara Prince

#### 10:45 am

<u>Clinical Efficacy of Ovine Forestomach Matrix and Collagen/Oxidised Regenerated Cellulose for the Treatment of Venous Leg Ulcers: A Retrospective Comparative Real-World Evidence Study Rebecca Aburn</u>

#### 11:00 am

<u>Healing Horizons: Promising Research for Diabetic Foot Ulcers Karen Nixey</u>

The global prevalence of diabetes and diabetic foot ulcers (DFUs) is increasing, with a high-risk of morbidity, amputation, and mortality. Unfortunately, many DFUs progress to being chronic wounds and there is no consensus as to how to treat these wounds with many treatments having conditional/low levels of evidence. Moreover, wound care therapies take significant time and resource to develop. One wound care based treatment called 'Tissue Repair Technologies - Molecule X' or TRTx has shown promise. First reported in 2012 by University of Canterbury Professor Rudi Marquez-Mazlin. Discovered was a novel low molecular weight compound with apparent strong wound healing properties with the possibility of use in DFUs. In 2016, they identified the specific compound that was responsible for the wound healing effects termed the 'migration-stimulating factor'. The challenge was that this protein was unstable degrading quickly. The development team went onto design a mimic of this protein that had greater stability. Laboratory trials proved successful, with diabetic mice healing as fast as healthy mice; however murine tissue is not reflective of human healing. A subsequent cutting-edge equine model, whose skin has similar properties to that of humans with severe diabetes, has shown promise. By 2021, TRTx was released as a wound healing support gel for use in equine care. In humans, there has been some limited use off-licence in Plastic Surgery with good results. This year, the development team is applying for ethics to conduct a pilot study to investigate whether TRTx wound support gel increases the efficiency of split thickness skin graft donor site healing compared to standard best practice based on conventional wound dressings. This talk will discuss this promising area of research for wound care therapies for DFUs, and highlight the iterative process and challenges to take wound care therapies to clinical practice.

## 11:15 am

# <u>Limb Salvage with Larvae: Maggot Debridement Therapy in Diabetic Heel Ulcers Jayashanthi Ramarao</u>

Purpose: Diabetic heel ulcers (DHUs) are a challenging subset of diabetic foot ulcers (DFUs) due to their anatomical location and poor vascularity, leading to delayed healing, increased infection risk and high likelihood of progression to major limb loss. Conventional wound management strategies frequently fail, underscoring the importance of adjunctive therapies that promote healing and preserve tissue, such as maggot debridement therapy (MDT). This study aims to assess the utility of MDT in DHU management through a review of current relevant literature. Additionally, we report a retrospective single-centre case series of three patients with DHUs managed with MDT. Methodology: A literature review was conducted using MEDLINE and Embase databases to identify studies reporting outcomes of MDT on DFUs (n=279), with a specific focus on its application on DHUs (n=16). Results: Our literature review identified 279 studies discussing MDTs in DFUs, with only 16 studies focusing on DHUs. The existing literature supports MDT as a safe and effective adjunct in DFUs. Clinically, MDT achieves rapid and selective debridement, effectively clears infections, and plays a critical role in limb salvage. It is included in multidisciplinary wound care protocols, often in conjunction with surgical debridement, negative pressure wound therapy and advanced dressings. However, data specific to DHUs remains sparse in current literature. In our case series (n=3), adjunctive MDT facilitated selective debridement of non-viable tissue and infection control, resulting in healthy granulation of wound beds, and progressive wound healing. All patients in our case series have avoided major limb amputation with the use of MDT for DHUs. No adverse events were reported. Conclusion: MDT is a promising adjunct for managing DHUs, with a potential to reduce the need for major limb amputations. Although high-quality evidence remains sparse, both the existing literature and this case series underscores the value of MDT in limb salvage strategies. Future prospective studies are needed to validate these findings, with a particular focus on its use in DHUs.

11:30 am

<u>Innovative Wound Therapies in Limb Salvage: A Interdisciplinary Case Presentation of a Neuro-Ischemic</u>
Diabetic Heel Ulcer

## Hayley Rieman

Limb salvage in the context of neuro-ischemic diabetic foot ulceration remains a clinical challenge, particularly in patients with complex comorbidities and limited vascular targets. This case presentation demonstrates what can be achieved through a coordinated, interdisciplinary approach incorporating advanced wound therapies and patient-centred goals. The patient, a 60-year-old man with type 2 diabetes, renal transplantation, and a history of Charcot neuroarthropathy, presented in December 2024 with a necrotic lesion on the lateral heel. Despite prompt offloading and antimicrobial therapy, the wound deteriorated rapidly. Vascular imaging revealed severe arterial calcification, but no suitable target for revascularisation. Surgical debridement in January 2025 was followed by a structured wound management plan including negative pressure wound therapy (VAC), regular conservative sharp wound debridement (CSWD), nutritional optimisation, offloading, and a six-week course of adjunctive hyperbaric oxygen therapy (HBOT). In this case following HBOT progressive granulation, tendon coverage, and reduction of tissue deficit was seen. In May 2025 following interdisciplinary review to address residual wound stalling, NovoSorb® MTX, a novel, biodegradable, conformable dermal scaffold, was applied. Designed to integrate with host tissue and support neodermis formation, MTX provided a critical stimulus to encourage further healing. This case presentation illustrates how combining innovation, collaboration, and continuity of care can dramatically shift healing trajectories in high-risk patients. Proving that, in complex cases, wound dressings alone may not be enough.

#### 11:45 am

<u>Complex lower extremity wound management using multiple dressing modalities in a tertiary referral centre</u>

## Tanghua Chen

Complex lower limb wounds represent a great challenge for both the vascular surgeons and vascular nurses as it often requires advanced wound management strategies following the vascular surgical intervention. The advanced wound management methods commonly used to facilitate wound healing including topical oxygen therapy (TOT), larvae therapy, negative pressure wound therapy (NPWT). This presentation will discuss two of the advanced wound management methods naming the TOT and larvae therapy used at the tertiary referral centre for management of patients with lower limb / foot wound, and patient outcome following the selected wound management therapy. Selection criteria for this review: Patients who had TOT management: lower limb or foot wound with TOT treatment duration of three weeks or more, N=3. Patients who received larvae therapy: Ischaemic foot wounds following vascular surgical intervention, N=3.

## 12:00 pm

Case Series using GranuloxR (topical haemoglobin) spray in the management of complex Vascular wounds. Rebecca Aburn

Background: Chronic ulcerations affect millions of people in the world and is a huge challenge to the health systems to manage. Wounds are a multibillion dollar problem world-wide 28 billion / year in primary wound diagnosis and 31.7 billion / year in secondary diagnosis in the United States. 4,5 Managing these complex wounds can be expensive and costly being able to evaluate products and provide real world evidence is critical in helping clinicians to understand and use these products appropriately. Oxygen helps stimulate vascular endothelial growth factor (VEGF) and other signalling pathways that promote this process, improving blood supply to the area and speeding up healing. Granulox® is a medical device spray that contains highly purified porcine haemoglobin. When applied to a wound, it binds to oxygen from the surrounding air and transports it directly to the wound bed. This localized oxygen delivery supports the healing process, especially in chronic or non-healing wounds . Aim: Determine the impact of Granulox® on wounds in acute vascular setting. Methodology: We examined 8 vascular patients with a range of wound types. The Granulox® spray was initiated early in some cases and on older wounds we used digital photography to monitor progress. We used SnapshotNIR-kent infrared photography to demonstrate increased oxygenation over time in the wound bed. Results: Improved healing rates were observed and early start to treatment along with good wound bed preparation saw healing rates in wounds that were determined to be unhealable. Conclusion Granulox® improves healing and pain in wounds which fail to improve with standard treatment. Granulox in this case series reduced pain scores and increased oxygen the wound bed over time after four weeks of use. The advantages are that it is Non-invasive and easy to apply. It also demonstrated more research needed around measuring oxygen in the wound bed.

04 October 2025

12:30 pm - 1:30 pm Lunch

Catering - Vascular, Nursing - Hall L

12:30 pm - 1:30 pm

The Board of Vascular Surgery - Supervisors and Trainers Meeting

Business Meeting - Vascular - City Suites 1 - City Suites 2

04 October 2025

12:45 pm - 1:15 pm

Gore & Associates Lunchtime Symposium - Aortic Controversies, Real world clinical data update on treating challenging Aortic necks

Scientific Session - Vascular - Hall L Lounge

12:45 pm

Aortic Controversies, Real world clinical data update on treating challenging Aortic necks Robert Rhee

04 October 2025

1:30 pm - 3:00 pm EVOLVING IMAGING IN VASCULAR SURGERY

Scientific Session - Vascular - Hall M

1:30 pm

**CLTI/PAD imaging** 

Marta Lobato

Abstract The concept of the "Woundosome" has emerged as a novel framework to better understand and manage chronic limb-threatening ischemia (CLTI). By integrating anatomical, physiological, and wound-healing perspectives, the Woundosome provides a more comprehensive approach to procedural planning and outcome assessment. In this discussion, we will explore how the Woundosome model can influence therapeutic strategies, optimize revascularization choices, and improve limb salvage rates. To illustrate its practical implications, we will present selected clinical cases highlighting its role in guiding decision-making and predicting procedural outcomes in patients with CLTI.

1:45 pm

Effect of Revascularisation on Pedal Acceleration Time (PAT)
Rawiri Kapa-Hakeney

Purpose: Measurement of tissue perfusion is key in management of peripheral arterial disease. Pedal acceleration time (PAT) is a non-invasive ultrasound technique, and can be used despite digital amputations, wounds, or non-compressible vessels. However, to what extent PAT changes with

revascularisation, and if this differs by revascularisation technique is unclear. The aim of this study was to report and compare the change in PAT with open and endovascular revascularisation. Methodology: This was a prospective single-centre observational study. Patients with claudication or critical limb threatening ischaemia (CLTI) were recruited between 2020-2021. PAT measurements were obtained by trained sonographers, one day before and one day after revascularisation. Data was compared using Chi-Square or ANOVA and reported as % or median (IQR). Results: 142 patients/limbs underwent PAT measurement (107 endovascular, 22 open, 13 hybrid [excluded]). The median age was 72yrs (70% male; 65% diabetic, 22% ESRF). Most patients had CLTI (15% rest pain, 80% tissue loss). Median pre-revascularisation PAT was 245.2±71.8ms, which reduced significantly post-revascularisation to 125.1±45.4ms (P<0.001). Open surgery resulted in a greater decrease in PAT compared to endovascular (136ms [IQR 52-197.5] vs 96ms [IQR 48-96], P<0.001). Diabetic patients had a smaller change in PAT with revascularisation (48.7ms less, P<0.001). Conclusion: This study shows that PAT responds appropriately to revascularisation. Open revascularisation resulted in a larger improvement in PAT compared to endovascular revascularisation. Diabetes reduced the average improvement in PAT. Future studies should seek to validate these findings in larger cohorts and assess the impact of disease severity on PAT.

1:55 pm IVUS Richard Allen, Richard Allan

### 2:10 pm

An international, multicenter study reveals strong correlation between pedal acceleration time and toe pressure

## **Dhenisha Dahya**

Purpose Pedal acceleration time (PAT) is a novel non-invasive perfusion measurement that may have usefulness in peripheral artery disease (PAD) and diabetic foot disease (DFD). The objective was to assess the change in PAT post-revascularisation, and the association of PAT with wound healing and major limb amputation (MLA). Methods This observational prospective study reviewed all patients that underwent PAT and presented with intermittent claudication, chronic-limb threatening ischaemia and DFD at a single tertiary center from 1/7/2019 to 30/6/2022.PAT was defined as the time (ms) from the onset of systole to the peak of systole in the mid-artery. Pre and post-revascularisation PAT were taken, and patients were followed until June 2023 with the outcomes of wound healing, MLA and death collected. A sub-analysis was performed separately for patients with diabetes. Wilcoxon signed-rank test was used to determine the change in PAT, and Mann-Whitney U test to compare to dichotomous groups. Results Overall, 389 patients (455 limbs) were included, with a follow up of 1.74 years (interquartile range (IQR) 1.36-2.27). Postrevascularisation the median PAT decreased by 91 ms (IQR 44-165.5; p<0.001). The change was smaller for patients with diabetes (76 ms, IQR 36-141.5, p<0.001) compared to no diabetes (151 ms, IQR 73.5-195.3,p<0.001). Patients that achieved wound healing had a lower final median PAT (healed: 104 ms, IQR 88.5-124 vs. not healed: 138 ms, IQR 100-186; p<0.001). Patients that underwent MLA had a median final PAT of 150.5 ms (IQR 110.3-198) compared to those that didn't undergo a MLA 110 ms (IQR 89-147, p<0.001). Conclusion PAT responds to lower limb revascularisation, and the post-revascularisation PAT appears to be associated with wound healing and MLA. PAT may be a valuable tool to assist with assessing the success of revascularisation and the potential for wound healing in patients with and without diabetes.

## 2:20 pm

## <u>Thrombus age in DVT: Imaging pearls</u> <u>Iris Baumgartner</u>

The accurate assessment of thrombus age in deep vein thrombosis (DVT) remains a clinical challenge with significant therapeutic implications. Patient history is unreliable, and recurrent DVT cannot be excluded in up to 30% of cases. Standard ultrasound offers high sensitivity for acute events but is limited in recurrent or chronic disease, where residual abnormalities persist for months. Recent imaging advances, including CT, MR venography, and direct thrombus imaging (MR-DTI), provide valuable tools for distinguishing acute from chronic thrombi. In particular, MR-DTI has demonstrated high accuracy in differentiating acute recurrent DVT from chronic residual findings without contrast and within a short acquisition time. This presentation reviews key imaging modalities, highlights evidence from multicenter studies, and discusses their role in guiding optimal therapeutic strategies.

## 2:35 pm

Quantitative imaging of microvasculature in patients with diabetes using optical coherence tomography Ruth Battersby

Purpose The skin microvasculature is important in supporting wound healing of diabetes-related ulcers. However, current imaging methods (ultrasound, laser doppler, MRI) are unable to directly visualise and

quantify changes in these vessels (diameter 30 – 100 microns). This study demonstrates the use of a new imaging method to directly visualise changes in microvascular structure and function. Methodology We developed a novel medical imaging scanner using optical coherence tomography (OCT) to perform noninvasive imaging of the microvasculature in the dermis of the foot. The scanner was placed directly onto the intact skin and automated analysis software quantified changes in the optical signal to identify the diameter and flow speed in individual vessels within a 5 x 5mm field of view. Two co-located scans were acquired, one showing baseline flow at room temperature (32 degrees C), and a second showing vasodilated flow after 20 minutes of localised heating of the skin at 42 degrees C. Results Scans of healthy volunteers showed an intricate network of skin microvessels, and increases in vessel diameter, flow speed and vessel density after localised heating. Scans of people with diabetes, with foot oedema, showed almost no microvascular flow, but some flow in larger microvessels (> 100 microns). We observed an increase in flow in these larger vessels of patients with diabetes after localised heating. Pre- and post-surgery scans of a patient undergoing popliteal and tibial angioplasty showed a large increase in microvascular flow at 2 weeks post-surgery. Conclusion OCT allows visualisation and quantification of changes in the skin microvasculature. This has the potential to quantify the impact of microvascular flow on wound healing outcomes for diabetes-related foot ulcers, providing additional information for improved patient management.

2:45 pm

<u>Photon-Counting CT Imaging of Stented Visceral Arteries: A novel and effective imaging modality Connor Dibblin</u>

2:55 pm Discussion

1:30 pm - 3:00 pm Integrity

Scientific Session - Nursing - Room L2

1:30 pm <u>Venous Leg Ulcer Guidelines</u> <u>Juliet Scott</u>

1:45 pm

<u>Professional Identity Formation as a Vascular Research Nurse: Translating Clinical Skills into Research Jasmine Chan</u>

Purpose Research nurses hold a unique role at the intersection between clinical care and research practice. Reflecting on the professional identity formation of research nurses can give insight into their role in multidisciplinary vascular care settings, to advance patient outcomes and inform clinical decision-making. Drawing on my professional transition from a new-graduate registered nurse to the first vascular research nurse at our tertiary center, this paper aims to describe how core clinical competencies can be adapted to a research context. Methodology Using a structured reflective approach, I explore my transition from bedside nursing to research practice and the skills I developed to conduct research with complex patient populations. Results My research role shares similarities to bedside nursing. I provide patient-centered care, address concerns, and reinforce participant health literacy and understanding. Core skills are shared, like open communication with the research team and clinical assessment. I developed new skills in patient screening, recruitment, informed consent, and clinical trial coordination through courses and mentoring. I have more variety than patient-facing work, as I manage and collect research data, monitor study compliance, and develop operating protocols. I faced challenges recruiting patients with multiple chronic conditions and learned strategies to navigate issues of eligibility, engagement, and retention. Supporting patients in vascular trials made me appreciate how relational research nursing is. Patients with PAD and other comorbidities require time and reassurance due to their complex medical histories. This taught me the importance of patience, empathy, and communication. Conclusion Research nursing bridges clinical care and research practice, improving patient engagement and research quality through reflective, evidence-informed practice. This means that vascular research competency can develop in newly graduated nurses.

1:57 pm

System-Wide Solutions to Address Missed Opportunities in Chronic Oedema Management

## Jana Pinkova

Introduction: Chronic oedema a progressive and under-recognised condition that indicates lymphatic system insufficiency. It encompasses lymphoedema, venous oedema, dependency oedema, cancer-related oedema, obesity-related oedema, lipo-lymphedema, and mixed or multifactorial oedemas. If not effectively managed, chronic oedema can result in complications such as recurrent cellulitis, skin and tissue changes, functional disability, pain, disfigurement, and, in severe cases, increased risk of mortality. Background: The prevalence of chronic oedema is growing with the ageing population and rising rates of obesity, vascular disease, and cancer survivorship. Despite its significant burden, early detection and timely intervention are often missed. Cellulitis, a common complication, frequently leads to emergency presentations and hospital admissions, particularly among patients with undiagnosed or poorly managed oedema. Modalities such as compression therapy, skin care, elevation, movement, weight management and patient education remain underutilised. Discussion: There is an urgent need for a coordinated, system-wide approach to managing chronic edema. This includes: early identification and proactive management, integrated and interdisciplinary models of care, workforce education and training, timely referral to lymphoedema specialists, the use of digital tools and telehealth, and clinical leadership. Advanced practice vascular nurses can lead change and bridge service gaps, champion education, advocate for compression therapy, and guide the management of complex wounds or cellulitis. Nurse-led models of care ensure patients are managed holistically, reducing preventable hospitalisations and improving outcomes. Conclusion: A strategic, system-wide solution is essential to improve outcomes for patients with chronic oedema. Advanced practice vascular nurses will be pivotal in delivering high-quality, person-centred care, empowering patients, and leading service redesign to address this silent epidemic.

## 2:09 pm

What is Vascular Surveillance Nursing? The South Australian Experience Marianne Lupson, Jijimol Poulose, Jeffrey Bull

## 2:21 pm

What happens when there are breaches in Patient Safety and Quality? Sue Monaro

Introduction: Breaches in patient safety and quality are often caused by the increasing complexity of patients, interventions, medical devices, and medications, as well as inadequate communication. When care is compromised, a robust investigation of complaints and incidents must be conducted, which also ensures the psychological safety of staff. Aim: To outline processes to investigate complaints and incidents, support staff, and generate lessons learned. Findings: The Human Factors framework is a lens for exploring patient safety and quality. Understanding the interaction between people, management, and workplace elements within a complex healthcare system is important. Statewide complaints and incident policies are based on human factors, systems thinking, and just culture, with a clear outline of how health services must investigate and report. For serious incidents, the policy outlines the requirement for a Preliminary Risk Assessment, open disclosure, patient/carer/family support via a Dedicated Family Contact, addressing concerns about staff welfare and conduct, incident notification and escalation via a Reportable Incident Brief. Media interest, statewide risks, and external notifications are taken into consideration. There are four incident review methodologies available for the Serious Adverse Event Review Team: Root Cause Analysis, London Protocol, Concise and Comprehensive incident analysis. Following their investigation there is feedback to the ministry, patients/families and staff, oversight for recommendations by local governance committees, and tabling at the state-wide Clinical Risk Action Group. Conclusions: Psychological safety and a culture for reporting and investigating complaints and incidents are a priority for healthcare organisations. Investigations should provide recommendations to improve practice and communication. The system is considered in terms of how clinicians work, why complaints or incidents occur, and the design of a better system for working.

#### 2:33 pm

## <u>Lessons learned from COVID-19 about the care of the older person</u> <u>Sue Monaro</u>

Purpose: During the COVID-19 pandemic, the care of older patients admitted to hospital changed due to policies restricting visitors. The aim of this study was to explore nurses' experiences of caring for patients with delirium in an Australian acute care setting, which also highlighted the impact of infection prevention and control measures implemented in response to the pandemic. Methodology: This interpretive, qualitative study recruited nurses from two acute aged care wards in a Sydney metropolitan tertiary hospital for semi-structured interviews to explore their experiences of caring for patients with delirium. Eleven interviews were recorded and transcribed verbatim. Data was analysed qualitatively using human factors principles as an interpretative lens. Findings: Experiences related to COVID-19 were extracted from the data. Participants experienced difficulties delivering patient-centred care due to the inability of family members to be present,

resulting from public health orders and the implementation of visitor policies. Enforcing isolation and excluding the family resulted in care failing to meet nurses' expectations, with additional challenges in care provision and communication. Even with the use of technologies such as Zoom, which enables families to 'see' and interact with patients online, this didn't have the same outcome as having family members physically present in the ward to assist with the care of patients with delirium. Conclusion: Nurses described an overwhelming sense of responsibility and moral injuries. The advice to place patients with delirium in isolation was inconsistent with the Australian Commission on Safety and Quality in Health delirium clinical care standard. Understanding the complexity and barriers to managing delirium during a pandemic, where there was rapid and, at times, conflicting information. Our findings will contribute to informing the implementation of controls in the event of future pandemics, including workforce preparation and support.

2:45 pm <u>Discussion</u>

04 October 2025

3:00 pm - 3:30 pm Afternoon Tea

Catering - Nursing, Vascular - Hall L

04 October 2025

3:30 pm - 5:30 pm ANZSVS & TRAINING

Scientific Session - Vascular - Hall M

#### 3:30 pm

<u>Long-term Impact of Dyslipidemia on Sac Dynamics after Endovascular Aortic Repair for Abdominal Aortic Aneurysms in the GREAT Registry: an Insight in Dyslipidemia Using Propensity Matched Controls Gabrielle Stratford</u>

Purpose: The influence of dyslipidemia on long-term aneurysmal sac behaviour following endovascular aortic repair (EVAR) remains uncertain. This study examined whether dyslipidemia affects sac regression or clinical outcomes in patients treated with the GORE® EXCLUDER® endoprosthesis. Methodology: We conducted a retrospective analysis of 3,453 patients with infrarenal abdominal aortic aneurysms from a multinational registry (2014–2016), encompassing centres across Europe, the Americas, Australia, and New Zealand. All patients underwent elective EVAR and completed 6-year imaging follow-up. Patients were stratified by dyslipidemia status and matched 1:1 using propensity scores to adjust for baseline differences. The primary endpoint was sac regression; secondary endpoints included mortality, endoleaks, and reinterventions. Results: After matching, 2,269 patients with dyslipidemia were compared to an equal number without. Sac regression at 1 year (p=0.70) and at 6 years (p=0.14) did not significantly differ. Endoleak and reintervention rates were similarly low in both groups throughout follow-up. Notably, allcause mortality was significantly lower in the dyslipidemia group (6.7% vs. 10.6%; p=0.018), while aorticrelated mortality was comparable (p=0.662). Within the dyslipidemia cohort, increased aneurysm diameter at 1 year (p=0.037) and older age at 6 years (p<0.001) were associated with sac expansion. Patients without dyslipidemia were more often treated off-label (p=0.030) and had shorter aneurysm necks (p=0.035), potentially contributing to their higher mortality. Conclusions: Dyslipidemia was not associated with inferior sac regression or procedural outcomes following EVAR. The lower all-cause mortality among dyslipidemic patients may reflect greater use of cardiovascular preventive therapies. These findings support the longterm safety and efficacy of EVAR in patients with dyslipidemia.

3:40 pm

Contemporary risk factor management in atherosclerosis

## **Adam Nelson**

3:55 pm

<u>The Q-ACE score – a clinical risk score to predict major adverse cardiovascular events in patients with abdominal aortic aneurysm</u>

**Chinmay Sharma** 

Background: Abdominal aortic aneurysm (AAA) patients are at increased risk of major adverse cardiovascular events (MACE). Currently, no AAA-specific clinical tools are available to accurately predict this risk, necessitating an individualised risk stratification model. Objective: This study aimed to develop and validate a simple clinical risk score (Q-ACE score) to predict the risk of MACE in patients with abdominal aortic aneurysm. Methods: A retrospective analysis was conducted on 371 patients with small asymptomatic AAA from three Queensland hospitals between 2002 and 2019. A Cox proportional hazards model was built using stepwise selection, identifying key variables predictive of MACE. The dataset was randomly divided into a training cohort (60%) and a validation cohort (40%) to develop and validate the Q-ACE score. A parsimonious cox proportional hazards model was developed with clinical variables included based on stepwise selection and refined using importance via Breiman permutation. The point score was developed based on rounded beta-coefficients and assessed using the validation cohort. Model performance was assessed through concordance statistics (c-statistics) and Kaplan-Meier analyses. Results: The final risk model included age ≥75 years, gender, diabetes, AAA diameter ≥50mm, and chronic kidney disease (CKD) stage ≥3B. The Q-ACE score exhibited good discrimination in the training (c = 0.70; 95% CI: 0.58-0.80) and validation cohorts (c = 0.73; 95% CI: 0.64-0.82). Patients classified as high risk had a significantly increased hazard of MACE (HR = 2.5; 95% CI: 1.25-5.01) compared with low-risk patients (HR = 0.28; 95% CI: 0.12-0.64). Conclusion: The Q-ACE score provides a clinically relevant tool for predicting cardiovascular risk in AAA patients, demonstrating good discrimination and potential for guiding individualised secondary prevention strategies. Further validation in larger, diverse cohorts is necessary to confirm these findings.

4:05 pm

<u>ESVS Ascending thoracic endovascular aortic repair position statement</u> <u>Santi Trimarchi</u>

4:20 pm

<u>Evaluating the Safety and Accuracy of Three Large Language Models in Vascular Surgery Cases</u>
<u>Asanka Wijetunga</u>

4:30 pm

<u>Peri-Operative Nutrition in Peripheral Arterial Disease</u> <u>Bronwyn Beelders</u>

4:40 pm

<u>Cutting Down Complications: The Role of Vascular Surgery in Transcatheter Aortic Valve Implantation</u>
<u>Reane Macarulay</u>

4:50 pm

<u>Time-Variable Training: Initial Experience in the Vascular SET Program</u>
Bethany Stavert

Training institutions are increasingly recognising the value of time-variable training (TVT) to support flexibility, sustainability, inclusivity, and wellbeing in surgical education. This study reflects on the initial implementation of TVT within the ANZSVS Vascular SET program, drawing from the lived experience of a 0.8 FTE (full time equivalent) trainee in a single tertiary centre. Methods: Themes identified from a critical realist literature synthesis were used to guide a structured reflection on the experiences of a current SET3 trainee, incorporating feedback from the trainee, supervisors, peers and other stakeholders. Results: Reflections over a six-month period revealed positive outcomes for the trainee, including [e.g., sustained operative exposure, research opportunities, improved work-life balance], though some barriers were identified [e.g., reduced continuity of care, scheduling complexity]. Supervisors reported that challenges were mitigated by adequate staffing and clear handover protocols. Peers noted preserved clinical safety and learning continuity. Limitations include the standalone nature of the 0.8 FTE role without a matched job-share. Conclusions: This early experience supports the feasibility of TVT within the Vascular SET curriculum, with favourable feedback from all stakeholder groups. Further exploration and piloting of scalable, adaptable TVT models are needed to inform broader adoption within the vascular surgical training program.

Global Vascular Companionship Update **David Goh** 5:10 pm **ANZSVS Guidelines Project** Robert Fitridge 5:20 pm VIRWG/MRAC Update Mark Jackson 3:30 pm - 5:30 pm Closing and ANZSVN AGM Scientific Session - Nursing - Room L2 3:30 pm Closing 3:45 pm **Award Presentations** 4:00 pm **ANZSVN Annual General Meeting** 04 October 2025 5:30 pm - 6:30 pm **ANZSVS Annual General Meeting** Business Meeting - Vascular - Hall M 04 October 2025 7:30 pm - 11:00 pm **Conference Dinner (Ticketed Event)** Speciality Dinner - Nursing, Vascular - Adelaide Town Hall

05 October 2025

7:30 am - 8:15 am Solventum Breakfast Symposium: Limb salvage – A multidisciplinary approach

The Auditorium, Adelaide Town Hall, 128 King William St, Adelaide SA 5000

Breakfast Session - Vascular - Hall M

8:30 am - 10:00 am TRAUMA / AVF

Scientific Session - Vascular - Hall M

8:30 am

Radiological surveillance following thoracic endovascular aortic repair for blunt thoracic aortic Injury – Does it happen?

Lauren Whearty

8:40 am

<u>Gender disparities in presentation, treatment patterns and outcomes in CLTI patients in Australia.</u> Suhanya Seimon

8:50 am

Mortality Outcomes from TAA and AAA - Prediction Using the APACHE Score Ryan Teh

Purpose: We aimed to evaluate the use of APACHE score in predicting mortality in open and endovascular TAA and AAA repair. Methodology: We performed a retrospective cohort study, in a single-centre tertiary hospital, on all patients who underwent surgery for either TAAs or AAAs between January 2014 - December 2022 (n=424). Of these, patients who required admission to ICU post-operatively were included, with APACHE scores collected prospectively. Outcomes included ICU and total length of stay, as well as mortality. Receiver operator characteristics (ROC) is used to evaluate the use of APACHE on inpatient mortality and long-term 5-year mortality. Results: 72.0% (n=203) had elective AAA, 18.4% (n=52) ruptured AAA, 7.1% (n=20) elective TAA and 2.5% (n=7) ruptured TAA. 68.8% (n=194) underwent endovascular repair and 31.2% (n=88) open. Mean age was 74.1±8.66 years with male preponderance of 82.6% (n=233). ROC demonstrates improved area under curve (AUC) for inpatient mortality (0.927), compared to 5-year mortality (0.594), open (0.982) compared to endovascular (0.819) repair, and elective (0.990) compared to rupture (0.861). Conclusion: APACHE score is a predictor of inpatient mortality after TAA and AAA repairs, with improved predictions in open compared to endovascular repair, and in elective surgeries compared to ruptures. This may highlight reduced physiological derangements from endovascular approaches. References 1) Vos CG, de Vries J-PPM, Werson DAB, et al. Evaluation of five different aneurysm scoring systems to predict mortality in ruptured abdominal aortic aneurysm patients. Journal of Vascular Surgery 2016; 64: 1609-1616. DOI: 10.1016/j.jvs.2016.05.099. 2) Kabbani LS, Escobar GA, Knipp B, et al. APACHE III score on ICU admission predicts hospital mortality after open thoracoabdominal and open abdominal aortic aneurysm repair. A n n a I s o f v a s c u I a r s u r g e r y 2010; 24: 1060-1067. DOI: 10.1016/j.avsg.2010.07.011.

9:00 am

When Coils Do Not Suffice – Liquid Embolization with Onyx for Treatment of Bleeding Arne Schwindt

9:13 am

One-Year Clinical Outcomes from the WRAPSODY® Arteriovenous Access Efficacy (WAVE) Trial Ari Kramer

9:23 am

<u>Elevated serum biomarkers correlate with markedly reduced long-term patency following endovascular stenting of aorto-iliac disease</u>

**Louis Scarrold** 

Purpose The relationship between atherosclerosis and total cholesterol (TC), high-density lipoprotein (HDL), low-density lipoprotein (LDL), Lipoprotein(a) (Lp(a)), triglyceride (TG), and homocysteine level is well established. Few studies have examined the relationship between these serum biomarkers and long-term stent patency, following endovascular stenting of aorto-iliac occlusive disease (AIOD). Methodology We report a retrospective post-hoc analysis of the Covered versus Balloon Expandable Stent Trial (COBEST) at Royal Perth Hospital and other Australian COBEST centres. Patients were observed for five-years following endovascular stenting. Primary endpoint was stent patency, as determined by ultrasound imaging or angiography. Stent patency was compared with TC, HDL, LDL, Lp(a), TG and homocysteine. Results Aorto-iliac stents were placed in 168 patients (83 covered stents and 85 bare metal stents). Baseline characteristics

were similar between the two groups. The cohort was primarily Caucasian (97%). There was no significant difference in the distribution of the biomarkers between the two groups. Covered stents had significantly higher patency than bare-metal stents in Trans-Atlantic Inter-Society Consensus C and D lesions (Hazard ratio [HR], 8.639, 95% CI, 54.253–75.753; P < 0.001). Patency of stents at five years was markedly reduced in patients with Lp(a) elevated above the normal range (HR: 10.38, 95%CI 5.39–19.99, P<0.001); elevated TG (HR: 5.92, 95%CI 3.37–10.38, P<0.001); elevated homocysteine level (HR: 5.21, 95%CI 2.70–10.07, P<0.001), and an elevated LDL ratio (HR: 6.14, 95%CI 2.70–11.41, P<0.001). Conclusion Following endovascular stenting of aorto-iliac disease, stent patency at five-years is markedly reduced in patients with increased Lp(a), TG, homocysteine, and LDL ratio. This may impact patient selection and counselling; and raises the hypothesis that aggressive post-procedural treatment of biomarkers may improve long-term outcomes.

9:33 am
<u>EndoAVF update</u>
<u>Thavenesh Ramachandren</u>

9:46 am

Role of Al in predicting AAA growth and rupture Juliette Raffort-Lareyre

Artificial intelligence (AI) and machine learning (ML) have brought new insights for the management of abdominal aortic aneurysms (AAA). In this presentation, we focus and summarize main studies that developed AI/ML models to evaluate the risk of AAA growth and rupture. We provide an overview and analysis on methodology used, discuss current limits and highlight future directions.

05 October 2025

10:00 am - 10:30 am Moderated ePoster Session - SUNDAY

Scientific Session - Vascular - Hall L Lounge

10:00 am

A systematic review of Automatic Segmentation of Computed Tomography Imaging of Abdominal Aortic Aneurysm

**Chinmay Sharma** 

Background: Artificial intelligence (AI) based automatic segmentation has demonstrated substantial use in measuring features of abdominal aortic aneurysm (AAA) on computed tomography angiography (CTA) scans. Automatic segmentation models have the potential to aid clinicians in assessment and management of AAA patients and save time taken for manual measurement. Objective: This review assessed the performance and accuracy of AI automatic segmentation models in measuring features of AAA. Methods: Electronic databases were searched systematically for studies assessing measurement of AAA features on CTA images using automatic segmentation methods as well as manual segmentation methods. The primary outcome measure of AI model performance was DICE similarity coefficient (DSC), representing the proportional overlap between the prediction segmentation and the standard reference. Secondary outcomes were sensitivity and specificity of AAA diagnosis. Results: A total of 23 studies involving 4015 CTA scans from 1802 patients were included. Meta analysis showed overall pooled mean (95% CI) DSCs for segmentation of AAA, lumen and ILT were 0.90 (0.86-0.94; I2=98.4%, 0.93 (0.92-0.93; I2=98%) and 0.85 (0.82-0.88; I2=96.5%) respectively. Meta-analysis of sensitivity of diagnosis of AAA produced a pooled diagnostic odds ratio (DOR) of 176.1. Conclusion: Al-based models demonstrate diagnostic accuracy for AAA comparable to that of experienced vascular surgeons. Moreover, these models provide enhanced reproducibility across all patients and longitudinal imaging studies due to the consistent application of standardised algorithms.

10:02 am

Al in Vascular Surgery: Promise, Pitfalls, and the Path Forward Paulina Bruessel

Purpose: The use of Artificial Intelligence (AI) as an informational resource has become a ubiquitous phenomenon in the last decade. AI shows exciting potential in medical research and vascular surgery is no exception to this. Recurrent neuronal networks have been used to predict bypass stenosis or identify

abdominal aortic aneurysms, and algorithms have been developed for predicting ischaemic events following carotid intervention. While the ability of AI to process and distil big data into clinically useful insights is enticing, awareness needs to be spread about the limitations of AI to guide clinical practice. Methodology: A comprehensive literature review was conducted to identify studies that examine current and emerging applications of AI in vascular surgery. Articles evaluating the advantages of AI compared to traditional research methodologies were included, alongside studies highlighting the potential drawbacks, ethical concerns, and technical limitations of AI in this field. Results: Studies consistently report that AI enhances efficiency, reproducibility, and diagnostic accuracy, particularly in the interpretation of imaging, disease diagnosis, and image-guided vascular interventions. Key limitations in the application of AI include the 'black box bias' where the reasoning behind the algorithms output cannot be comprehended by the user, propagation of selection bias, variation in AI methodology, lack of standardised reporting, and threats to patient confidentiality. Conclusion: As AI becomes more prominent in healthcare, it is crucial that vascular surgeons are aware of its applications, potential diagnostic and prognostic capabilities, but also of the limitations and ethical considerations surrounding its use. Clinicians must be prepared to engage in informed discussions with patients about the use of AI in their care, ensuring that its implementation enhances, rather than compromises the integrity of medical decision making.

10:04 am

Perioperative Older Persons Service (POPS) pilot, a Vascular-Geriatrics approach Jun Cheul Park

10:06 am

<u>Inari Mechanical Thrombectomy for primary and in-stent Acute Iliofemoral Deep Vein Thrombosis</u>
<u>Calyb Austin</u>

Purpose: Acute iliofemoral deep vein thrombosis (aIFDVT) carries risks of pulmonary embolism (PE) and post-thrombotic syndrome (PTS). The Inari range of mechanical and suction thrombectomy offers a wide range of options for primary and in-stent aIFDVT. Methodology: Retrospective analysis of 12 patients with aIFDVT treated between 2023 and 2025 using Inari ClotTriever or FlowTriever. All followed a standardised antithrombotic and surveillance protocol. Primary outcomes included technical success, symptom improvement, and peri-procedural complications. Results: Twelve patients (mean age 65, 54% female) were included. PE was present in 54% of cases, with 60% of these cases being treated during the same admission. 40% had a previous stenting history (10% for PTS and 30% for aIFDVT), with a median stent age of 6 years (range, 2-8 years), and one of these required re-stenting. Of the primary aIFDVT, four required stenting, and 2 were tumour thrombi. ClotTriever was used in 5 cases, FlowTriever in 3, and both in 4 cases, with 3 cases using adjunctive ProTrieve embolic protection. Technical success was 100%. The mean operative time was 118 minutes, with an estimated blood loss of 20 mL. The mean postoperative stay was 3 days (range, 0-17 days). One procedural complication (8%) occurred with a PE that was managed intraoperatively. There was no access site thrombosis or bleeding. Clinical success was achieved in all patients, with 100% reporting symptom improvement. Primary patency at median 6-month follow-up was 92%; secondary patency was 100%. One reintervention occurred due to stent thrombosis linked to non-adherence with anti-coagulation. Villalta scores at 3, 6, and 12 months were <5. Conclusion: The Inari system offers a wide range of options for acute iliofemoral DVT, including primary, in-stent, and tumour thrombus scenarios.

10:08 am

<u>High Risk Multidisciplinary Meetings in Vascular Surgery</u>
<u>Meg Beaumont</u>

10:10 am

<u>Distal transradial access for intervention in immature arteriovenous fistulae</u> <u>Jacob Gordon</u>

10:12 am

<u>Discrepancy Between Prescription and Achievement of Guideline Targets in Peripheral Arterial Disease</u> <u>Sophie James</u>

10:14 am

Feasibility testing of a wound care phone application for diabetes-related foot ulcer management Lucinda Weekes

10:16 am

Assessment of long-term safety and efficacy of carotid artery vascular surgical interventions in the elderly Shirley Cai

Carotid artery stenosis is treated with endarterectomy (CEA) or stenting (CAS) to reduce future stroke risk. Previous large trials have shown that treatment reduces risk of stroke, including in those with asymptomatic high-grade disease. However, these studies had limited data in patients over 80 years of age. We aim to assess the safety and efficacy of carotid artery intervention in octogenarians in a quaternary centre. A retrospective study was conducted using the Australasian Vascular Surgery (AVA) database. All patients who underwent carotid artery intervention by the vascular surgical unit from January 2012 to December 2022 was reviewed. A regression analysis was performed for risk factor stratification. There was a total of 503 CEA and 80 CAS, with 27% performed in patients older than 80 years of age. The CEA cohort had 60% symptomatic patients, the overall major adverse event rate was 4% including 3 perioperative strokes, 9 returns-to-theatre, and no deaths. The CAS cohort had 25% symptomatic patients, the overall major adverse event rate was 5%, including 1 perioperative stroke and no deaths. In the CEA cohort, the stroke/death rate was 2.1% vs 0.6% comparing those above 80 vs below 80 years of age. In the CAS cohort, there were no complications for those above 80 years vs a 1.5% stroke rate for those below 80 years. The overall stroke/death rates above and below 80 years were equal at 0.5% respectively. Carotid artery intervention is safe and efficacious in octogenarians when compared to younger patients. Age alone should no determine whether carotid artery interventions are offered. Instead, careful patient selection for carotid intervention should be performed.

10:18 am

Shockwave Lithotripsy for Severely Calcified BTK Vessels in CLTI Jessica Barklimore

Purpose: This study evaluates the safety and efficacy of intravascular lithotripsy (IVL) in the management of Critical Limb Threatening Ischaemia (CLTI), particularly in the presence of heavily calcified below-the-knee (BTK) lesions, where traditional revascularisation is often limited by vessel calibre and compliance. Methodology: A retrospective, single-centre analysis was performed on nine patients with CLTI treated with IVL between 2023 and 2025. All had severe arterial calcification involving the infra-popliteal segments. Primary outcomes included procedural success, as measured by luminal gain and improved vessel compliance on IVUS, as well as complications including rupture, embolisation and vessel occlusion. Secondary outcomes included changes in Rutherford classification and vessel patency on duplex ultrasound. Results: Results:

10:00 am - 10:30 am Morning Tea

Catering - Vascular - Hall L

05 October 2025

10:30 am - 12:30 pm VENOUS / THROMBOSIS

Scientific Session - Vascular - Hall M

10:30 am

<u>Pelvic Venous Disorders: SVP Classification, Evaluation, And Treatment - New Data Review Arne Schwindt</u>

10:45 am

Analysis of the First 450 STRIKE-PE Patients: Improved Right Ventricular/Left Ventricular Ratio and Functional Outcomes After Computer Assisted Vacuum Thrombectomy in Pulmonary Embolism Chris Delaney

## 10:55 am

## New classification system of venous malformation Iris Baumgartner

The 2025 update of the ISSVA classification of vascular malformations introduces an expanded and clinically oriented framework for the categorization of congenital vascular anomalies. Beyond the traditional subdivision into "slow-flow" and "fast-flow" malformations, the revised system integrates genetic, hemodynamic and clinical parameters. For the most common entity, simple venous malformations, whether isolated or multifocal, treatment planning requires particular attention to drainage patterns (Puig types I–IV) and to the recently refined phlebographic subtyping (phlebectatic vs. spongiform). These distinctions have immediate therapeutic implications: while type I–II VMs can generally be treated safely with sclerotherapy, types III–IV are associated with a higher risk of complications and therefore demand a more cautious approach. - Updated Classification of Vascular Anomalies. Journal of Vascular Anomalies June 2025, Volume 6, Number 2 - A proposal for a revision of the phlebographic classification of congenital venous malformations. Cardiovasc Diagn Ther 2024;14(2):283-293

#### 11:05 am

## <u>Computer-Assisted Protocol-Adherent Blood Lipid Evaluation in Vascular Outpatients (CAPABLE-Vascular)</u> Lewis Hains

Purpose Blood and serum testing form a vital part of vascular surgical practice. Deranged and elevated blood tests, such as cholesterol and blood sugar levels are established risk for many vascular pathologies, including stroke, myocardial infarction and peripheral vascular disease. Accordingly, ordering these blood tests is an essential component of the initial vascular outpatient consultation and in some cases, may delay timely intervention and risk factor modification. Methodology This study was conducted in the Northern and Central Adelaide Local Health Networks. Clinical programmers developed a rule-based computerised system that identifies patients scheduled to attend an outpatient vascular surgery appointment in the next 1-5 weeks and generates auto-completed Lipid and HbA1c pathology requests if the patients has not undergone testing in the prior six months. A four-week historical control period prior to implementation of the intervention was compared to a four-week post-intervention period. Results A total of 1165 patients were included, with a mean age of 68.4 years (SD: 15.0) and 35.9% of patients were female. During the preintervention period, 38.0% (246/647) of patients had HbAlc and 17.9% (116/647) had lipid studies in the preceding six months. Post-intervention the proportion of patients with HbA1c and lipid studies requested increased to 100% (518/518). It is estimated that in total 15% of patients had at least one test duplicated postintervention. Conclusion Our study demonstrates the feasibility of implementing a simple computerised pathology request protocol, which may help enhance outpatient efficiency and streamline routine pathology testing. Further studies examining the benefit on clinical endpoints in associated vascular pathology are required to truly demonstrate the effectiveness of this system. Similar protocols may be easily adapted to other specialty outpatient departments.

#### 11:15 am

Mechanical Thrombectomy with the Inari System as an alternative to catheter directed thrombolysis in subacute to chronic pulmonary embolus

Calyb Austin

Purpose: To evaluate the use of suction thrombectomy in patients with high and intermediate high-risk pulmonary embolism Methodology: A retrospective analysis of 13 patients undergoing Inari Thrombectomy for PE at a tertiary centre was conducted between 2023 and 2025. All patients followed a standardised antithrombotic regime and surveillance protocol. Primary outcomes include technical success, survival, and peri-procedural complications. Secondary outcomes include cardiac function and residual clot burden. Results: The average patient age was 62.1 years (54% female), 54% were classified as high risk, while 69% presented with a shock index >0.7; half of those were normotensive. 4 patients (31%) required Inari thrombectomy for subacute to chronic thrombus that did not respond to CDT with AngioJet. Two patients had active malignancy. Technical success was 100%. The mean procedure duration was 71 minutes (±18.1). 31% of patients did not require ICU admission; for the ones that did, 38% required inotropes, and one required positive pressure ventilation with a mean ICU stay of 1.8 days. III There were no procedural complications, no access or bleeding complications, and the mean EBL was 23 ml (0-200ml). Survival at 48 hours and 4 weeks was 100%. The median length of stay post-procedure was 4 days (range, 1-55 days). At 4week follow-up, CTPA demonstrated either complete resolution or minor residual thrombus in 83% of patients, with 77% of patients having returned to their pre-morbid exercise tolerance. Echocardiography at 48 hrs and 4 weeks demonstrated improved RV function with normal or mild pulmonary hypertension (mean RV systolic pressure 35.5 ± 8.5mmHg). All-cause mortality was 0% at a median follow-up of 6 months (1-12 months). [] [] Conclusion: Inari mechanical thrombectomy provides a safe, effective alternative to thrombolysis for intermediate- and high-risk PE with proven superiority in subacute and chronic thrombus. 11:25 am

Mechanical thrombectomy for treatment of iliofemoral and iliocaval deep venous thromboses – The Capital and Coast experience

Jun Cheul Park

11:35 am

A South-Australian Registry of Chronic Limb Threatening Ischaemia and Diabetes-Related Foot Disease. Jacqualyn Fyfe

Purpose: High rates of amputation and mortality are associated with diabetes-related foot disease (DRFD) and chronic limb-threatening ischemia (CLTI) worldwide. In Australia, DRFD alone contributes to an estimated 2500 deaths and 6300 lower limb amputations annually. Al methods offer powerful new approaches to multi-modal predictive modelling but require large and well-characterised datasets. We have created a registry of DRFD and CLTI patients in SA in order to enable epidemiological modelling, health services research, and the development of Al-powered predictive models to identify patients at high risk of amputation. Methods: Our statewide retrospective cohort study is being constructed using routinely collected de-identified clinical data comprising electronic medical records, medical imaging, and bespoke surgical datasets. The dataset includes patient demographics, comorbidities, wound characteristics, perfusion assessments, treatment details, and radiological imaging. Results: Our project will provide invaluable insights into the epidemiology of CLTI and DRFD in South Australia. By training AI models on a large and diverse dataset, the project will deliver tangible clinical benefits by developing robust predictive models applicable to a wide range of patients, able to identify key predictive factors of amputation risk and mortality. The registry will also establish a framework for translational medical AI research. Conclusion: By detailing project methodology, discussing the logistical challenges, and presenting epidemiological data on the historical cohort of patients with CLTI and DRFD in South Australia, the feasibility and benefits of this approach can be discussed, as well as the opportunity for further national expansion of the registry. Ultimately, this project aims to improve risk stratification, guide early interventions, reduce amputation rates, and optimise healthcare resources, thereby enhancing patient outcomes in DRFD and CLTI.

05 October 2025

12:30 pm - 1:30 pm Lunch

Catering - Vascular - Hall L

05 October 2025

12:45 pm - 1:15 pm

Cook Medical Lunchtime Symposium - Custom Made Aortic Stent Grafts: Planning for Success

Scientific Session - Vascular - Hall L Lounge

12:45 pm

<u>Custom Made Aortic Stent Grafts: Planning for Success</u> <u>Edward Travers</u>

1:05 pm

**Discussion** 

Scientific Session - Vascular - Hall M

1:30 pm Panel A

1:31 pm Stop Rocking the Boat Alexandra Sim

1:42 pm <u>A Sac of Misery</u> <u>Abhishekh Srinivas</u>

1:53 pm Bypass the Bypass Luke Smyth

2:04 pm Bloody Chest Pain Harsh Patel

2:15 pm Panel B

2:16 pm <u>A Good Bio</u> <u>Ben Raumer</u>

2:27 pm <u>Managing Two at Once</u> <u>Kreyen Ponen</u>

2:38 pm Open Mimics Endo Luke Smyth

2:49 pm <u>Hybrid Rescue</u> <u>Harsh Patel</u>