BOFAS

FREE PAPERS
ABSTRACT SUMMARY

FREE PAPERS 1

Wednesday 26th November 2025 11.15 - 12.00

FP1

Vascular Considerations in Posterior Malleolus Fracture Surgery – The Prevalence of The Peroneal Artery Communicating Branch and Peroneal Artery Dominance

Chijioke Orji, Muhaned El-Gheryani, Kosha Gala, Craig Wyatt, Shahjahan Aslam, Zeeshan, Lyndon Mason
Liverpool University Hospitals Foundation Trust

FP2

Percutaneous Repair versus Non-Operative Management of Acute Achilles Tendon Rupture

Salman Sadiq, Natalie Grocott, Matthew Philpott, Ali Ashique
University Hospital North Midlands

FP3

Long-Term (14 Years) Outcomes of Operatively Treated Ankle Fractures in a Cohort of 330 Patients

Tina Ha, Kirsten Grant, Jane Madeley, Senthil Kumar
Glasgow Royal Infirmary

FP4

Influence of Surgical Approach in Trimalleolar Ankle Fractures on Fibular Fracture Reduction, Complication and Revision Rates

Neil Jones, Catherine Malik, Isabella Drummond, Amit Patel, Lucky Jeyaseelan
Royal London Hospital

FP5

Are there age and sex related differences in tibialis posterior activation during walking?

Catriona Heaver, Neil Postans, Jo Reeves, Thumri Paavana, Harry Poole, Darren Tinson, Caroline Stewart
RJAH Orthopaedic Hospital NHS Foundation Trust

FP6

Outcomes and Classification of Total Talus Replacements

Ciaran Nolan, Mark Davies, Howard Davies, Ian Sharpe, Andrew Goldberg, Adrian Kendal, Rick Brown
Sheffield Teaching Hospitals

Notes:

FREE PAPERS 2

Thursday 27th November 2025 16.00 - 17.15

FP7

Prosthetic Joint Infection in Total Ankle Replacement - The PRINTAR Study

Julia McGovern, Dave Townshend, Rebecca Martin, John Williams, Sarah Johnson-Lynn
Northumbria NHS Healthcare Trust

FP8

Predictive Model for AOS Response in Total Ankle Replacement: Doctor, Will My Symptoms Get Better After the Ankle Replacement?

Carlos Albarrán, Marianne Koolen, Tudor Trache, Sultan Alharbi, Andrea Veljkovic, Murray Penner, Alastair Younger, Kevin Wing
St. Paul's Hospital - Hospital Clínico

FP9

Proximal vs. Distal Gastrocnemius Recession: A Side-to-Side Comparison in Full-Body Cadaveric Specimens

Michael Michlin, Panagiotis Symeonidis, Leda Kovatsi, Trifon Totlis
Meir Medical Centre, Kfar Saba, Israel

FP10

Long-Term Outcomes of the HINTEGRA Total Ankle Replacement: A 10-Year Minimum Follow-Up Study

Martin Lim, Laura Clifton, Anji Kingman, Paul Rushton, Aradhyula Murty, Rajesh Kakwani, David Townshend, Jonathan Coorsh
Ashington

FP11

A comparison of prospective outcomes of INFINITY total ankle replacement versus ankle fusion

John Steyn, Alastair Younger, Hong Qion, Hubert Wong, Andrea Veljkovic, Kevin Wing, Murray Penne, Oliver Gagne

FP12

PROMS Behaviour and Survivorship of Total Ankle Replacement Revisions

Carlos Albarrán, Marianne Koolen, Sultan Alharbi, Tudor Trache, Andrea Veljkovic, Alastair Younger, Murray Penner, Kevin Wing
St. Paul's Hospital - Hospital Clínico Universidad de Chile

FP13

Adjacent Hindfoot Joint Preservation Versus Fusion in Patients with Ipsilateral Hindfoot and Ankle Arthritis (COFAS Type 4) Undergoing Total Ankle Replacement: A Prospective Comparison of Outcomes

Alastair Younger, Mohammad Arafah, Murray Penner, Timothy Daniels, Andrea Veljkovic, Kevin Wing, Joel Morash, Mark Glazebrook
University of British Columbia Vancouver BC

FREE PAPERS 3

Friday 28th November 2025 09.00 - 10.15

FP15

Is Elevated HBA1C Associated with Post-Operative Complications in Midfoot Charcot Reconstruction? Myth Or Reality?

Andrew Isaac, Christudoss, Bhargava Krishna Balineni, Madhu Tiruveedhula
Basildon

FP16

Clinical and functional outcomes of chronic calcaneal diabetic osteomyelitis treated with a partial calcanectomy with antibiotic-loaded calcium sulphate hydroxyapatite biocomposite application via the Silo technique

Justin Mooteeram, Nurarif Nurhashim, Anand Pillai, Ken Meng Tai, Abdul-Hadi, Kafagi
Wythenshawe

FP17

Open Versus Arthroscopic Ankle Fusion: A Long Term Prospective Comparative Multicentre Study.

Alastair Younger, Shuyuan Li, Murray Penner, Kevin Wing, Timothy Daniels, Mark Glazebrook, Oliver, Joel Morash
University of British Columbia Vancouver BC

FP18

Outcome Scores After Arthroscopic Ankle Fusion Reach a Steady State After One Year, But Revisions Occur Later - Prospective Analysis.

Alastair Younger, Marianne Koolen, Carlos Albarran, Kevin Wing, Murray Penner, Oliver Gagne, Andrea Veljkovic, Hooman Sadr
University of British Columbia Vancouver BC

FP19

The Calcaneal X/Y Ratio: True Morphology or an X-Ray Illusion? A Comparison of X-Ray and CT

Togay Koç Hesham Oshba, Imad Najm
Southampton Hospital

Notes:

FP20

20-year complication, revision, and re-operation rates following over 150,000 hallux valgus bunion operations in England

Michael Atife, Jonathan Munro, Conor Hennessy, Simon Abram, Rick Brown, Bob Sharp, Constantinos Loizou, Adrian Kendal
Nuffield Orthopaedic centre

FP21

Prospective, randomised controlled trial to evaluate the effect of weight bearing on patient outcomes following 1st MTP joint fusion.

Scott Purdie, Joel Morash, Bernard Burgesson, Mark Glazebrook
Aberdeen Royal Infirmary

FP22

A Cadaver Biomechanical Comparison of the Plate Construct for Open Lapidus Fusion versus Percutaneous Lapidus Fusion Using Subchondral Fixation

Alastair Younger, Stephen Steinlauf, Nathan Webb, Brian Thoren, Douglas Linton
University of British Columbia Vancouver BC

Notes:

BOFAS

FREE PAPERS

ABSTRACT DETAILED

FREE PAPERS SESSION 1

Wednesday 26th November 2025 11.15 - 12.00

FP1

Vascular Considerations in Posterior Malleolus Fracture Surgery – The Prevalence of The Peroneal Artery Communicating Branch and Peroneal Artery Dominance

Chijioke Orji, Muhaned El-Gheryani, Kosha Gala, Craig Wyatt, Shahjahan Aslam, Zeeshan, Lyndon Mason
Liverpool University Hospitals Foundation Trust

Introduction: The risk of vascular injury is a rare but significant concern in posterior malleolus fracture (PMF) surgery, especially with the commonly employed posterolateral approach. Anatomical variations of the peroneal artery have been blamed for serious vascular complications with the PL approach. This study aims to investigate the prevalence of peroneal artery communicating branch (PACB) and peroneal artery dominant (PAD) lower limbs, i.e. where the posterior tibial artery is either atretic or absent proximal to the origin of the PACB.

Methods: A historic cohort study was performed on 916 lower limb computed tomography angiographies (CTA). Patient data were stratified based on clinical indication for imaging, laterality, and the presence or absence of the communicating branch.

Results: A PACB was identified in 288 (31.4%) of the cases. The prevalence was significantly higher in patients with PVD (n = 226 (78.5%)) compared to those imaged for trauma (n = 18), free fibula graft assessment (n = 16), or other vascular concerns (n = 28). Notably, in cases where the PACB was present, 10% had an absent proximal posterior tibial artery, thus making the lower limb PAD through the PACB. The PACB occurs approximately 4cm proximal to the joint, posing a substantial risk of arterial compromise if the posterolateral approach is used.

Conclusion: Our findings reinforce the existing anatomical literature regarding the variability of peroneal artery branching and underscore the potential hazards of a posterolateral approach in PMF fixation. Inadvertent ligation of the communicating branch (PACB) may lead to ischaemic complications. Given the high prevalence of this variation, particularly in patients with PVD, the posterolateral approach should be approached with caution."

FP2

Percutaneous Repair versus Non-Operative Management of Acute Achilles Tendon Rupture

Salman Sadiq, Natalie Grocott, Matthew Philpott, Ali Ashique
University Hospital North Midlands

Introduction: The aim of this study was to assess any difference in patient reported outcomes between patients managed operatively with percutaneous repair versus non-operatively following an acute Achilles tendon rupture.

Method: This was a single-centre prospective cohort study over a 10-year period performed at University Hospital North Midlands. Patients were asked to fill an Achilles tendon Total Rupture Score (ATRS) at 3-month, 6-month and 12-month intervals post injury.

Patients were followed up for up to 12 months. Statistical significance was deemed if $p<0.05$.

Results: 181 patients were included who underwent percutaneous repair with an average age of 46.2 years (SD 12.8). In the non-operative group, 193 patients were included with an average age of 52.8 years (SD 14.3). At 12 months, 98 patients from the operative group (54%) and 103 patients from the non-operative group (53%) filled the ATRS questionnaire.

At 3-month and 6-month intervals, there was no statistically significant difference in ATRS scores ($p= 0.17$ and $p=0.70$ respectively). At 12 months, there was a statistically significant difference in ATRS scores ($p<0.001$) in favour of the operative group. When individual ATRS questions were analysed at 12 months, there was a statistically significant difference in favour of the operative group ($p<0.002$), especially in relation to intense physical activity. The improvement was seen in all age groups.

Four patients in the non-operative group sustained a DVT or PE and five patients had a re-rupture. In the operative group, one patient sustained a DVT, one patient was found to have a surgical site infection, and three patients had a re-rupture.

Conclusion: Patients undergoing percutaneous repair have improved ATRS scores at 12 months. Percutaneous repair is therefore a safe and valid management option, especially for highly active patients or heavy labourers. Those patients who do not require these attributes may benefit from non-operative intervention."

FP3

Long-Term (14 Years) Outcomes of Operatively Treated Ankle Fractures in a Cohort of 330 Patients

Tina Ha, Kirsten Grant, Jane Madeley, Senthil Kumar
Glasgow Royal Infirmary

Introduction: Although internal fixation surgery of displaced ankle fractures is amongst the most commonly performed operations, there is little published on long-term outcomes. The true incidence of posttraumatic osteoarthritis (PTOA) requiring further intervention is not well known. This study aims to establish the incidence of complications and long-term outcomes, specifically the development of arthritis. Furthermore, it aims to determine the effect of patient characteristics on these outcomes.

Method: All patients who underwent ankle fixation at Glasgow Royal Infirmary between January 2009 and December 2010 were retrospectively identified through our departmental database. Patient demographics, comorbidities and complications including infection, non-union, further surgery, and development of PTOA were recorded. Two proportion hypothesis testing was used to establish whether patient characteristics affected outcomes.

Results: 330 patients underwent ankle fixation surgery during the study period. There was a 1.2% and 1.5% incidence of superficial and deep infection respectively. Revision fixation surgery was necessary in 5/330 patients (1.5%), however 21.5% underwent further surgery including removal of metalwork. The latest clinical information showed 3.6% (12/330) developed PTOA and only 5 required surgeries including 3 ankle fusions. There was a statistically significant increase in the rate of delayed unions ($P=0.041$) in smokers. There was also a higher rate of deep infection, delayed union and revision surgery in diabetic patients and a higher rate of PTOA and requirement for surgical management of PTOA in overweight patients, although these did not reach statistical significance.

Conclusion: Our results show that internal fixation surgery for ankle fractures is associated with low incidences of both short-term complications and development of arthritis in the long-term. In our study, smokers had higher rates of delayed union but there was no significant correlation between patient characteristics and comorbidities on other outcomes."

FP4

Influence of Surgical Approach in Trimalleolar Ankle Fractures on Fibular Fracture Reduction, Complication and Revision Rates

Neil Jones, Catherine Malik, Isabella Drummond, Amit Patel, Lucky Jeyaseelan
Royal London Hospital

Introduction: Trimalleolar ankle fractures are complex injuries requiring surgical intervention to restore anatomical alignment and joint stability. The Mason and Molloy algorithm has advanced the use of the posterolateral approach, supplemented by a posteromedial approach in rotational and posterior pilon variants. While fixation of the posterior malleolus has received increasing attention, accurate fibular reduction remains a critical outcome determinant. This study evaluates complication and revision rates associated with different surgical approaches, with a focus on fibula reduction quality.

Methods: A retrospective review of prospectively collected data was performed across a major trauma centre and affiliated trauma unit from 2019 to 2024. Patients undergoing fixation of the posterior malleolus and fibula were included. Exclusion criteria were age >70, bilateral injuries, and open fractures. A total of 960 trimalleolar ankle fractures with minimum 6-month follow-up were analysed. Patients were divided into three groups, with 320 fractures in each, based on surgical approach and fibular fixation technique: (1) posterolateral approach with posterior fibula fixation through the same approach, (2) posterolateral approach with direct lateral fibula fixation through the same approach, and (3) posteromedial approach with lateral fibula fixation through a separate direct approach. Outcomes assessed included fibular reduction (Pettrone criteria), wound complications, revision surgery, and sural nerve injury.

Results: Lateral fibular fixation via a posterolateral approach showed a higher rate of lateral wound complications which was statistically significant. Posterior fibular fixation resulted in statistically significant higher malreduction rates. Revision rates were lowest in the posteromedial group which also had fewer sural nerve injuries.

Conclusion: The posteromedial approach with direct lateral fibular approach and fixation offers improved fibular reduction, with fewer wound complications and lower revision rates compared to posterolateral techniques."

FP5

Are there age and sex related differences in tibialis posterior activation during walking?

Catriona Heaver, Neil Postans, Jo Reeves, Thumri Paavana, Harry Poole, Darren Tinson, Caroline Stewart
RJAH Orthopaedic Hospital NHS Foundation Trust

Introduction: Tibialis posterior tendon dysfunction (TPTD) often leads to acquired flat foot deformity [1]. There is also a tendency for arch height to decrease with age [2]. However, it is unknown whether this change is linked to altered tibialis posterior (TP) activation during gait or is associated with healthy ageing.

Research question: Are there differences in TP activation during walking between healthy younger and older adults?

Method: 30 subjects equally divided between 2 age groups younger (under 35; n=15, 8F, mean age 28.7y SD 4.4) and older (over 55; n=15, 7F, mean age 58.9y SD 3.3) were recruited. Fine-wire electromyography (EMG) electrodes were inserted into TP under ultrasound guidance. Subjects performed 3 maximal voluntary contractions (MVC) of ankle inversion against resistance, with the applied force measured using a transducer. Subjects performed 6 walks at self-selected speed along a 10m walkway. The highest EMG recorded during the MVCs was used to normalise the walking EMG. Differences in EMG between cohorts grouped by age and sex were determined using statistical parametric mapping (SPM). Force data was compared using ANOVA.

Results: There were no significant differences in EMG between cohorts based on age or sex. This suggests that TPTD may not be a pathological response to a natural process of age-related changes in activation. Activation may not account for the higher incidence in women. There was some variation between subjects in normalised EMG amplitudes and further longitudinal studies would be required to link different patterns to future changes in foot posture. There were significant differences in MVC maximum force between males and females, but no difference between age cohorts.

Conclusion: TP activation during walking does not appear to deteriorate with age or vary between sexes. Further studies will include subjects with TPTD. We have not demonstrated a need for age and sex matched control cohorts in future studies.

References

[1] Ross, et al. 2017 PLOS One, 12
[2] Menz, HB 2015 Gerontology, 61, 381-388”

FP6

Outcomes and Classification of Total Talus Replacements

Ciaran Nolan, Mark Davies, Howard Davies, Ian Sharpe, Andrew Goldberg, Adrian Kendal, Rick Brown
Sheffield Teaching Hospitals

Introduction: Total talus replacement (TTR) is an innovative technology with increasing availability. The outcomes, expected function, surgical challenges and complications need to be described. Standardising the terminology describing the implants and their degree of constraint is necessary to compare outcomes in future research on the topic.

Methods: Prospectively collected PROMS including MOXFQ, VAS, EQ-5D and the Tegner activity score have been analysed from 29 TTRs from four centres in the UK. The effects of physical and psychological comorbidities, underlying disease and the component design were studied.

Results: There were 29 total talus replacement implants, of which 8 were combined with a total ankle replacement (TATTR). Of the 21 TTR, 15 were fully articulating and 6 were constrained by intended bone-metal incorporation at one or more joint surfaces. After mean follow up of 21 months (minimum 6 months), the overall MOXFQ improved from 80.8% (CI 14 75.1-86.4) to 41% (C.I 30.4-51.6, p<0.0001). The mean VAS increased from 44.7 (CI 15 33.2-56.1) to 76.2 (C.I 69.7-82.7, p<0001). The Tegner activity level score increased by 2.5, while the mean EQ5D was shown to have significantly improved (p<0001). Three patients with a fully articulating TTR (11%) have undergone a re-operation, and an additional patient has a revision procedure planned.

Conclusion: In challenging cases with destruction of the talus, a total talus replacement provides an option to relive pain, while improving both function and activity. When clinically required, constraining a joint surface with a bone-metal incorporation, produces clinical outcomes as good as those after a fully articulating total talus replacement. Standardising the terminology used to describe these novel implants will help surveillance in a national registry as well as future research to compare outcomes and the recognised complications.

Level of evidence: IV

FREE PAPERS SESSION 2

Thursday 27th November 2025 16.00 - 17.15

FP7

Prosthetic Joint Infection in Total Ankle Replacement - The PRINTAR Study

Julia McGovern, Dave Townshend, Rebecca Martin, John Williams, Sarah Johnson-Lynn
Northumbria NHS Healthcare Trust

Introduction: Prosthetic joint infection (PJI) following total ankle replacement (TAR) is a rare but complex complication. Unlike hip and knee arthroplasty, limited data exist to guide ankle PJI management, particularly regarding microbiology and surgical outcomes.

To evaluate the incidence, microbiology, surgical management, and outcomes of TAR PJI in the UK over a 10-year period.

Method: A retrospective service evaluation was conducted across 18 UK centres, capturing 58 PJIs diagnosed between January 2014 and January 2024. Data included infection timing, pathogen profiles, surgical approach, and infection resolution. Diagnostic classification followed IDSA, MSIS, and EBJIS criteria.

Results: Most infections were late (>4 weeks, n=54); only 4 were early (<4 weeks). Staphylococcus (n=13) and Enterobacter (n=8) were most common. Gram-negative organisms accounted for 15/58 cases—higher than typically seen in hip/knee PJI. Twenty-two patients underwent DAIR. Infection free survival at one year was 75% in DAIR for early infection. Outcomes appeared unaffected by organism type. Two-stage revision (n=32) achieved a 91% infection-free rate, comprising 17 revisions to fusion and 15 to arthroplasty. Only four single-stage procedures were performed but all were successful. MDT involvement increased over time and was associated with better outcomes. Overall, 54/58 patients were infection-free at final follow-up; 12 required further surgery, and one patient died.

Conclusion: This UK series highlights the distinct microbiological profile of TAR PJI, with a notable gram-negative burden. Infection clearance was encouraging across various surgical strategies. Increased MDT input over time aligns with improved outcomes and should be routine. Larger studies are needed to define optimal treatment pathways.”

FP8

Predictive Model for AOS Response in Total Ankle Replacement: Doctor, Will My Symptoms Get Better After the Ankle Replacement?

Carlos Albarrán, Marianne Koolen, Tudor Trache, Sultan Alharbi, Andrea Veljkovic, Murray Penner, Alastair Younger, Kevin Wing
St. Paul’s Hospital - Hospital Clínico

Introduction: Ankle osteoarthritis (AO) is a condition which generates a level of disability comparable to that of heart failure and chronic kidney failure. To date, no predictive model has been described to determine which patients will experience a more pronounced improvement in disability following total ankle replacement.

Method: A prospective registry (2003 – 2023) was screened for primary TARs; revisions and patients who declined participation were excluded. “Good response” was defined as ≥ 28-point improvement in the Ankle Osteoarthritis Scale (AOS) at 1–2 years. Stepwise multivariable logistic regression assessed demographics (age, smoking, diabetes, inflammatory disease, BMI), OA aetiology, implant type (Infinity, InBone, InVision, Agility, Hintegra, Mobility, Zimmer, STAR) and baseline AOS. Models were compared with Akaike’s Information Criterion; over-fitting was checked with 1000-bootstrap resampling and calibration with the Hosmer–Lemeshow test.

Results: Six-hundred-thirty-one primary TARs (mean age 64.9 ± 9.7 yr) met inclusion criteria; the most common implants were Hintegra (159), Infinity (151), Zimmer (127) and Agility (78). The final, parsimonious model retained two independent predictors: higher baseline AOS (OR 1.07 per point, 95 % CI 1.05–1.08; p < 0.01) and ankle instability aetiology (OR 4.69, 95 % CI 1.50–14.71; p < 0.01). Discrimination was acceptable (AUC 0.76); bootstrap validation showed no loss of performance, and the Hosmer–Lemeshow test confirmed good fit.

Conclusion: Greater pre-operative disability and an instability-related aetiology markedly increase the likelihood of achieving a clinically important improvement after TAR. This internally validated, two-variable model is easy to implement in clinic and can refine patient selection, set realistic expectations, and support shared decision-making. External validation in other centres is warranted.”

FP9

Proximal vs. Distal Gastrocnemius Recession: A Side-to-Side Comparison in Full-Body Cadaveric Specimens

Michael Michlin, Panagiotis Symeonidis, Leda Kovatsi, Trifon Totlis
Meir Medical Centre, Kfar Saba, Israel

Introduction: Gastrocnemius tightness contributes to various foot and ankle pathologies. While both Proximal Medial Gastrocnemius Release (PMGR) and the Strayer procedure are widely used, comparative data on their biomechanical effects are limited, particularly within the same specimen. This study aimed to compare dorsiflexion improvement between PMGR and Strayer procedures using a side-to-side cadaveric model.

Method: A total of 15 fresh-frozen full-body cadaver specimens were included after screening 17 for eligibility. Each specimen underwent a randomized side-to-side comparison: one leg received PMGR and the other the Strayer procedure. Passive ankle dorsiflexion was measured before and after intervention using a standardized 10 kg applied force and electronic goniometer. Relative change in dorsiflexion was also calculated. All procedures were performed by a single orthopaedic surgeon; measurements were performed by a blinded observer.

Results: Baseline dorsiflexion was similar between limbs (PMGR: median -18.5°; Strayer: -19.0°, p=0.776). Postoperatively, the Strayer procedure resulted in significantly greater dorsiflexion (median -3.4° vs. -9.0°, p<0.001). Absolute dorsiflexion gain was higher in the Strayer group (median 14.7° vs. 8.0°, p=0.001), as was relative improvement (14.9% vs. 7.4%, p<0.001). No correlation was found between improvement and age, sex, or BMI.

Conclusion: Distal gastrocnemius recession (Strayer) resulted in significantly greater dorsiflexion gain compared to proximal release (PMGR) within the same specimen. While more distal procedures may yield superior biomechanical correction, clinical decision-making should also consider potential risks such as sural nerve injury and soleus involvement."

FP10

Long-Term Outcomes of the HINTEGRA Total Ankle Replacement: A 10-Year Minimum Follow-Up Study

Martin Lim, Laura Clifton, Anji Kingman, Paul Rushton, Aradhyula Murty, Rajesh Kakwani, David Townshend, Jonathan Coorsh
Ashington

Introduction: The HINTEGRA is a third-generation, mobile-bearing total ankle replacement (TAR) that has been popular in the UK. We present the long-term outcomes with a minimum of follow-up period of 10-years.

Method: In this prospective single-centre cohort study, all HINTEGRA TARs performed between 2010–2014 were analysed. Demographics, complications (Glazebrook classification), reoperations and revisions (COFAS classification), and patient-reported outcome measures (PROMS) were collected. Survivorship was assessed using Kaplan-Meier analysis.

A total of 69 patients (70 ankles) were included. Mean age was 69 years (48-84 years). 21 patients died (30%) and 8 patients were lost to follow-up.

Results: Implant survivorship was 81.7% at 5 years (mean 6.4 years), and 71.7% at 10 years (mean 12.3 years, 10.1-14.3 years). Complications included low (12.9%), medium (2.8%), and high-grade events (18.6%), with aseptic loosening being the most common serious complication (12.9%).

Revision surgery was performed in 16 ankles (22.9%). Non-revision procedures were carried out in 9 patients (12.9%) with majority being cyst debridement and grafting (n=6, 8.6%).

Periprosthetic cysts were identified in 36 patients (51.4%), most were asymptomatic and located in the tibia. Average volumes measured on CT scan for tibial, talar and fibular cysts were 1.5 cm^3, 1.9 cm^3, and 1.1 cm^3 respectively. Indication of grafting of cysts were symptomatic ankles with stable implants, and/or >50% weight-bearing surface and/or expanding in size. (n=6). Graft incorporation was variable, irrespective of impaction autograft or synthetic graft. Loose implants with cysts prompted revision arthroplasty (n=7) and tibiotalar joint fusion (n=1).

Conclusion: The 10-year survivorship of the HINTEGRA TAR was 71.7%. We identified high rates of periprosthetic cysts and would recommend a low threshold for radiographic surveillance.

Disclosures: The authors declare no competing interests relating to this study. DT, RK, AM are paid consultants for Stryker and Exactech."

FP11

A comparison of prospective outcomes of INFINITY total ankle replacement versus ankle fusion

John Steyn, Alastair Younger, Hong Qion, Hubert Wong, Andrea Veljkovic, Kevin Wing, Murray Penne, Oliver Gagne

Introduction: Ankle fusion (AF) or Total ankle arthroplasty (TAA) can be used to treat end stage ankle arthritis (ESAA). TAA has become more reliable in modern generations with patient specific instrumentation, improvement in polyethylene and ingrowth surfaces. The INFINITY® Total Ankle System (Stryker Inc.) is a 2-component fixed-bearing, bone-sparing modern design introduced in 2014. The purpose of this study is to compare prospective outcomes of Infinity ankles (outcome scores and revision rates) with ankle fusion.

Method: 100 patients with prospectively collected data having an INFINITY® TAA between 2013- August 1st, 2021, were compared with 200 ankle fusion patients from 2008 -August 1st, 2021 with a minimum 1 year follow up. The primary outcome was the Ankle Osteoarthritis Scale (AOS). Secondary outcomes were the MODEMS, and SF-36 scores. The average was 5.1 years, and the follow up was 5.9 years for AF and 3.4 years for TAA.

Results: Ankle Fusion AOS scores improved from a preoperative average of 55.25±19.31, to 26.01±21.64. TAA scores improved from 52.37±19.09 to 22.33±21.41 for TAA. At the last follow up after surgery (LFU), mean AOS scores in the Infinity cohort were significantly lower after linear regression for baseline variables with a mean difference of -6.76 (-12.52, -0.99 95% CI) p-value 0.02. The difference remained significant after removing 1-year follow up, and 9-14 year follow up, at -6.58 (-12.89, -0.27 95% CI), p-value 0.041. The revision rate for ankle fusion was 3.5%, while revision rate for INFINITY® TAA was 2%.

Conclusion: Patients undergoing INFINITY® TAA had significantly lower mean AOS scores than patients undergoing ankle fusion at their last follow up after surgery, both before and after linear regression for baseline variables. This remained significant after excluding earlier (1-year) follow up, and later (9-14 year) follow up for the fusion cohort data. Modern ankle replacement designs continue to improve compared against the ankle fusion gold standard."

FP12

PROMS Behaviour and Survivorship of Total Ankle Replacement Revisions

Marianne Koolen, Sultan Alharbi, Tudor Trache, Andrea Veljkovic, Alastair Younger, Murray Penner, Kevin Wing
St. Paul's Hospital - Hospital Clínico Universidad de Chile

Introduction: Rising numbers of primary total ankle replacements (TARs) inevitably lead to more revisions, yet the evolution of patient-reported outcome measures (PROMs) and implant longevity after TAR-to-TAR exchange is poorly defined.

Method: All metallic-component revisions registered prospectively between 2003 and 2023 were reviewed; amputations and arthrodesis were excluded. Demographics and PROMs—SF-36 Physical (SF-36PC), SF-36 Mental (SF-36MC) and Ankle Osteoarthritis Scale (AOS)—were compared with unrevised TARs using non-parametric statistics. PROM trajectories were assessed at baseline, immediately before revision, and 1–2 years post-revision. Survivorship was calculated with Kaplan–Meier analysis.

Results: Among 631 primary TARs, 48 revisions (7.6 %) occurred and 43 received a TAR-to-TAR exchange. Revised patients were younger than unrevised counterparts (61.6 ± 8.2 vs 65.2 ± 9.8 years; $p < 0.01$). At baseline they showed higher SF-36PC (66.4) and SF-36MC (46.7) but worse AOS (78.5) than unrevised cases (all $p < 0.01$). Between baseline and pre-revision, SF-36 scores declined while AOS improved. Two years after revision, AOS had improved further to 35.9 but remained inferior to unrevised TARs (16.1; $p < 0.01$); SF-36PC and SF-36MC were 32.1 and 50.1, still below pre-revision values. Ten-year survivorship of revised implants was 58.9 %, and 51.1 % required a second revision by year 13.

Conclusion: TAR-to-TAR revision reliably relieves pain and improves function, yet physical and mental health scores do not return to the levels achieved by well-functioning primary implants, and durability is modest. Functional recovery remains suboptimal, and patients continue to experience limitations even after revision."

FP13

Adjacent Hindfoot Joint Preservation Versus Fusion in Patients with Ipsilateral Hindfoot and Ankle Arthritis (COFAS Type 4) Undergoing Total Ankle Replacement: A Prospective Comparison of Outcomes

Alastair Younger, Mohammad Arafah, Murray Penner, Timothy Daniels, Andrea Veljkovic, Kevin Wing, Joel Morash, Mark Glazebrook
University of British Columbia Vancouver BC

Introduction: Adjacent joint arthritis poses a dilemma in end stage ankle arthritis. The purpose of this study was to compare the outcomes of patients undergoing total ankle arthroplasty with or without surrounding joint fusion in COFAS type 4 cases.

Method: Prospectively collected data was retrospectively reviewed on 148 ankles with type 4 COFAS arthritis undergoing total ankle arthroplasty by 7 different surgeons in three centres and analysed changes of their AOS and SF36 PCS scores post operatively. Patients with surrounding joint preservation (59 ankles) were compared to those with total ankle and surrounding joint fusion (89 ankles). Multivariant analyses was performed for potential demographic differences within the patient cohorts. Outcomes were measured using SF 36 physical component, and AOS pain and difficulty scores. Preoperative scores were compared with the most recent outcome score. Revision surgery data was collected and classified.

Results: At an average of 5 years follow up both groups exhibit equivalent post operative pain and functional improvement. The average AOS in patient who had surrounding joint preservation improved from 57.47 to 24.52. Those with surrounding joint fusion improved from 55.86 to 23.67. SF36 PCS scores improved from 33.87 to 40.02 for preservation, and 38.86 to 42.27 for fusions. There was no significant difference in the preoperative score or demographics of both groups, no difference in postoperative score, and no difference in the change of score. Both groups were able to achieve their peak scores across all measurement scales at the 2-year post operative mark. Results from multivariant analyses showed no difference in patients' AOS scores between the two different surgical cohorts. Both surgical cohorts had similar rates of revisions.

Conclusion: In combined arthritis of the hindfoot (COFAS type 4) preserving the hindfoot joints with TAA yields comparative results to TAA and hindfoot fusion. The authors recommend surrounding joint preservation and fusion later on the rare occasion as needed."

FREE PAPERS SESSION 3

Friday 28th November 2025 09.00 - 10.15

FP15

Is Elevated HBA1C Associated with Post-Operative Complications in Midfoot Charcot Reconstruction? Myth Or Reality?

Andrew Isaac, Christudoss, Bhargava Krishna Balineni, Madhu Tiruveedhula
Basildon

Introduction: Guidance from the Royal College of Anaesthetists suggests that patients with poorly controlled diabetes are at increased risk of peri-operative complications, wound related issues, and prolonged hospital stays. Nevertheless, surgery remains recommended in urgent and semi-urgent cases. This study aimed to compare post-operative outcomes in patients undergoing Midfoot Charcot reconstruction, stratified by pre-operative HbA1c levels.

Method: Following local governance approval, we retrospectively reviewed patients who underwent midfoot Charcot reconstruction between January 2018 and December 2024. Patients were grouped based on pre-operative HbA1c: Group A (<69 mmol/mol) and Group B (≥69 mmol/mol). Procedures included urgent first-stage debridement, elective second-stage reconstruction or single-stage reconstruction. All patients were treated using standardised protocols involving deep tissue sampling, local antibiotic-eluting agents (Cerament G), and a short course of systemic antibiotics. Post-operative complications and outcomes were compared.

Results: A total of 105 patients were analysed: 82 in Group A and 23 in Group B. Both groups were similar in age and BMI. The median HbA1c was 50.5 mmol/mol in Group A (range: 30–69) and 79 mmol/mol in Group B (range: 70–129). Post-operative complications occurred in 11 patients (13.4%) in Group A and 3 patients (13%) in Group B. Infections occurred in five patients in Group A, with three requiring returns to theatre. In Group B, three patients developed wound infections, but none required re-operation. One patient in Group A required major amputation; none in Group B did. Fourteen patients died during follow-up (10 in Group A, 3 in Group B), all beyond 30 days post-operatively and the cause was unrelated to surgery.

Conclusion: There was no significant difference in post-operative morbidity, mortality, or complication rates between the groups. Elevated HbA1c should not be viewed as a contraindication to surgery in patients with complex diabetic foot pathology."

FP16

Clinical and functional outcomes of chronic calcaneal diabetic osteomyelitis treated with a partial calcanectomy with antibiotic-loaded calcium sulphate hydroxyapatite biocomposite application via the Silo technique

Justin Mooteeram, Nurarif Nurhashim, Anand Pillai, Ken Meng Tai, Abdul-Hadi, Kafagi
Wythenshawe

Introduction: Partial calcanectomy is an established alternative to amputation in diabetic calcaneal osteomyelitis, with recent studies utilising adjuvant local antibiotic delivery devices to improve outcomes. The Silo technique is a novel approach involving an antibiotic-loaded hydroxyapatite calcium sulphate bioceramic (Cerament G or V) implanted into pre-drilled holes in the calcaneum.

Method: This retrospective case series involved 30 patients with chronic diabetic calcaneal osteomyelitis that underwent partial calcanectomy with Cerament G or V application via the Silo technique between 2014 and 2024. Patients were also followed up on their mobility via telephone consultation. Primary outcomes were infection eradication, ulcer healing, limb salvage, patient mortality and ambulatory status.

Results: Infection eradication was achieved in 29 (97%) patients, ulcer healing in 27 (90%), ulcer recurrence in 8 (26.7%), and limb salvage in 28 (93.3%). The all-cause mortality rate was 6.7% at 1-year and 43.3% at 5-years. From baseline, 6 (20.0%) patients improved their mobility status, 20 (66.7%) maintained their mobility status, and 4 (13.3%) deteriorated in mobility status.

Conclusion: This is the second study to report on outcomes of the Silo technique and has demonstrated good clinical outcomes in infection eradication, ulcer healing, ulcer recurrence, limb salvage, 1-year mortality, and mobility. However, there was a high 5-year all-cause mortality rate. Further studies are warranted to assess the efficacy and factors affecting outcomes."

FP17

Open Versus Arthroscopic Ankle Fusion: A Long Term Prospective Comparative Multicentre Study.

Alastair Younger, Shuyuan Li, Murray Penner, Kevin Wing, Timothy Daniels, Mark Glazebrook, Oliver, Joel Morash
University of British Columbia Vancouver BC

Introduction: This multi-centre study aimed to compare complication rates, reoperation rates, and patient-reported outcome measures (PROMs) between open ankle arthrodesis (OAA) and arthroscopic ankle arthrodesis (AAA) in treating end-stage ankle arthritis.

Method: Prospectively collected data from three medical centres in the (blinded) database in a retrospective study. Patients who underwent primary ankle arthrodesis for the treatment of end-stage arthritis with a minimum of 2 years follow up and valid patient-reported outcome measures (PROMs) scores were included. Preoperative COFAS ankle arthritis type, validated PROMs including the Ankle Osteoarthritis Scale (AOS), Short Form-36 (SF-36) with 2 components (the Physical Component Summary (PCS) and Mental Component Summary (MCS)), as well as major complications including malunion, non-union, infection, amputations, and reoperations related to the arthrodesis were evaluated using CROCS (Canadian Reoperation Coding System).

Results: 447 primary ankle arthrodeses were included (178 AAA, 269 OAA) with 1-15 years of follow up (average 7.13 yrs +/- 3.8). There was no difference between the two groups with respect to demographics except there were more cases of type-1 and type-4 COFAS arthritis in the OAA group, and a higher BMI in the open group.

There was a 6.9% (31 cases) incidence of major complications including 3.79% (17) related operations around the ankle, 0.67% (3) deep infection, 1.78% (8) revisions due to non-union or malunion, and 0.67% (3) amputations.

The arthroscopic ankle arthrodesis cohort had a better outcome score at 2 years (AOS score 22.9 +/- 19.3 vs 29.3 +/- 29.3 +/- 20.7) and 4 years (23.3 +/- 19.5 vs 34.3 +/- 22.4). From 5 to 15 years there was no difference.

Conclusion: This study shows better outcomes for the arthroscopic cohort. However, differences may be less after correction for confounding factors such as surgeon, site, and COFAS grade. Revision surgery is rare in both groups."

FP18

Outcome Scores After Arthroscopic Ankle Fusion Reach a Steady State After One Year, But Revisions Occur Later - Prospective Analysis.

Alastair Younger, Marianne Koolen, Carlos Albarran, Kevin Wing, Murray Penner, Oliver Gagne, Andrea Veljkovic, Hooman Sadr
University of British Columbia Vancouver BC

Introduction: Outcome studies need to follow patients until a point at which the outcome is stable in either retrospective or prospective studies. The longer the time period of follow up the more likely patients will be lost to follow up. Revisions of the primary procedure may take months to years to occur. The purpose of this paper is to determine when scores stabilize after arthroscopic ankle fusion, and the distribution of time to revision.

Method: Patients undergoing arthroscopic ankle fusion at one institution performed by four fellowship trained Orthopaedic surgeons were recruited and prospectively followed. Annual outcome scores were obtained. This included AOS, expectation, satisfaction, and SF 36 scores. Statistical analysis was performed to determine when each outcome score achieved a steady state.

Results: 190 Arthroscopic ankle fusions were followed annually for an average of 7.2 years (range 1 to 15 years). The age at surgery was 58 +/-12 years, BMI 28.9 +/- 5.5, 66% male, 11% diabetes, and 6% smokers. There were 103 COFAS type 1, 41 type 2, 15 type 3 and 31 type 4. 5 revision fusions were performed, and 29 reoperations performed (most for hardware removal). The AOS score improved after surgery at 6 months and 1 year and was stable thereafter. The SF 36 PCS score stabilized by 6 months. The expectation score stabilized at 6 months, The satisfaction score, stiffness score and swelling score all at 1 year. Revisions on the other hand occur at an average of 2.5 years +/- 2.8 years.

Conclusion: Prospective or retrospective data for outcomes for arthroscopic ankle arthrodesis only needs to be followed until 1 year. A similar result has been obtained for ankle replacement. However, if revisions are to be followed then longer term follow up is required."

FP19

The Calcaneal X/Y Ratio: True Morphology or an X-Ray Illusion? A Comparison of X-Ray and CT

Togay Koç Hesham Oshba, Imad Najm
Southampton Hospital

Introduction: Tourne et al. described the calcaneal X/Y ratio on weightbearing radiographs to assess ""overlong"" calcanei in Haglund's syndrome, suggesting a ratio <2.5 predisposes to heel pain and supports the use of Zadek osteotomy. However, other series report good outcomes with Zadek osteotomy regardless of X/Y ratio.

Aim: To evaluate the accuracy of the XY ratio measurement on the plain radiographs reflecting the morphology of the calcaneum. This was achieved by comparing the XY ratio on X-rays and CT scans.

Method: 50 patients with Hindfoot CTs and Weightbearing X-rays, regardless of heel pain presence were selected. Two assessors (One resident & one fellow) were trained by a specialist Musculoskeletal Radiologist and Fellowship trained orthopaedic foot & ankle surgeon to measure the X/Y ratio on both plain radiographs and the sagittal cut of the CT scans. The reliability and correlation between the X/Y ratio measured on X-ray and CT as well as Inter-observer agreements between these measurements were calculated.

Results: The mean X/Y ratio measured by both assessors was lower on X-ray (2.71±0.43, 2.69±0.41) than on CT (3.14±0.44, 3.10±0.44).

X/Y ratio measured on X-ray and CT were poorly correlated for both reviewers (observer one ICC (95%CI) =.487 (-.099, .784) P< .001, observer two ICC (95%CI) =.476 (-.076, .734) P< .001)

Good Inter-observer reliability of the X/Y ratio measured on X-ray (ICC (95%CI) =.808 (.662, .891) P< .001) and excellent when measured on CT (ICC (95%CI) =.956 (.992, .975) P<.001) was found.

Conclusion: According to the findings of this study, the X/Y ratio measured on standing lateral Radiographs does not correlate to Calcaneal morphological length measured on CT. The published association between Haglund's Syndrome and an X/Y ratio < 2.5 is likely due to factors other than true calcaneal length such as calcaneal alignment."

FP20

20-year complication, revision, and re-operation rates following over 150,000 hallux valgus bunion operations in England

Michael Atife, Jonathan Munro, Conor Hennessy, Simon Abram, Rick Brown, Bob Sharp, Constantinos Loizou, Adrian Kendal
Nuffield Orthopaedic centre

Introduction: Hallux valgus surgery is common, with variable recurrence rates of 4 – 78% reported in multiple case series. Any further surgery for forefoot pathology is costly both to individuals and healthcare systems. The aim of this study was to understand the rate of revision surgery, further forefoot surgery and 90-day risks of bunion surgery in England.

Method: An England population cohort study of 152,061 operations was performed using the Hospital Episode Statistics database, linked to ONS mortality data (1998-2023). The primary outcome was Kaplan-Meier curve analysis of revision surgery free survival of bunion surgery. Secondary outcomes included the risk of 90-day complications and any further re-operation to the same 1st MTP joint or forefoot. Cox proportional hazard modelling was used to identify those at highest risk of further surgery.

Results: The overall revision-free survival was 93.1% at 20 years. Revision rates were significantly higher among females (HR 1.12, 95%CI: 1.05-1.21), white patients (HR 1.65 95%CI: 1.39 - 1.97), patients aged 40-59 years (HR 2.2, 95%CI: 1.62 - 3.01), and those from the most deprived socioeconomic group (HR 1.52, 95%CI: 1.41- 1.64). Within 20 years, 4.6% of patients underwent revision hallux valgus surgery, whereas only 2.6% proceeded to 1st MTPJ fusion. Females were more likely to get a revision surgery, whereas males were more likely to undergo revision to fusion. The 90-day mortality rate following hallux valgus surgery was 0.053%.

Conclusion: This study shows that hallux valgus correction in England is safe and has a low risk of further intervention. This is the largest retrospective cohort to date and illustrates that for the vast majority of cases, traditional hallux valgus surgery represents a monotherapy with a low revision rate and few complications."

FP21

Prospective, randomised controlled trial to evaluate the effect of weight bearing on patient outcomes following 1st MTP joint fusion.

Scott Purdie, Joel Morash, Bernard Burgesson, Mark Glazebrook
Aberdeen Royal Infirmary

Introduction: First Metatarsophalangeal (MTP) joint arthrodesis is a common procedure for the treatment of hallux rigidus and severe hallux valgus with osteoarthritis. Despite its commonality, post-operative weight bearing protocols vary widely. To date, no prospective randomised controlled trials have directly compared outcomes between immediate weight bearing as tolerated (WBAT) and non-weight bearing (NWB) following 1st MTP fusion.

Method: A prospective randomised controlled trial was conducted with 68 patients undergoing isolated 1st MTP fusion, allocated to WBAT or NWB. Standardised surgical technique and fixation methods (screws or plate) were performed by two fellowship-trained foot and ankle surgeons. Primary outcomes were pain measured by the Visual Analogue Scale (VAS) and function measured by the Foot & Ankle Ability Measure, (FAAM–ADL subscale) at 12 months. Secondary outcomes included non-union, complication, and patient satisfaction. Statistical analysis used t-tests and chi-squared or Fisher's exact tests, with significance at p<0.05.

Results: Sixty-eight patients (33 WBAT, 35 NWB) completed the study. At a minimum 12 months follow-up, both groups demonstrated significant improvements in pain and function. No statistically significant differences were found between WBAT and NWB groups in VAS pain scores (2.97+/-2.215 vs 2.54+/-2.147; p=0.423), FAAM scores (81.31+/-16.028 vs 85.02+/-18.863; p=0.387), or patient satisfaction (8.00+/-2.76 vs 8.34+/-2.52; p=0.594). Complication rates were comparable, with one case of hardware irritation in each group (p=0.739). Plate fixation was more common in the NWB group (p=0.028), this is unlikely to affect outcomes.

Conclusion: Immediate weight bearing following 1st MTP fusion is safe and results in equivalent pain relief, function, satisfaction, and complication rates, compared to traditional NWB protocols. These findings support a shift toward more permissive postoperative strategies, with potential benefits for patient mobility, independence, recovery time, and healthcare resource use."

FP22

A Cadaver Biomechanical Comparison of the Plate Construct for Open Lapidus Fusion versus Percutaneous Lapidus Fusion Using Subchondral Fixation

Alastair Younger, Stephen Steinlauf, Nathan Webb, Brian Thoren, Douglas Linton
University of British Columbia Vancouver BC

Introduction: Tarsometatarsal (TMT) fusions traditionally use bridge plates or compression screws through open incisions to correct deformity and achieve bone healing. A new percutaneous technique can remove cartilage, preserve the subchondral bone and transfix the fusion site. Intraosseus, headless, chamfered, full-thread, non-variable pitch screws are used to transfix all available bone. This study compared the biomechanical properties of the plate construct versus the percutaneous construct.

Method: TMT joints of six cadavers (12 limbs) were stabilized with a locking plate and 3.5 mm compression screw on one limb, and with a percutaneous Lapidus construct on the matched limb. An extensometer was placed on the plantar side of the TMT. The first metatarsal was point loaded cyclically from 9 to 90 N at 60 mm from the TMT joint at 3 Hz. Testing was stopped if the extensometer reached 7 mm of plantar gap, or when 250,000 cycles were reached. Specimens were then statically loaded to failure.

Results: Percutaneous screw specimens reached more cycles to failure at 226,000 ± 58,000 versus 30,000 ± 52,000 for the open plate construct ($p<.001$). Plantar gap was higher in the open plate construct at all cycle counts from 10 to 10,000 cycles (>4 mm) versus the percutaneous group (<1 mm). Maximum load was higher in the percutaneous group (343.3 ± 92.8 N versus 247.3 ± 28.3 N) ($p<.05$). Stiffness of the percutaneous group was higher (40.9 ± 13.4 N/mm versus 16.0 ± 5.3 N/mm) ($p<.01$). No differences were found in bone quality testing. A Cox proportional hazard model identified the mode of fixation as the only significant covariant ($p<.05$) in predicting cycles to failure.

Conclusion: The percutaneous subchondral fixation fusion construct with full-thread, non-variable pitch, intraosseous screws create a stiffer and stronger fixation construct than dorsal plates and cross-screws."

Notes:

BOFAS

POSTERS
ABSTRACT SUMMARY

P1
Adjustable external equinus boots vs fixed angle functional orthoses: Are they worth the cost? A single centre analysis of change of practice.
James Chapman, Emma Fenlon, Edward Wood
Countess of Chester Hospital NHS Foundation Trust

P2
First Metatarsal Pronation Correction After Fourth-Generation Percutaneous Transverse Osteotomy for Hallux Valgus
Tom Lewis, Lily Fletcher, Clare Watt, Robbie Ray, Cesar de Cesar Netto, Miquel Dalmau-Pastor, Peter Lam King's College Hospital NHS Foundation Trust

P3
Evaluating Implant Survivorship and Revision Rates in Salto Talaris Total Ankle Arthroplasty
Nana Amponsah, Joydeep Baidya, Adam Lencer, Kush Mody, Joseph Daniel, Brian Winters, Selene Parekh, David Pedowitz
Rothman Orthopaedic Institute

P4
The results of a national survey of surgeons and physiotherapists regarding physiotherapy practice after foot and ankle arthritis surgery
Philippa Dolphin, Sarah Johnson-Lynn
The James Cook University Hospital, Middlesbrough

P5
Wedge Tarsectomy using Patient Specific Instrumentation in a Tertiary Foot and Ankle Unit
Yahya Ibrahim, Panos Poulious, Shelain Patel, Nicholas Cullen, Matthew Welck, Karan Malhotra
Royal National Orthopaedic Hospital Stanmore

P6
Radiographic Comparison of Forefoot and Midfoot width changes with 4th generation Minimally Invasive Bunion Surgery versus the Modified Lapidus Procedure
Togay Koç Imad Najm, Matthew Towner
Southampton Hospital

P7
What is the Incidence of Symptomatic Late Post-Traumatic Ankle Arthritis Requiring Intervention following ankle fracture?
Samer Bitar, Milindu Makandura, Mona Theodoraki, James Davenport, Michael, Joseph Ring, Robert Smith, Timothy Clough
Wrightington

P8
Open Ankle fragility fractures in elderly patients treated with subtalar joint-Sparing primary ankle fusion: An Evolving Treatment Option
Siddharth Khadilkar, Yousufuddin Shaik
Queen Elizabeth Hospital Birmingham

P9
Functional Outcomes and Complications Following Total Talus Replacement
Nana Amponsah, Adam Kohring, Adam Lencer, Joseph McCahon, Joydeep Baidya, David Pedowitz, Joseph Daniel, Selene Parekh
Rothman Orthopaedic Institute

P11
Long-Term Outcomes by Graft Utilization in Insertional Achilles Tendinitis Surgery
Joydeep Baidya, Nana Amponsah, Kush Mody, Amy Nghe, David Pedowitz, Joseph Daniel, Selene Parekh
Rothman Orthopaedic Institute

P12
Donor Ankle Morbidity Following Peroneus Longus Tendon Harvest for Anterior Cruciate Ligament Reconstruction: A Prospective Evaluation Using Gait, Isokinetic Muscle Strength, and Pedobarographic Analysis
Ronak Kotian, Ajoy S M
Golden Jubilee National Hospital

P15
Total ankle replacement vs ankle arthrodesis outcomes in obese patients with mean 11-year follow-up
Zakir Haider, Ellie Pinsker, Ryan Khan, Timothy Daniels, Mansur Halai
St Michaels Hospital, Toronto

P16
Circular Frame Management of Distal Tibial Fractures; 15 Years of Practice in a Tertiary Referral Unit
Patrick Hickland, Denise Wilson, Conor Mullan, Michael McMullan, Gerard Kelly
Belfast Health and Social Care Trust

P17
Impact of Age Decade on Surgical and Patient-Reported Outcomes Following Total Ankle Arthroplasty
Joydeep Baidya, Nana Amponsah, Kush Mody, David Pedowitz, Joseph Daniel, Selene Parekh Rothman Orthopaedic Institute

P18
The mortality rate and clinical outcomes of ankle arthroplasty in Scotland from 2000 to 2023
Patrick Porter, Matthew Kennedy, Andrew Brunt, Jon V Clarke, Phil Walmsley
Tayside

P19
Bone Graft Augmentation in Fourth Generation Percutaneous Hallux Valgus Surgery
Tom Lewis, Lily Fletcher, Clare Watt, Evelyn Murphy, Min Jia Chua, Andreas Toepfer, Peter Lam
King's College Hospital NHS Foundation Trust

P20
Identifying and Managing Atypical Ankle Fractures Beyond the Lauge-Hansen Classification System
Ahmad Joumah, Peyman Bakhshayesh
Nottingham

enovis FOOT & ANKLE
POWERED BY Osteotec

BOFAS 2025 - Lunch Symposium

Wednesday, November 26th | 12:00 - 14:15

- **Session 1: 12:00 – 13:10**
MIS complex cases discussions
Dr Peter Lam & Dr Robbie Ray

- **Session 2: 13:15 – 14:15**
Overcoming challenges with the Centrolock® implant
Dr Martin Schramm

REDEFINING EVERY STEP

BOFAS

POSTERS
ABSTRACT DETAILED

P1

Adjustable external equinus boots vs fixed angle functional orthoses: Are they worth the cost? A single centre analysis of change of practice.

James Chapman, Emma Fenlon, Edward Wood
Countess of Chester Hospital NHS Foundation Trust

Introduction: Accelerated functional rehab in weightbearing orthoses has become the mainstay of treatment for achilles tendon rupture. Fixed angle boots have been shown to achieve equinus from the midfoot, with the OPED VACOped boot demonstrating an enhanced ankle equinus. We sought to investigate whether the extra cost of the VACOped represented an improvement in PROMS, with a null hypothesis that there is no significant difference.

Method: We conducted a retrospective review of 84 patients (42 in each cohort). Achilles Tendon Repair Score (AS) and Rupture Score (ATRS) was prospectively collected to 9-12 months follow up. We set an MCID of 10; score distributions were compared using Mann-Whitney U-test and Incremental Cost-Effectiveness Ratio (ICER) was also calculated. All data was analysed using SPSS v.29.

Results: Median ATRS at 4-6 and 9-12 months in Airstep vs VACOped were significantly different; 48 vs 67.5 ($p<.001$) and 74 vs 81.5 ($p=.013$) respectively. The difference in score at 9-12 months did not meet the MCID. Median AS was significantly different at 4-6 (55 vs 65, $p<.001$) but not at 9-12 months (70 vs 80; $p=.113$); however, both cohorts met the MCID. ICER per median addition point increase per patient for the ATRS was £3.07 at 4-6 and £7.98 at 9-12 months. For the AS, ICER was £5.99 at both time points. There was no significant difference in patients who required surgery (4 vs 6; Chi-square $p=.5$). Re-rupture was more common in the Airstep group (3 vs 1; $p=.281$).

Conclusion: VACOped represents significantly improved PROMS at an earlier time point and may allow earlier return to function when compared to a fixed angle system. The cost of this appears acceptable when considering the impact of poor function on quality of life and ultimately return to work"

P2

First Metatarsal Pronation Correction After Fourth-Generation Percutaneous Transverse Osteotomy for Hallux Valgus

Tom Lewis, Lily Fletcher, Clare Watt, Robbie Ray, Cesar de Cesar Netto, Miquel Dalmau-Pastor, Peter Lam King's College Hospital NHS Foundation Trust

Introduction: There is increasing interest in the role of pronation as part of the deformity correction in hallux valgus (HV) especially with the advent of WBCT and percutaneous surgical techniques. This study aimed to assess the coronal rotation of the first metatarsal before and after percutaneous distal transverse osteotomy (META) using weight-bearing computed tomography (WBCT) and to correlate these findings with clinical outcome scores.

Method: A retrospective analysis of prospectively collected data from a single centre of patients who underwent WBCT both before and after percutaneous distal transverse osteotomy for hallux valgus correction. The primary outcome was change in pronation on radiographic parameters; Hallux valgus angle, intermetatarsal angle, Metatarsal pronation angle, alpha angle, sesamoid rotation angle, arthritis and sesamoid position were assessed using coronal WBCT images. Secondary outcomes included pre- and post-operative clinical outcomes, including the Manchester Oxford Foot Questionnaire (MOXFQ), EQ-5D-5L, Visual Analogue Scores (VAS) and complication rates.

Results: 51 feet from 34 patients (32 Female, 2 Male, mean age 60.3±10.2 years) underwent META. Radiographic data was available for 94.4% of feet with mean follow up of 12.1±3.2 months. There was a significant improvement across all radiographic parameters including pronation correction ($p<0.05$). There was also a significant improvement in clinical foot function for all MOXFQ domains, EQ-5D-5L and VAS Pain outcomes ($p<0.05$). The complication rate was 1.9%. There was no significant correlation of post-operative outcomes with radiographic pronation parameters. Regression analysis did not identify any radiographic or clinical variables that predicted change in MOXFQ Index domain score.

Conclusion: Percutaneous distal transverse osteotomy for hallux valgus deformity can significantly correct coronal plane pronation and improve patient-reported outcomes, although correction of pronation was not significantly correlated with clinical improvement."

P3

Evaluating Implant Survivorship and Revision Rates in Salto Talaris Total Ankle Arthroplasty

Nana Amponsah, Joydeep Baidya, Adam Lencer, Kush Mody, Joseph Daniel, Brian Winters, Selene Parekh, David Pedowitz
Rothman Orthopaedic Institute

Introduction: Total ankle arthroplasty (TAA) is associated with significant complication and failure rates. This study evaluates the Salto Talaris, a fixed-bearing prosthesis modelled after the mobile-bearing Salto implant. We analyse revision rates, survivorship, early complications, postoperative care, and functional outcomes.

Method: We performed a retrospective review of patients who underwent Salto Talaris TAA between 2010 and 2024. Complications and reoperations were recorded using the American Orthopaedic Foot & Ankle Society (AOFAS) TAA reoperation coding system. Patient-reported outcomes were assessed using the Foot and Ankle Ability Measure (FAAM) and Physical Component Summary (PCS) scores. Statistical analysis included T-tests or Mann-Whitney U tests for continuous variables and Chi-Square or Fisher's Exact tests for categorical data.

Results: A total of 530 patients were included, with an average follow-up of 6.8 years, mean age 69.3 years, and BMI 29.7 kg/m^2. Seventeen cases (3.2%) were revised at an average of 478 days; 6 of these (35.3%) required a second revision. No significant differences were found in physical therapy, bracing, or postoperative care. Preoperative FAAM and PCS scores were similar between groups, with no significant differences in one-year postoperative scores. However, debridement was significantly associated with increased revision risk. A subanalysis of 72 patients with ≥10 years follow-up revealed only one required revision.

Conclusion: The Salto Talaris implant shows excellent mid-to-long-term survivorship with a low revision rate of 3.2%. While functional outcomes did not significantly improve postoperatively, the implant demonstrated long-term durability. The link between debridement and revision offers valuable insight for surgical planning and may guide future patient selection and intraoperative decision-making."

P4

The results of a national survey of surgeons and physiotherapists regarding physiotherapy practice after foot and ankle arthritis surgery

Philippa Dolphin, Sarah Johnson-Lynn
The James Cook University Hospital, Middlesbrough

Introduction: The lifetime prevalence of symptomatic ankle arthritis is 3.4% (Murray, 2018) and symptomatic mid- and hindfoot arthritis affects 1 in 6 older adults (Thomas, 2015). The majority of this disease burden falls on women, manual workers and those with higher markers of socioeconomic deprivation (Roddy, 2015).

There is no agreed pathway in the UK for physiotherapy after foot and ankle arthritis surgery and there is little evidence to guide treatment. This has led to the role of physiotherapy in foot and ankle conditions being made a JLA top 10 priority.

Method: A survey of current physiotherapy practice following foot and ankle arthritis surgery was conducted in the UK via the BOFAS AHP network and a paired questionnaire was disseminated to the BOFAS surgical membership. There were 106 surgeon questionnaire responses, 95% from consultant members. There were 26 responses to the AHP questionnaire, 92% of responses being from band 7 and 8a specialist foot and ankle or lower limb physiotherapists.

Results: Most surgeons felt that the most important purpose of post-operative physiotherapy was to normalise gait (60% after ankle fusion, 64% after foot fusions), however physiotherapists were equally likely to believe that managing patient expectations was most important (29%; 29%).

Only 35% of units employed a specialist foot and ankle physiotherapist and 32% of surgeons felt that their patients had inadequate access to foot and ankle physiotherapy. 18% of units have rehabilitation protocols for patients after foot and ankle fusion surgery. Most patients receive 5 or fewer sessions of physiotherapy post-operatively (73% of ankle fusion and 78% of foot fusion patients).

Conclusion: Most UK patients will receive physiotherapy after foot and ankle fusion surgery, but access is variable and most centres do not use a protocol.

Disclosure: Senior author is a member of the BOFAS Scientific Committee."

P5

Wedge Tarsectomy using Patient Specific Instrumentation in a Tertiary Foot and Ankle Unit

Yahya Ibrahim, Panos Poulious, Shelain Patel, Nicholas Cullen, Matthew Welck, Karan Malhotra
Royal National Orthopaedic Hospital Stanmore

Introduction: Bony correction in complex cavovarus deformities is challenging. To correct deformity at the CORA a multiplanar wedge tarsectomy (WT) may be required. We examine our results of WT using patient-specific instrumentation (PSI).

Method: This single-centre, prospective cohort study evaluated non-correctable cavovarus feet undergoing PSI-guided WT. Accuracy of PSI guides/plans, surgical duration and adjunctive procedures were recorded. Pre- and postoperative weight-bearing CT (WBCT) measurements and PROMs (at 1 year) were compared. Data was normally distributed and analysed with paired t-tests and Pearson correlation.

Results: 11 patients had tri-planar deformities with a CORA at the Chopart or navicular-cuneiform joint. Mean surgical time was 135 minutes. Planned correction was achieved in all cases. Two cases required minor adjustments to initial osteotomy. Nine patients required adjunctive procedures. Postoperative radiological measurements significantly improved including sagittal and axial Meary's angle ($p=0.039$, $p=0.010$), talonavicular coverage ($p<0.001$) and coronal forefoot arch angle ($p=0.001$). All patients fused by 3 months. MOxFQ-Walking scores improved post-operatively, with a greater improvement with increasing correction of adduction ($p=0.047$, $r=0.67$). Improvements were noted in other PROMs but were not statistically significant. One patient had residual hindfoot varus and underwent subsequent calcaneal osteotomy. Two patients had delayed wound healing. One patient had transient neuropathic pain and one developed CRPS.

Conclusion: PSI-guided wedge tarsectomy is safe and achieves predictable multiplanar correction. Our unit's experience has been excellent, with significant improvement in patients' walking, particularly with larger deformity corrections.

P6

Radiographic Comparison of Forefoot and Midfoot width changes with 4th generation Minimally Invasive Bunion Surgery versus the Modified Lapidus Procedure

Togay Koç Imad Najm, Matthew Towner
Southampton Hospital

Introduction: Minimally Invasive Bunion Surgery (MIBS) and the Modified Lapidus Procedure (MLP) have both been shown to treat bunions and narrow forefoot bony and soft tissue width. Both procedures stabilise the 1st Tarsometatarsal Joint (TMTJ). El Masry et al report an increase in proximal midfoot bony and soft tissue width associated with MIBS.

Aim: To compare forefoot and midfoot bony and soft-tissue width between MIBS and MLP.

Method: A retrospective review of 21 consecutive MIBS using 4th generation technique on 16 feet between March 2022 and August 2024 and 24 consecutive MLPs on 20 feet between July 2021 and June 2024 were performed. Radiographic data collection included pre- and post-operative HVA, IMA +/- proximal IMA, DMAA, Dist 1-2 (distance between 1st & 2nd metatarsal), forefoot bony (FFBW) & soft-tissue width (FFSTW), proximal/midfoot bony (MFBW) & soft-tissue width (MFSTW) and 1st:2nd Metatarsal ratio.

Results: For the MLP: IMA, HVA & DMAA decreased from 17.97, 40.97 and 27.63 respectively to 7.48, 14.44 and 8.55 respectively. The mean dist 1-2 decreased from 18.37mm to 13.99mm. The mean FFBW & FFSTW decreased from 96.87mm & 107.69mm to 86.27mm & 98.79mm respectively. The mean MFBW & MFSTW decreased from 79.00mm & 95.17mm to 73.17mm & 90.97mm< br /> For MIBS: IMA, HVA & DMAA decreased from 15.79, 31.98 and 16.01 respectively to 4.75, 8.19 and 4.20 respectively. Mean proximal IMA increased to 24.01. The mean dist 1-2 increased from 17.62mm to 21.71mm. The mean FFBW & FFSTW decreased from 94.88mm & 105.47mm to 87.99mm & 102.19mm respectively. The mean MFBW & MFSTW however increased from 78.47mm & 95.00mm to 82.23mm & 96.18mm.

Conclusion: Both MIBS and the MLP reduce measures of forefoot bony & soft-tissue width. However, MIBS was found to increase measures of proximal/midfoot bony & soft-tissue width while the MLP reliably reduced these variables."

P7

What is the Incidence of Symptomatic Late Post-Traumatic Ankle Arthritis Requiring Intervention following ankle fracture?

Samer Bitar, Milindu Makandura, Mona Theodoraki, James Davenport, Michael, Joseph Ring, Robert Smith, Timothy Clough
Wrightington

Introduction: To assess the 10-year outcomes of ankle fractures managed at our centre in 2014, specifically reviewing the incidence of symptomatic post-traumatic ankle arthritis requiring further intervention, including injections, fusion, or total ankle replacement (TAR).

Method: This retrospective cohort study included all 146 ankle fractures presenting between January and December 2014; pilon and talar fractures were excluded. Data was collated from electronic records and imaging, including fracture classification (Weber A/B/C), medial, posterior malleolar involvement, and syndesmotic fixation. Patient demographics, co-morbidities, initial management, and outcomes were recorded. Outcomes were assessed over 10 years, focusing on the need for further treatment of ankle arthritis.

Results: The cohort had a mean age of 48.8 years (range 6–89), with 50 male and 96 female patients. Smoking, diabetes, rheumatoid arthritis, and osteoporosis were present in 10.3%, 9.6%, 4.8%, and 8.2%, respectively. 21 patients died during follow-up; none required ankle intervention.

Of the 146 fractures, 10 were Weber A, 76 Weber B, 49 Weber C, and 11 isolated medial malleolar. Surgical fixation was performed in 99 cases (67.8%). Medial malleolar fractures occurred in 82 cases (56.2%). Syndesmotic fixation was used in 23 cases (15.7%; 6 Tightrope, 17 screws). Posterior malleolar fractures were present in 37 cases (25.3%); 7 involving >1/3 of the articular surface treated with screw fixation and 30 <1/3rd articular surface – no posterior malleolar fixation. None received posterior plating.

Over 10 years, one patient (Weber C) underwent ankle fusion at 2.4 years, and four patients (3 Weber B, 1 Weber C) received steroid injections at a mean of 3.9 years (2.5-6.3 years). No patients required TAR.

Conclusion: Very few ankle fractures (3.4%) progressed to clinically significant symptomatic arthritis requiring intervention over the next 10 years, with just 0.7% requiring surgery."

P8

Open Ankle fragility fractures in elderly patients treated with subtalar joint-Sparing primary ankle fusion: An Evolving Treatment Option

Siddharth Khadilkar, Yousufuddin Shaik
Queen Elizabeth Hospital Birmingham

Introduction: Open ankle fractures in elderly patients are associated with significant morbidity due to complex fracture patterns, compromised soft tissue, and multimorbidity. Traditional staged fixation may lead to delayed mobility and higher complication rates. Primary ankle fusion offers an alternative, but conventional tibiotalocalcaneal (TTC) fusion compromises subtalar motion, impacting functional outcomes.

To evaluate the outcomes of subtalar joint-sparing primary ankle fusion using either an anterograde tibial nail or cannulated screws in elderly patients with open ankle fractures.

Method: This retrospective study included 14 patients aged ≥60 years with open ankle fractures treated at two UK centres. Patients underwent primary ankle fusion using either an anterograde tibial nail or cannulated screws, preserving the subtalar joint. All surgeries were performed within 12–24 hours of injury, adhering to BOAST with plastic surgery input for soft tissue management. Patients followed a standardized rehabilitation protocol allowing early full weight-bearing. Radiological union was assessed at a minimum follow-up of 1 year and at 18 months.

Results: Radiological union was achieved in the majority of patients by final follow-up. Early full weight-bearing was well tolerated, with most patients returning to their baseline level of mobility. No deep infections, implant failures, or revision surgeries were recorded. Subtalar joint motion was preserved in all cases.

Conclusion: Subtalar joint-sparing primary ankle fusion is a safe and effective treatment for open ankle fractures in elderly patients. It enables early mobilization, preserves hindfoot function, and ensures reliable bone union with low complication rates. Given these outcomes, this technique should be considered a preferred alternative to traditional TTC fusion, offering clear functional benefits for this vulnerable population."

P9

Functional Outcomes and Complications Following Total Talus Replacement

Nana Amponsah, Adam Kohring, Adam Lencer, Joseph McCahon, Joydeep Baidya, David Pedowitz, Joseph Daniel, Selene Parekh
Rothman Orthopaedic Institute

Introduction: Total talus replacement (TTR) is an emerging alternative for patients with talar avascular necrosis, non-union, and trauma, preserving ankle motion compared to tibiotalar and subtalar fusion. However, data on failure rates, functional outcomes, and predictors of poor results remain limited. The purpose of this study is to evaluate functional outcomes, reoperation rates, and risk factors for complications following TTR.

Method: A retrospective review identified patients who underwent isolated elective total talus replacement between 2017 and 2023. Patients with total ankle arthroplasty or tibiotalar fusion were excluded. Demographic variables, including age, sex, BMI, and comorbidities, were recorded. Functional outcomes were assessed using Foot and Ankle Outcome Scores (FAOS), evaluating pain, symptoms, activities of daily living (ADL), sports/recreation, and quality of life (QOL). Complications, revision rates, and additional surgeries were analysed.

Results: Thirty-one patients underwent TTR, with a mean age of 41.6 ± 15.4 years and a mean follow-up of 1.7 ± 0.9 years. The majority were female (71.2%), and the mean BMI was 29.7 ± 7.0. Diabetes was present in 12.9% of patients. Functional outcomes significantly improved across all FAOS domains (< 0.001). The FAOS Pain score increased from 42 ± 17.3 preoperatively to 75.3 ± 18.6 at their final follow-up. Similar improvements were seen in FAOS Symptoms (42 ± 19.1 to 66.4 ± 22.9), ADL (54.5 ± 23.5 to 84.3 ± 18.6), Sports/Recreation (26.8 ± 31.4 to 36.5 ± 28.4), and QOL (10.4 ± 14.5 to 42.8 ± 21.2). Revision surgery was required in 2 patients (6.4%), and 4 patients (12.9%) underwent additional procedures.

Conclusion: Patients undergoing TTR demonstrated significant improvements in pain, symptoms, and functional outcomes, with high early implant survivorship. Total talar replacement can restore function and mobility in appropriately selected patients, offering a promising solution for those seeking to avoid fusion procedures."

P11

Long-Term Outcomes by Graft Utilization in Insertional Achilles Tendinitis Surgery

Joydeep Baidya, Nana Amponsah, Kush Mody, Amy Nghe, David Pedowitz, Joseph Daniel, Selene Parekh
Rothman Orthopaedic Institute

Introduction: Insertional Achilles tendinitis (IAT) is commonly treated with tendon grafting or occasionally biologics to further reinforce the repair and prevent re-rupture. Common grafts are the plantaris and flexor hallucis tendon transfer. With the increase of recreational sports and activities, more patients are eager to get back into their physical activities after surgery and want to weigh the options that get them recovering faster and stronger. Considering a graft is costly and the long-term results still need to be studied. This study aims to evaluate the long-term outcomes associated with grafting versus no grafting in patients undergoing treatment for IAT.

Method: A retrospective analysis was conducted on a cohort of 753 patients, divided into two groups: those who received a graft (n=196) and those who did not (n=557). Ipsilateral retear rates, revision surgery rates, readmission rates, and functional recovery as measured by the Foot and Ankle Ability Measure Visual Analog Scale (FAAM-VAS) scores were analysed. Data was analysed for statistical significance.

Results: The analysis revealed a significantly higher rate of ipsilateral retears in the graft group (2.06%) compared to the no graft group (0.18%) (p=0.018), indicating a notable risk associated with grafting. The rate of revision surgeries was slightly higher in the graft group (3.61%) compared to the no graft group (2.01%), although this difference was not statistically significant (p=0.274). Readmission rates were similar between the two groups (7.22% for graft vs. 6.02% for no graft). Functional recovery, assessed via Delta FAAM VAS scores, demonstrated a statistically significantly better improvement in the no graft group (-18.30) compared to the graft group (-1.39) (p=0.033).

Conclusion: Our study indicates that long-term results for IAT repair with graft are shown to have a higher rate of retears and revisions and may not be worth the extra cost and risk."

P12

Donor Ankle Morbidity Following Peroneus Longus Tendon Harvest for Anterior Cruciate Ligament Reconstruction: A Prospective Evaluation Using Gait, Isokinetic Muscle Strength, and Pedobarographic Analysis

Ronak Kotian, Ajoy S M
Golden Jubilee National Hospital

Introduction: The peroneus longus tendon (PLT) has gained attention as a suitable autograft option for anterior cruciate ligament reconstruction (ACLR), offering benefits such as superior tensile strength, shorter harvest duration, increased graft diameter and length. However, existing literature lacks a comprehensive objective evaluation of ankle morbidity following its harvest.

Method: In this prospective study, 52 patients who underwent ACLR using PLT autografts were assessed pre-operatively, and then at 6 months and 1 year post-operatively. Objective parameters included gait analysis via the GAITRite system, isokinetic strength testing of evertors and invertors using the HUMAC NORM dynamometer, and foot pressure analysis with the EMed pedography system. Subjective assessments included the Foot and Ankle Ability Measure (FAAM) score and the Foot and Ankle Outcome Score (FAOS).

Results: The mean age was 32.61 ± 10.60 years, with a mean follow-up of 18.34 months. The PLT graft had an average length of 29.32 ± 2.26 cm and a diameter of 9.32 ± 0.92 mm. At 6 months, a significant reduction in peak torque at 60°/second velocity of both evertor and invertor muscles was observed ($p<0.05$). The decrease in peak torque at both 60°/second velocity and 120°/second velocity was not statistically significant at 1-year ($p>0.05$). Functional Ambulation Profile (FAP) score, cadence, single-leg support time, step time and walking velocity showed significant improvement over different time intervals ($p<0.001$). No significant changes were observed in stride length, double support time, stance and swing phases, maximum force, peak pressure, FAAM, or FAOS scores ($p>0.05$).

Conclusion: Harvesting the PLT for ACLR may initially weaken the evertor and invertor muscles; however, targeted ankle rehabilitation can aid in strength recovery. Although gait and pedobarographic functions remained largely unaffected, further robust evidence is necessary before endorsing PLT as a first-line graft option. It may be suitable for select cases, such as multi-ligament injuries or revisions."

P15

Total ankle replacement vs ankle arthrodesis outcomes in obese patients with mean 11-year follow-up

Zakir Haider, Ellie Pinsker, Ryan Khan, Timothy Daniels, Mansur Halai
St Michaels Hospital, Toronto

Introduction: Obesity is rising in North America and Europe with renewed interest in total ankle replacements (TARs) in this cohort of patients. Previous studies have reported TAR vs Ankle Arthrodesis (AA) outcomes in non-obese patients. This study aims to report TAR vs AA outcomes specifically in obese patients with long term follow up.

Method: This was a retrospective study of TARs and AA performed in patients with a Body Mass Index (BMI) ≥30 kg/m2. Ankle Osteoarthritis Scale (AOS) and Short Form-36 mental and physical component scores were collected. Secondary operations were recorded. Independent T test was used to compare PROM score changes with Holm-Bonferroni adjustment for multiple hypothesis testing. Significance was set p-value <0.05.

Results: 160 patients were included with 105 patients in the TAR group and 55 in the AA group with a mean BMI of 35.2 kg/m2 (SD ± 4.7kg/m2). At mean follow of 11.2 years (SD ± 2.9 years) change in pre-operative and post operative PROM scores was not significant between the two groups except for AOS Disability change (p = 0.002) favouring TAR. The number of re-operations were higher in the TAR group (p=0.03) with 12% requiring a polyethylene liner exchange. 4 patients required surgical debridement/revision for infection in the TAR group with 0 in the AA group. Revision for malposition or non-union was similar in both groups (5 patients TAR group vs 3 in the AA group). 2 patients in the AA group required BKA.

Conclusion: Obese patients with TAR or AA experience similar improvements in ankle pain, and overall physical health scores at long term follow up. TAR PROMs are not inferior to AA in obese patients and may lead to greater functional improvement (in terms of disability) than fusion. Secondary procedures are higher in the TAR group and individualized decision making is necessary with patients."

P16

Circular Frame Management of Distal Tibial Fractures; 15 Years of Practice in a Tertiary Referral Unit

Patrick Hickland, Denise Wilson, Conor Mullan, Michael McMullan, Gerard Kelly
Belfast Health and Social Care Trust

Introduction: Distal tibial fractures, although relatively uncommon, are a concern to orthopaedic surgeons owing to their high energy nature and the associated soft tissue damage, metaphyseal comminution and articular involvement. Presently, there is no robust evidence to guide operative management, although circular frame fixation is one technique that can address and obviate some of these problems.

Method: A retrospective review was undertaken to identify patients who had undergone circular frame fixation (CFF) of a distal tibia fracture in a UK major trauma centre from Jan 2010 – Dec 2023 inclusive. Outcomes of interest were postoperative complications, particularly those evidenced by an unplanned return to theatre. Regional electronic record and imaging systems were reviewed to identify these events.

Results: 232 fractures were identified in 230 patients from 2010-2023 inclusive, with a mean age of 48.7 years and of whom 62.5% were male. 18.1% of fractures were open and 65.5% AO class 43C. The mean time from injury to CFF was 6.6 days, with frames being retained for an average of 5.1 months. At a mean of 8.4 years (range 0.6-15) post-operatively, the unplanned reoperation rate was 14.2%, as indicated for; deep surgical site infection (SSI) 6.9%, septic non-union 2.6%, and aseptic non-union 2.2%. The rate of clinically significant post-traumatic ankle arthritis was 6.9%, but overall arthrodesis rate only 2.2%. The amputation rate was 1.3%. Cases of open fractures or with diabetes were more likely to develop a deep SSI ($p<0.05$).

Conclusions: This study describes the mid-to-long term outcomes of patients who underwent CFF of a distal tibia fracture, representing the largest available series, and demonstrating favourable rates of major complications compared to those available in the existing literature. Our results support this practice, in an appropriately resourced multi-disciplinary service, and furthermore provide invaluable information that can be used when counselling relevant patients."

P17

Impact of Age Decade on Surgical and Patient-Reported Outcomes Following Total Ankle Arthroplasty

Joydeep Baidya, Nana Amponsah, Kush Mody, David Pedowitz, Joseph Daniel, Selene Parekh Rothman Orthopaedic Institute

Introduction: Degenerative joint disease or post-traumatic arthritis of the ankle is often addressed using total ankle arthroplasty (TAA). Previous literature has examined outcomes at the extremes of the age continuum, but there are no studies tracking outcomes over time based on age. Thus, the purpose of this study was to compare surgical and patient-reported outcomes (PROM) between patients in different decades of life undergoing TAA.

Method: Adult patients who underwent elective TAA at a tertiary care centre (2010-2024) were retrospectively identified and stratified into decades of life ranging from less than 50 to 80+ years old. Demographics/surgical characteristics were collected. Outcomes of interest were readmissions; revisions; time to weightbearing; time to return to daily activities; and PROMs of FAAM VAS and SF-12 PCS scores preoperatively and at 1 year postoperatively.

Results: 787 patients who met inclusion criteria were identified (age < 50: 41; 50-59: 99; 60-69: 260; 70-79: 275; 80+: 112). The 80+ cohort had the lowest BMI (28.8 kg/m2; $p = 0.002$) and proportion of non-smokers (65.2%; $p = 0.026$), and highest Charlson Comorbidity Index (4.46; $p < 0.001$) and proportion of Medicare (59.8%; $p < 0.001$). Length of stay increased with each decade of life from 1.16 to 2.06 days ($p < 0.001$). Readmissions, revisions, and time to return to daily activities were comparable between age groups. Time to weightbearing was longest in the 80+ group (40.7 days; $p = 0.037$). Postoperative FAAM VAS and PCS scores were also best in the 80+ group ($p < 0.001$ and $p = 0.043$, respectively).

Conclusion: This study identified that while length of stay increased with greater age, it was not associated with differences in readmissions, revisions, or recovery to baseline functionality. The favourable PROMs also indicate that older adults are satisfied with the outcomes of their surgery. Surgeons should be cognizant of the potential for adverse outcomes, but the otherwise comparable risk profile and PROMs suggest that TAA is safe and effective to perform in all age groups."

P18

The mortality rate and clinical outcomes of ankle arthroplasty in Scotland from 2000 to 2023

Patrick Porter, Matthew Kennedy, Andrew Brunt, Jon V Clarke, Phil Walmsley
Tayside

Introduction: An ankle arthroplasty is a definitive treatment for end-stage arthritis. This is a commonly performed operation, however, there is limited evidence on arthroplasty survival, clinical outcome and comparison of various implants used in Scotland.

The primary aim of this study is to determine the survivorship of arthroplasty, the length of patient hospital stay and mortality rate.

Method: This retrospective cohort study was comprised of multi-centre data from the Scottish Arthroplasty Project (SAP) between 2000 to 2023. Demographic and clinical data was collected prospectively. The primary outcome of arthroplasty failure was defined: as the removal or exchange of any components of the implanted device including removal of the polyethene, one stage or two stage revision or conversion to ankle fusion.

Results: A total of 1517 ankle arthroplasties were included in this study in 2000. A total of 1196 patients were alive by the end of the study in 2023. This gives mortality rate of 21.16%. A total of 127 ankle arthroplasties failed (9.14%), meaning revision surgery was required. The arthroplasty survival at 23 years, using revision surgery as an end point, was 73.96%. The median length of hospital stay was two days. The mean infection rate of an ankle arthroplasty was 1.25%.

Conclusions: The ankle arthroplasty survival rate in Scotland is in keeping with the rate of the UK."

P19

Bone Graft Augmentation in Fourth Generation Percutaneous Hallux Valgus Surgery

Tom Lewis, Lily Fletcher, Clare Watt, Evelyn Murphy, Min Jia Chua, Andreas Toepfer, Peter Lam
King's College Hospital NHS Foundation Trust

Introduction: Minimally invasive or percutaneous surgery (MIS) for hallux valgus correction has demonstrated excellent clinical and radiographic outcomes. However, there are rare occasions where there is limited bone formation and remodelling despite successful union. This study investigated whether prophylactic bone graft augmentation could improve bone formation compared to standard percutaneous technique.

Method: A retrospective comparative study of patients undergoing fourth-generation percutaneous hallux valgus correction with Bone Graft Augmentation (BGA group) or without (NBG group) demineralized bone fibre augmentation. Primary outcome was radiographic healing assessed at 6 weeks, 3 months, and 6 months using a validated classification system. Secondary outcomes included patient reported outcome measures (MOXFQ, EQ-5D-5L, VAS Pain), and radiographic parameters (intermetatarsal angle, hallux valgus angle).

Results: Between September 2022 and July 2024, 215 patients (191 female; 24 males; 316 feet) underwent fourth generation percutaneous metatarsal extra-capsular transverse osteotomy for hallux valgus correction. Patients were divided into bone graft augmentation (BGA; 222 feet) and non-bone graft (NBG; 94 feet) groups. Radiographic follow-up was available for 75.2% (167 feet) of BGA and 79.8% (75 feet) of NBG cases. The BGA group showed significantly improved radiographic union scores at 3 and 6 months ($p=0.005$-0.027) but not 6 weeks ($p=0.06$), with both groups achieving 100% union by 6 months. There were no significant differences between groups in terms of patient reported outcome measures or radiographic deformity correction ($p>0.05$). The additional cost of bone graft augmentation was USD$1990 per procedure

Conclusions: The addition of demineralized bone matrix to the lateral healing zone, led to significantly improved radiographic healing rates at three and six months following percutaneous hallux valgus surgery."

P20

Identifying and Managing Atypical Ankle Fractures Beyond the Lauge-Hansen Classification System

Ahmad Joumah, Peyman Bakhshayesh
Nottingham

Introduction: The Lauge-Hansen (LH) classification system remains a cornerstone for evaluating ankle fractures, effectively categorising most injuries based on predictable mechanisms. However, a notable subset of fractures defies LH classification. This study aims to identify and characterise these atypical patterns, evaluating their prevalence, imaging features, surgical management, and need for syndesmotic fixation.

Method: We retrospectively reviewed all ankle fractures treated at a single major trauma centre over 12 months (2022–2023). Atypical fractures were defined as those exhibiting anterior or posterior talar subluxation/dislocation on lateral radiographs and not classifiable under LH. These were instead characterised by alternative mechanisms: hyper-flexion pronation, hyper-flexion supination, hyper-extension supination, or hyper-extension pronation. Comparisons were made with LH-classifiable fractures regarding frequency, CT utilisation, surgical approach, and syndesmotic fixation.

Results: Of all fractures reviewed, 20% (n=70) were unclassifiable under LH criteria. These atypical injuries showed distinct management requirements: syndesmotic fixation in 100% versus 20% in LH-classifiable cases; preoperative CT in 60% versus 20%; and combined surgical approaches in 40% versus 20%. Posterior-lateral, posterior-medial, and modified posterior-medial approaches were common. Combinations such as posterior-lateral plus direct lateral approaches were uniquely observed in this cohort.

Conclusion: A significant proportion (20%) of ankle fractures cannot be categorised by the LH system and appears to arise from mechanisms where the foot is not fixed at the time of injury—suggesting a different biomechanical origin. These injuries are associated with higher rates of syndesmotic fixation, greater reliance on advanced imaging, and more complex surgical approaches. Findings support the development of a modified classification system to guide diagnosis and treatment of these distinct injury patterns”

BOFAS

SPONSORS
PROFILES