ISW26-353-01 (0879)

IMPROVING WALKING AFTER BELOW KNEE AMPUTATION THROUGH BETTER SURGERY

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Introduction:
Ambulation after BKA can be disappointing, often limited to flat surfaces and short distances (K2 function). To address this problem, a nuanced BKA (Ewing Amputation-EA) was implemented as a pilot study. EA reconstructs agonist/antagonist tendons to the tibia (greater limb control) and encases nerves with remnant muscle (neuroma prevention) and was developed for advanced prosthetic-use in active persons. We hypothesized that EA would improve ambulation in vascular patients.

Material and Method:
This was a prospective single arm pilot study of consecutive BKA patients at a single institution. Patients were excluded if they could not participate in rehabilitation or had end-stage renal disease. Patients were consented for the operation and underwent protocol testing for 12 months post-operatively. Operations were performed jointly with plastic surgery.

Results:
13 patients underwent EA. 3 of these were 2 stage operations whereby the EA followed an infection-control operation. 4/13 patients required operative revisions (3 for infection). 1 patient was revised to a standard BKA and used as a comparison to EA ambulation metrics. EA patients averaged 3417□2270 steps/day (BKA:155 steps/day), average peak cadence of 33□17 steps/minute (BKA:17□9 steps/minute), and achieved K4 status (BKA:K1), which is the highest level of functional mobility with a prosthetic. EA patients reported (VR36) improvements in physical function and general health ($P<.05$), in amputation single-item mobility measure (AMPSIMM) and prosthesis satisfaction ($P<.05$) compared to the 4 patients who underwent revisions.

Conclusion:
EA improves ambulation, self-assessment of physical/general health, and prosthesis satisfaction. Integrated vascular and plastic surgery teamwork minimized operative time, blood loss, and maximized followup data collection.

ISW26-353-02 (0362)

LONG-TERM OUTCOME AFTER ENDARTERECTOMY OF THE COMMON FEMORAL ARTERY USING DIFFERENT PATCH MATERIALS

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Introduction:
Common femoral artery (CFA) endarterectomy usually requires patch plasty using great saphenous vein (GSV) or occluded superficial femoral artery (SFA) .Alternatively xenografts like bovine pericardium patches may be implanted to reduce operating time as well as to prevent additional incisions and risk of impaired distal wound healing whilst preserving veins for future revascularization. Aim of the prospective study was to investigate the influence of the three different patch materials regarding wound complications and 5-year patency.

Material and Method:
All patients with isolated CFA endarterectomy performed in 2016 and 2017 were included. 5-year patency was assessed by ultrasound.

Results:
In 129 patients, lymphatic fistulas occurred in 5.4% (7/129), wound infection 4.7% (6/129), wound necrosis or dehiscence 10.9%, negative pressure wound dressing 1.6% (2/12). Significant correlations to wound complications were observed for gender (27.8% men vs. 9.4% women, p=0.03), and operated side (31.8% right vs. 14.3% left, p=0.02). The average operating times were 113.7 minutes for bovine pericardium, 120.4 minutes for venous and 116.7 minutes for SFA patches showing no statistical differences. Surgeries shorter than 120 minutes showed a significant lower complication rate (13.1%) than surgeries longer than 120 minutes (42.4%). At 5 year follow-up, ultrasound examination in 18 patients did not show any significant restenosis.

Conclusion:
No significant difference in wound complications or restenosis were observed. Further studies with a larger patient number are warranted to clarify the effect of patch materials in the groin on wound healing and patency.

ISW26-353-03 (0233)

A PROSPECTIVE STUDY OF PATIENTS WITH SUSPECTED ACUTE MESENTERIC ISCHEMIA

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Introduction:
The BIPAMI (Biomarkers in Prediction of Acute Mesenteric Ischaemia) is an ongoing multicentre international prospective study. This substudy on patients from one vascular centre aimed to evaluate admission clinical and laboratory parameters distinguishing confirmed acute mesenteric ischemia (AMI) from non-AMI.

Material and Method:
Prospective data were collected at Skåne University Hospital (October 2024-July 2025). Patients with suspected AMI at admission were included. Diagnosis was confirmed by computed tomography (CT), angiography, endoscopy, or intraoperatively.

Results:
Forty patients were included (23 with confirmed AMI; 17 with non-AMI). The 23 patients with AMI had superior mesenteric artery (SMA) thrombosis (n=8), SMA embolism (n=4), superior mesenteric vein thrombosis (n=3), acute SMA dissection (n=1), and non-occlusive mesenteric ischaemia (n=5). Endovascular intestinal revascularization and bowel resection were performed in 10 (43.5%) and 6 (26.1%) AMI patients, respectively. History of smoking (68.0% vs. 32.0%, p=0.083) and vomiting at admission (43.5% vs. 17.6%, p=0.085) were more frequent in the AMI group, whereas anaemia (39.1% vs. 58.8%, p=0.073) and bloody stools (8.7% vs. 29.4%, p<0.088) were more common in the non-AMI group; all non-significant. AMI patients had higher admission leukocyte count (15.6 ×10⁹/L versus 8.8, p = 0.004) and plasma lactate (3.35 mmol/L versus 1.90 mmol/L p=0.021). In-hospital mortality was 30.4% and 11.8%, respectively (p=0.256). In multivariable analysis, bloody stools (odds ratio [OR] 0.016, 95% confidence interval [CI] 0.0-0.76; p=0.036) and plasma lactate (OR 7.1 per standard deviation increment, 95% CI 1.16-43.9; p=0.034) remained independently associated with AMI.

Conclusion:
Confirmed AMI was associated with elevated plasma lactate and absence of macroscopic bloody stools.

ISW26-353-04 (0823)

WALAPONE TECHNIQUE OF ENDO-VENOUS THERMO-ABLATION (WEVTA) DELIVERS SIMILAR ENDO-VENOUS LINEAR ENERGY DENSITY (LEED) AND GIVE EQUAL RESULTS TO ENDO-VENOUS LASER ABLATION (EVLA)

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Introduction:
This new technique was developed as a resource efficient alternative to EVLA, which is the current standards of care in varicosities involving greater saphenous vein (GSV) due to Sapheno-Femoral incompetence (SFI). This was developed during the tenure of the principal investigator at Base Hospital Rikillagaskada which is in the historic general area of “Walapone” in the Northern slopes of the central hills of Ceylon (Sri Lanka). Thus, the name Walapone technique.

Material and Method:
The hot biopsy forceps used in upper GI endoscopy is introduced into the GSV just above the medial malleolus through a venous cut down. Under ultrasonic guidance the tip is advanced till 2cm to the SF junction. With the diathermy in SoftCoag 90 setting (which delivers 90 W non-deep penetrating thermal energy) the tip is withdrawn 1.5cm/sec speed. This delivers Linear Endo-venous Energy Density (LEED) of 60 Joules per cm, which is as same as EVLA (60-80 J/cm).

Results:
10 patients underwent WEVTA procedure. At three months post-WEVTA assessment all showed total occlusion of the ablated part of the GSV The hot biopsy forceps can be used many a times and is very much resource efficient when compared to using a laser system and laser fibers.

Conclusion:
WEVTA gives similar results to EVLA without the need of having to have a laser system and laser fibers. It is resource efficient and can be performed in any surgical department without additional logistics.

ISW26-353-05 (0696)

INTEGRATED VASCULAR AND SURGICAL APPROACH TO LIMB SALVAGE: MIDFOOT AMPUTATION PREVENTS BELOW-KNEE LOSS IN CRITICAL LIMB ISCHEMIA (4-YEAR FOLLOW-UP)

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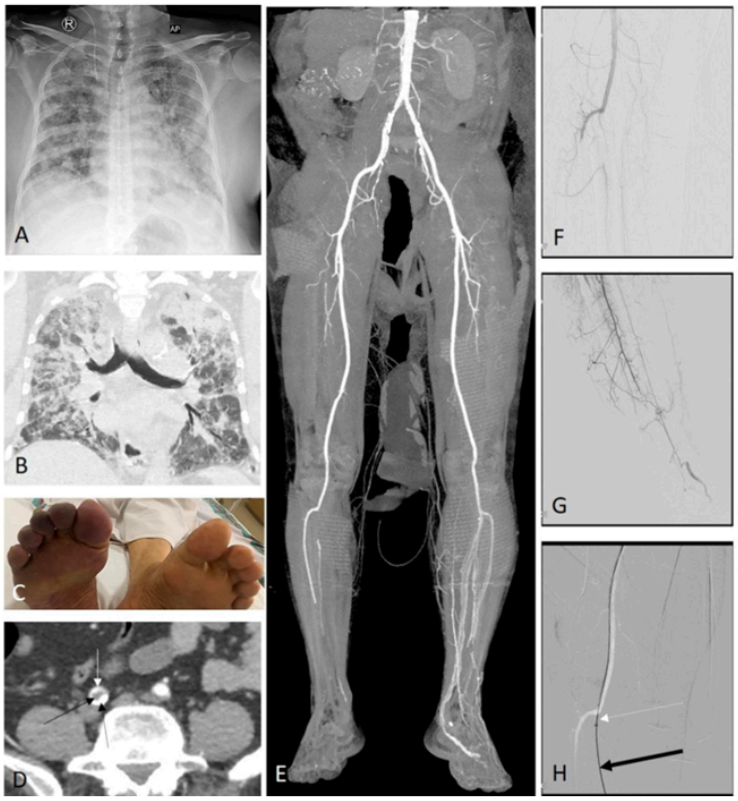
Introduction:
COVID-19–associated hypercoagulability increases the risk of arterial thrombosis, including acute lower limb ischemia (ALLI). In patients with severe pulmonary compromise, open revascularization may be unfeasible, requiring minimally invasive alternatives. This case illustrates successful limb salvage through endovascular intervention and multidisciplinary trauma care.

Material and Method:
A 75-year male with severe COVID-19 developed progressive ischemia of the right foot despite anticoagulation. Initially diagnosed as “COVID toes,” CT angiography revealed complete occlusion of the anterior tibial, posterior tibial, and peroneal arteries. Owing to significant respiratory compromise, endovascular thrombectomy and angioplasty were performed under local anaesthesia.

Results:
The three-hour procedure successfully recanalized major arteries, resulting in immediate pain relief and improved perfusion. However, distal gangrene progressed due to devascularization following non-recanalization of the arches, requiring a two-month conservative period until demarcation. A staged Lisfranc amputation was subsequently performed. Recovery was favourable, with full healing of surgical flaps and independent ambulation achieved by six months. At the four-year follow-up, the patient remains ambulatory without an orthosis or prosthesis and has healthy stump flaps.

Conclusion:
COVID-19-related arterial thrombosis poses management challenges due to high clot burden and possible heparin resistance. In this high-risk surgical candidate, endovascular intervention offered a safe and effective limb salvage strategy. A coordinated approach: combining anticoagulation, minimally invasive revascularization, staged Lisfranc amputation, and rehabilitation helped preserve limb function and enabled independent ambulation at 4 years, avoiding the functional and psychosocial burden of below-knee amputation.



(A) Frontal chest radiograph at admission showing extensive opacification of both lungs

(B) High- resolution CT (HRCT) scan of chest, coronal reformatted view, at admission, showing extensive ground glass opacification of nearly entire lung volume on either side with some areas of consolidation, ectasia of airways and thickening of the interlobular and intralobular septae

(C) Clinical photograph at initial reporting: discolouration of the toes of right foot

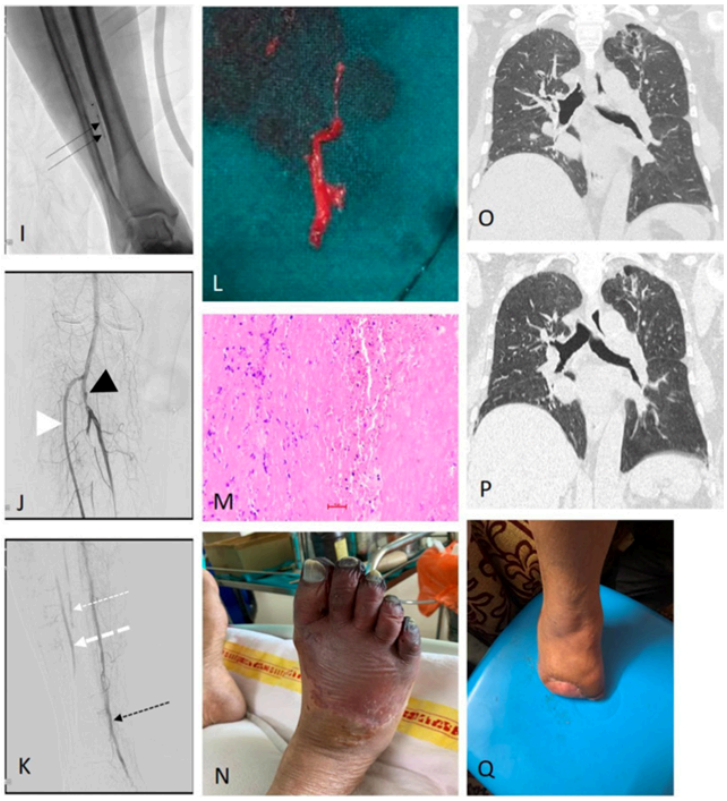
(D) Axial image of CT angiography(CTA) showing calcified plaque in the right common iliac artery (dashed black arrow) with hypodense thrombus in the lumen (solid black arrow). Minimal lumen opacification is seen anteriorly (solid white arrow)

(E) CTA of the lower limbs, maximum intensity projection image showing non-visualisation of the posterior tibial and distal half of the anterior tibial artery and partial opacification of the peroneal artery, possibly via collaterals.

(F) Digital subtraction angiography (DSA) image showing occlusion of the tibio-peroneal trunk (TPT) from origin, ATA occlusion has progressed further higher up, and some filling of peroneal artery via collaterals

(G) DSA image at leg level showing the filling of the mid part of the peroneal artery with occlusion distally, a long thin collateral is coming down and opacifying a small length of the posterior tibial artery around the ankle level

(H) Aspiration catheter lodged in the TPT (dashed white arrow), with a guidewire passed through it; (solid black arrow), multiple passes of the catheter were done in all three vessels



(I) Angioplasty balloon in the distal ATA (dashed black arrows); angioplasty of all three arteries was done at various levels

(J) Final DSA image at the knee showing opening of the TPT (black arrowhead) and the ATA (white arrowhead). (K) DSA image at leg level showing patent PTA in the entire length (dashed black arrow), peroneal (thick dashed white arrow), and ATA (thin dashed white arrow) are seen up to the distal leg

(L) A sample of the retrieved material, appearing bright white. (M) Histopathology section showing thrombus composed of fibrinous material, haemorrhage, and inflammatory cells (H&E stain, ×400 magnification)

(N) Progressively increasing discolouration and gangrene involve the midfoot.

(O) Coronal reformatted view of HRCT chest scan at 6 weeks of onset, showing significant resolution of the extensive ground glass opacification and consolidation, with some areas of hyperlucency; a diffuse background 'haze' persists.

(P) Coronal reformatted view of HRCT chest scan at 6 months of onset, showing near normal lung with some areas of opacities, possibly representing fibrosis, in the left upper zone.

(Q) Current status of foot, post amputation, and with a completely healed suture line.

ISW26-353-06 (0143)

ONE YEAR OUTCOMES OF PATIENTS SURGICALLY TREATED FOR ACUTE LOWER LIMB ISCHEMIA BEFORE AND DURING THE COVID-19 PANDEMIC – A RETROSPECTIVE COHORT STUDY IN A CHILEAN VASCULAR CENTER

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Introduction:
Acute lower limb ischemia (ALI) is a limb and life-threatening surgical emergency. The Coronavirus disease-19 (Covid-19) pandemic caused a significant strain on health care systems worldwide, resulting in high morbidity and mortality. This study aims to compare major outcomes in patients undergoing surgical treatment for ALI before and during the Covid-19 pandemic.

Material and Method:
Retrospective cohort study of patients (n=112) undergoing surgical treatment for ALI between January 1st, 2016, and May 5th, 2023, at a university hospital in Santiago, Chile. January 30th, 2020, marked the start of the Covid-19 pandemic group (n=53). Univariable logistic regression analysis was performed for 30-days and one-year mortality, major amputation, combined major amputation/mortality, with further multivariable analysis, adjusting for open vascular surgery. Fisher's exact test was used for subgroup analysis of patients treated during the pandemic before, compared to after, the introduction of vaccination program.

Results:
The major amputation rate at 30-days and one-year was 3.5% and 6.3% in the pre-pandemic group compared to 17.3% and 24.5% in the pandemic group. The odds of one-year major amputation were significantly higher for the pandemic group in univariable OR: 4.87 (95% CI: 1.27-18.54), but not in multivariable OR: 3.52 (95% CI: 0.88-14.05), analysis. During the Covid-19 pandemic, initiation of the vaccination program was associated with a decrease in one-year mortality from 29.4% to 2.8% (p=0.01).

Conclusion:
Undergoing surgical treatment during, compared to prior to, the Covid-19 pandemic was associated with increased odds of major amputation, but the association was attenuated in adjusted analysis.

ISW26-353-07 (0631)

IS THE 3% (6%) QUALITY THRESHOLDS FOR PERIOPERATIVE DEATH AND/OR STROKE RATE IN INTERNAL CAROTID ENDARTERECTOMY REALISTIC AND ATTAINABLE IN REAL WORLD DATA?

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Introduction:
ESVS guidlines claim a quality threshold for perioperative death and stroke of <3% in asymptomatic and <6% for symptomatic patients undergoing internal carotid endarterectomy. In recent years these thresholds were questioned and lowering was proposed. The goal of this investigation was to determine our 10-years perioperative death- and strokerate of patients undergoing carotid endarterectomy including data after discharge.

Material and Method:
All patients undergoing internal carotid endarterectomy from 1/1 2014 to 12/31 2023 were included. All cases with one or more of the following perioperative (30-days) events in all regional public hospital were detected: death, reoperation, stroke, imaging like computed tomography or magnetic resonance imaging. Perioperative death- and strokerates were calculated, with subgroup analysis for asymptomatic and symptomatic patients.

Results:
Exactly 2500 patients underwent internal carotid endarterectomy. Mean age was 71.3 years, 67.6% were male, 32.4% female, 76.6% asymptomatic, 23.4% symptomatic. Postoperatively 2.3% (45/1871) of the asymptomatic and 2.6% (15/569) of the symptomatic patients had to undergo reoperation for bleeding (79.3%) or technical complications (20.7%). There were 14 perioperative deaths, 0.5% (asymptomatic) and 0.7% (symptomatic) while strokerate was 1.7% (asysmptomatic) and 4.8% (symptomatic). Concluding as combined endpoint of 2.1% (asymptomatic) and 5.5% (symptomatic) perioperative stroke and death.

Conclusion:
Data from registries often lack information after discharge. A significant portion of events in our cohort occurred after discharge. Results with thorough follow-up of our high volume center showed results within the frame of ESVS recommendations. Therefore we believe the current quality thresholds to be very realistic, reflective of real world practice and should not be changed.

ISW26-353-08 (0952)

MAC INDEX AS A PREDICTIVE FACTOR OF MAJOR AMPUTATION IN PATIENTS UNDERGOING MINOR AMPUTATION SECONDARY TO DIABETIC FOOT

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Introduction:
Major lower-limb amputations represent a significant burden in patients with diabetic foot in Mexico. Minor amputations are frequently performed but often progress to major amputation. The Medial Arterial Calcification (MAC) score is a simple radiographic tool developed to quantify inframalleolar arterial calcification. This study aimed to evaluate its predictive value for adverse outcomes after minor amputation.

Material and Method:
A retrospective review was conducted on 122 limbs that underwent minor amputation. All patients received a foot radiograph and at least 4 months of follow-up. The MAC score was assessed using a 3-point scale: 0 = absent, 1 = moderate, 2 = severe. Clinical outcomes included recurrent wound care, further minor amputations, and progression to major amputation.

Results:
Overall, 25.4% of limbs were classified as group 0, 39.3% as group 1, and 35.2% as group 2. During follow-up, 42.6% required recurrent wound care (group 0: 15.3%, group 1: 36.5%, group 2: 48.0%). Additional minor amputation was needed in 22.9% (group 0: 10.7%, group 1: 28.5%, group 2: 60.7%). Major amputation occurred in 6.55% of cases, predominantly in group 2 (75%).

Conclusion:
Higher MAC scores were strongly associated with adverse outcomes, including repeated wound care, additional minor amputations, and major amputation. The MAC score is a reproducible, low-cost, and accessible tool for early risk stratification in patients with diabetic foot, with potential to guide closer follow-up and improve limb salvage.