

# BOFAS

British Orthopaedic Foot & Ankle Society

**BELFAST 2024**

ANNUAL SCIENTIFIC MEETING

6-8 MARCH 2024 • ICC BELFAST

Belfast

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## GOLD SUPPORT EDUCATIONAL PARTNER



## SILVER SUPPORT EDUCATIONAL PARTNER



## BRONZE SUPPORT EDUCATIONAL PARTNER



# WELCOME BACK TO BELFAST

It is 11 years since BOFAS last crossed the Irish sea to the Emerald Isle. On this occasion we are delighted to welcome as our Guest Nation our Foot & Ankle surgical cousins in IOFAS (Irish Orthopaedic Foot & Ankle Society) who have travelled from all four proud provinces of Ireland.

We welcome the best speakers from across the United Kingdom, Ireland, Europe, Africa, North America, and Australasia. Together with the BOFAS Education Committee I hope that you will find the educational programme interesting, inclusive, and informative.



BOFAS has been developing networks this year. Having worked in a network in both a spoke and a hub hospital, I appreciate the concern we all have when a patient presents with a possible tumour. Hence, we will hear from leading tumour surgeons from England, Scotland, Ireland and Wales.

We welcome a global panel to discuss the current controversies with Foot & Ankle Sports Injuries and hope the stimulating discussion will help us to care better for our own athletes.

While we all aspire to GIRFT, complications and difficulties still occur after forefoot surgery, I am sure you discuss them regularly in your own local MDT as we do in Oxford. On Wednesday morning, a panel of our own experts will guide us to possible solutions to get it right second time. The interest in MIS Forefoot surgery is surging across the country. So, I have invited the President of the French Foot & Ankle Society to share the French experience of problems after MIS forefoot surgery and of course how best to avoid them. Hopefully we can learn from the early adopters and avoid their mistakes.

Two of our keynote addresses concentrate on areas where science has advanced the most in recent years; both on the use of biologics in foot and ankle surgery and the management of osteomyelitis.

The future of orthopaedic foot and ankle surgery is bright. However, it falls upon us all to teach the next generation of surgeons. We will learn about the future of foot and ankle surgery in our FRCS (Orth) and about new methods of teaching using virtual reality and simulation training. We will hear about the innovative and creative ways BOFAS has taught both at home and overseas.

On Thursday morning, between Industry workshops, I hope you can attend the Case Controversies session. Ireland is a land of golfers and like the Ryder or Solheim Cups our experts will play on two teams one from Europe opposing another with players from the Rest of the World.

Each lunchtime you are welcome to come along and participate in the new soap box sessions on either Private Practice matters or Equality, Diversity, and Inclusion. I hope these will spark friendly vigorous debate, but not another conflict.

On Friday morning, in addition to the now established finale the "Tips and Tricks" session we will focus on those traumatic foot injuries which usually present late and challenge us all.

This is our 49th Annual Scientific Meeting. In the approach to our half-centenary, it is undoubtedly time to seek your views on the direction for BOFAS for the next fifty years. Therefore, we have launched our first membership survey and I strongly encourage you all to make time this week to complete it to guide your BOFAS.

BOFAS was honoured to be granted permission by the City Council to host our Gala Dinner in the Belfast City Hall, which is the historic heart of Belfast and has seen more than its share of history. I hope you find the evening of fine Ulster cuisine, Irish musical culture and great craic!!

The great many BOFAS activities throughout my year as President and of course this conference have all been a great team effort of hard work by our committees and working groups. I thank all our colleagues on the BOFAS committees and of course Jo Millard, who had a deserved promotion this year to become our Chief Operating Officer. We must of course thank Industry, who have supported this meeting with the greatest sponsorship.

I look forward to meeting many of you throughout the meeting and especially over a pint of Guinness at the Wednesday evening welcome.

Finally, I commend this meeting to you all and hope that this week you find both facts and friendship.

*Rick Brown*

BOFAS President.

Novastep® invites you to our **MIS workshop**

## Pecaplasty®: the first percutaneous Bunion Correction Guide



Dr Tristan Meusnier



Dr Robbie Ray

**Thursday 7<sup>th</sup> March 2024**

### 8.30 - 10.00: SESSION 1

#### 8.30 – 9.30 Pecaplasty® presentation

- 4th generation MIS hallux valgus correction: experimental technique to routine practice- an evidence-based approach
- Pecaplasty® operative technique presentation
- Q&A

**Robbie Ray**

**Tristan Meusnier**

#### 9.30 – 10.00 Hands-on-workshop

### 10.00 - 12.00: SESSION 2

#### 10.00 – 11.00 Pecaplasty® presentation

- 4th generation MIS hallux valgus correction: experimental technique to routine practice- an evidence-based approach
- Pecaplasty® operative technique presentation
- Q&A

**Robbie Ray**

**Tristan Meusnier**

#### 11.00 – 12.00 Hands-on-workshop

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# GENERAL INFORMATION

# CITY CENTRE MAP

## Registration & Exhibition Timings

Day	Registration Open	Lunch	Meeting Close	Additional Events
Wednesday 6th March	08:00	13:00 - 14:00	18.00	18.00-19.00 (All Welcome) Poster Viewing/Drinks reception  22.00-1.00 ToeJam Gig @ Empire Music Hall 42 Botanic Ave, Belfast BT7 1JQ
Thursday 7th March	08:00	12:00 - 12:45	18:00	19:30 - 23:30 (Pre-Booked) Gala Dinner, Belfast City Hall
Friday 8th March	08:30	11:30 - 12:00	13:30	13:45 - 15:15 Arthrex Workshop

On registration you will receive a badge, a lanyard and a pen.  
There will be no paper programme or bags at this year's conference.  
A PDF Version of the programme can be found on the BOFAS website Annual Meeting page or on this APP.

## Speaker Preview

Speaker preview can be found in Boardroom 2 on the second floor. If you are a speaker, please ensure you go to the speaker preview room at least 1 hour before the session starts to check your presentation.

## Gala Dinner Tables

Buses will be provided from 19:10hrs outside the Hilton Hotel for transfer to Belfast City Hall.

A drinks reception will be held from 19.30hrs on the Rotunda. The gala dinner will be held in The Great Hall at Belfast City Hall. This is a pre-booked event.

Belfast City Hall is located in the centre of Belfast and is a 7 minute walk from the Hilton Hotel.

## Cloakroom

The cloakroom in the conference centre will be open between 08.00hrs – 18.00hrs daily and is located on the ground floor. This is chargeable per item.

## Prayer Room

There will be a Prayer Room facility on level 3. This will be clearly signposted, however if you are requiring direction, please speak with the registration staff who will guide you.

## Maternity Room

There will be a comfortable space for baby changing/feeding available in Boardroom 3 on the second floor. Should you need direction or assistance please ask the registration staff who will guide you.

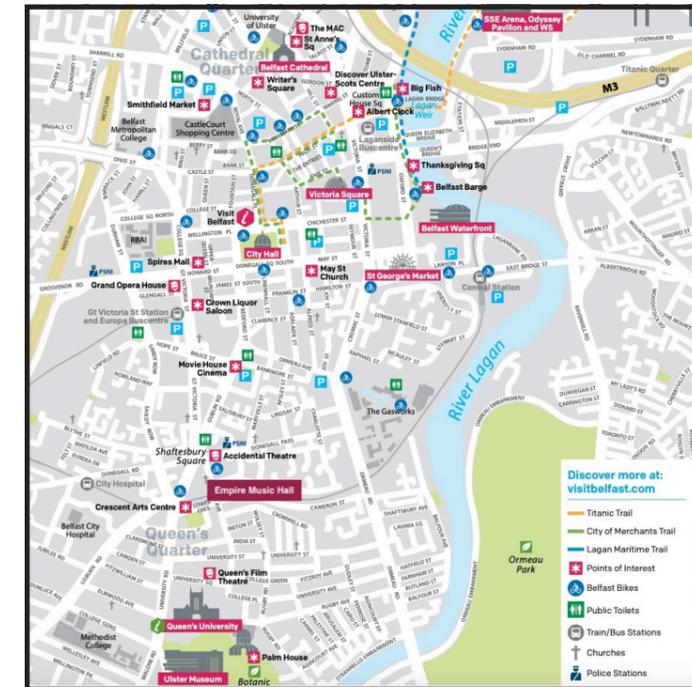
## Flights

Visit <https://visitbelfast.com/plan/getting-to-belfast-travel-options/> for further information and routes.

## Local Taxis

Visit <https://visitbelfast.com/plan/getting-around-belfast/> for maps of the city and local travel options.

You can also find details helpful apps to find your way around the city.  
<https://visitbelfast.com/plan/belfast-visitor-apps/>



## Parking

There is parking available next to the Hilton Hotel Belfast which is chargeable.  
<https://www.apcoa.co.uk/parking-in/belfast/oxford-street-hilton/>

## CPD Points

Wednesday 6 points, Thursday 6 points, Friday 4 points.

A certificate of attendance is issued by email following the Annual Meeting on completion of the Feedback Survey, which can be found on the conference App.

The survey will close 3 months following the meeting. Please ensure you download and save your certificate, as these are not kept on file. **No certificates will be available after this time.**

## Badge Types

Speakers	Red	Trainee	Light Blue
BOFAS Full Member	Dark Blue	Non-Member	Light Blue
BOFAS Retired Member	Dark Blue	Exhibitors	Green
Allied Health Professional	Light Blue		

## Refreshments

Tea and coffee will be served daily in the exhibition areas shown on the Exhibition Plan during the morning and afternoon break. The Exhibition will be held in the Hall 1A/B/C.

Lunch will be served on Wednesday and Thursday in the exhibition areas shown as blue blocks on the Exhibition Plan. The Exhibition will be held in the Hall 1A/B/C.

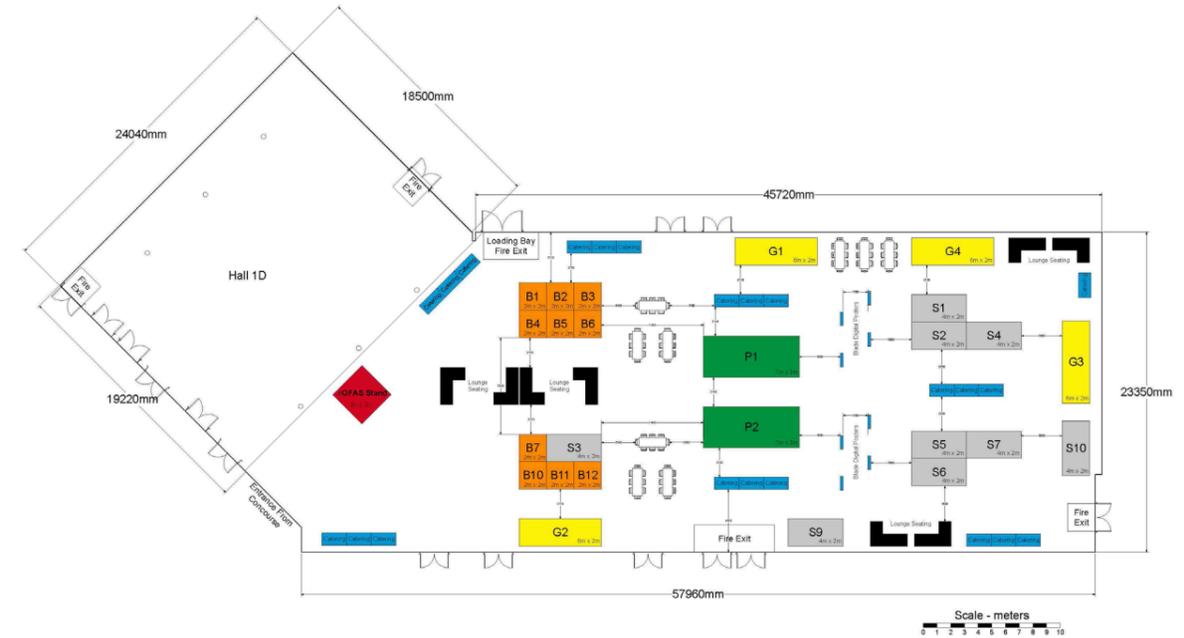
Brunch will be served in the Exhibition area on Friday during the midmorning break due to programme timings. The Exhibition will be held in the Hall 1A/B/C.

# POSTER LOCATIONS

Posters can be found

- P1. The importance of pre-operative CT imaging in posterior malleolus fixation and clinical outcomes
- P2. Preoperative anxiety and depression are associated with poorer patient-reported outcome following total ankle replacements
- P3. Long-term follow up of TAR in patients with juvenile idiopathic arthritis
- P5. Does the underlying cause of arthritis affect the outcome of total ankle replacement? A 10 year follow up study
- P6. Chevron vs transverse cut comparison in minimally invasive hallux valgus correction. Does the osteotomy affect outcome?
- P7. 7 to 9 year survivorship of 106 fixed bearing total ankle replacements
- P8. A medium term review of the outcomes of talar osteochondral lesions treated with matrix associated stem cell transplantation
- P9. Silastic joint arthroplasty for end stage Hallux Rigidus - a joint preserving alternative
- P10. A Novel method for reconstructing complex diabetic foot wounds using Biodegradable Temporising Matrix (BTM)
- P11. Radiological medial safe zone - Protecting the posterior tibial tendon during ankle or pilon fracture fixation
- P12. The patient and surgical factors specific to patients not receiving anticoagulation when undergoing foot and ankle surgery in the UK - UK-FATE Audit
- P13. Soft tissue sarcomas of the foot and ankle: a 12 year Sarcoma Centre experience
- P14. Pedal medial artery calcification score as a prognostic marker for the success of surgical intervention in diabetic foot disease
- P15. Short to medium term functional and radiological outcomes and complication rates for Intra-articular Calcaneum fracture fixation done using Sinus Tarsi Approach
- P16. Weight bear then discharge: A safe management strategy for isolated Weber B lateral malleolus fractures – outcomes of 658 patients
- P17. Bone tumours of the foot & ankle: an analysis of 131 cases
- P18. Moderate and severe coronal plane deformity corrected with the Infinity ankle prosthesis
- P19. Achilles tendon ruptures and venous thromboembolism - UK Foot and Ankle Thrombo-Embolic Audit (UK-FATE)
- P20. Anterior translation post anterior pilon fixation. Are we missing something?

# EXHIBITION PLAN



Company	Stand No.	Company	Stand No.	Company	Stand No.
Stryker	P1	Medray Group & Planmed	S3	Premium Medical Protection	B3
Paragon 28	P2	Vilex	S4	Civica	B4
Orthosolutions	G1	Joint Operations	S5	OHI	B5
Arthrex	G2	Exactech	S6	Marquardt	B6
Enovis	G3	Lavender Medical	S9	NSK Surgery	B7
DePuy Solutions	G4	Bonesupport	S10	Acumed	B10
Bioventus	S1	Medartis	B1	Anika	B12
Biocomposites	S2	IdealMed	B2	BOFAS	Stand

# PLATINUM/GOLD INDUSTRY WORKSHOPS

## **Enovis** Location: Room 2B, Level 3 - ICC Belfast **Pecaplasty®: the first percutaneous Bunion Correction Guide**

08:30-10:00	SESSION 1
08:30-9:30	Pecaplasty® presentation: 4th generation MIS hallux valgus correction: experimental technique to routine practice - an evidence based approach – Mr Robbie Ray Operative technique presentation – Dr Tristan Meusnier Q&A
9:30-10:00	Hands-on-workshop
10:00-12:00:	SESSION 2
10:00-11:00	Pecaplasty® presentation: 4th generation MIS hallux valgus correction: experimental technique to routine practice - an evidence based approach – Mr Robbie Ray Operative technique presentation – Dr Tristan Meusnier Q&A
11:00-12:00	Hands-on-workshop

## **Orthosolutions** Location: Room 2A, Level 3 - ICC Belfast **Evidence Based Foot & Ankle Solutions**

Workshop 1	
09:00am-10:15am	Putting evidence behind 3D printed, custom made implants in foot and ankle surgery Mr Jit Mangwani   Mr Roland Walker
Workshop 2	
10:30am-11:30am	The ever-continuing evolution of ankle fracture management, through the guidance of evidence and fragment-specific fixation – Mr Lyndon Mason

## **Stryker** Location: Room 1A, Level 3 – ICC Belfast **A Decade in Total Ankle Replacement Infinity at 10 in Ankle Replacement**

10:25	Welcome	Geraint Morris
10:30	Ankle Fusion vs Replacement	Mr Andrew Goldberg
10:45	Infinity Study & Results	Mr David Townshend
11:00	If Primaries Fail (Inbone/Invision)	Mr Ian Sharpe
11:15	My TAR Journey	Mr Sunil Dhar
11:30	Q&A, Case Discussions	Panel
11:55	Closing	Mo Oyetunji

# PLATINUM/GOLD INDUSTRY WORKSHOPS

## **Paragon 28** Location: Room 1B, Level 3 – ICC Belfast

08:30-10:00	Session 1: From Primary to Complex: Principles of Ankle Fracture Management Mr Lucky Jeyaseelan   Mr Karan Johal
10:00-12:30	Session 2: Ankle Arthrodesis: Modern Plate & Screw Fixation Techniques & Challenge Mr Chris Blundell   Mr Lucky Jeyaseelan

## **DePuy Synthes** Location: Room 3A, Level 3 – ICC Belfast

08:30am-12:00pm	“Starting MIS – a Cheilectomy journey” - Mr: Kumar Kunasingam Come and join us for ‘how to’ presentation delivered by Mr: Kumar Kunasingam consisting of interesting case presentations, interactive discussions and tips and tricks for MIS approach in Cheilectomy surgery
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## **Arthrex** Location: Room 3B, Level 3 – ICC Belfast

Cutting Edge Technology for Treatment of Insertional Achilles:

10:30	Workshop Begins
10:50	Live Demo - Open Achilles Speedbridge
11:10	Live Demo - MIS Achilles Speedbridge
12:00	Workshop Close Faculty: Mr: Tim Clough   Mr: John McKinley   Mr: Rhys Thomas
12:00-13:00	Lunch
12:15-12:45	Diversity in foot & ankle surgery Soap Box session@ BOFAS Stand (Hall 1))

Anna Chapman

# FACULTY BIOGRAPHIES



## Andrew Adair

Andrew Adair trained in Belfast and Melbourne and is an orthopaedic foot and ankle surgeon at The Ulster Hospital and Musgrave Park Hospital in Belfast. He has a Masters in Medical Education and enjoys his role as a T&O educational supervisor.



## Chris Bleakley

Dr Chris Bleakley qualified as a Physiotherapist in 2000 before completing his PhD at Ulster University. He subsequently held clinical and academic positions at: the Sports Institute of Northern Ireland; High Point University (North Carolina); and Ulster University. Dr Bleakley has delivered over 60 academic conference presentations and has published over 120 original research publications. He has published 6 book chapters, 3 international consensus statements on diagnosis and management of acute ankle sprain, and in 2011, was the lead author developing clinical guidelines on acute soft tissue injury management in collaboration with the Physios in Sport UK. He is a Fellow of the Higher Educational Academy, UK and enjoys teaching Research Methods to undergraduate and post graduate students. Dr Bleakley is currently a Professor in the School of Health Sciences at Ulster University.



## Jodie Breach

Since graduating, I have worked in a variety of orthopaedic and musculoskeletal settings in initially NHS and then private sectors.

I developed a keen interest in foot and ankle problems since working with elite dance students at Elmhurst Ballet School where these injuries were common.

Since being at the Nuffield, I have therefore fostered a strong link with our foot and ankle consultants to facilitate the best possible care for our patients and enjoy developing the foot service with them further. I have post graduate training in lower limb biomechanics and orthotic provision to aid recovery if required.

I also have training in vestibular rehabilitation from completing "The Balance Course" at Southampton University. This is a specialist treatment for people suffering with vertigo and dizziness that is not offered by all physiotherapists.

As well as working clinically, I am also the National Physiotherapy Lead for Nuffield Health. My role includes providing professional leadership for our physiotherapists and working with the wider Nuffield Health team to champion the impact that physiotherapy has. I am to ensure that all our physiotherapists are able to provide the best possible care for all their patients.



## James Calder

James Calder is a consultant orthopaedic surgeon at the Fortius Clinic London and Professor in the Department of Bioengineering, Imperial College.

He completed his Basic Surgical Training in London and the south coast of England. He was foot ankle Fellow to Dr Terry Saxby in Brisbane and was also awarded a travelling sports orthopaedic fellowship in the USA.

James is immediate past-chairman of ESSKA-AFAS and on the committee of the International Cartilage Research Society. He was Associate Editor for the Bone & Joint Journal and KSSTA Journal and has been Medical Adviser to Dance UK since 2012.

James is consultant advisor to UK Health Security Agency for elite sports and performing arts and chairs the sports committee for Department of Digital, Culture, Media & Sport.

## Carolyn Chadwick

Carolyn Chadwick graduated from Sheffield Medical school in 1998 and completed higher surgical training on the South Yorkshire rotation. She completed a one-year fellowship with Dr Terry Saxby in Brisbane and was appointed as a consultant orthopaedic surgeon and honorary clinical lecturer at Sheffield Teaching Hospitals in 2012. Carolyn was awarded a Young Consultant Travelling Fellowship in 2017 spending time with Dr Lew Schon in Baltimore with a particular interest in the treatment of Diabetic feet. She specialises in all conditions related to the Foot and Ankle in adults including complex trauma, hindfoot reconstruction and arthroplasty.

Carolyn has been the Clinical Lead for the Sheffield Foot and Ankle Unit since 2021 and continues to lead the well-established SFAU Fellowship, more recently she has been appointed deputy Clinical Director for elective orthopaedics. She is actively involved in research within SFAU having contributed to several NIHR funded studies. She teaches on regional and national courses and has been a regular faculty member on the Royal College of Surgeons FRCS Clinical course.

Carolyn was junior doctor lead for 7 years and is still actively involved in educational supervision, informal mentoring and running the junior doctor forum. She is delighted to have been invited to be part of the BOFAS Mentorship Scheme which started in 2023..



## Anna Chapman

Anna Chapman is a Consultant Trauma and Orthopaedic Surgeon at University Hospitals, Coventry and Warwickshire, with a specialist interest in Foot and Ankle surgery.

She qualified from Guy's, King's and St. Thomas's Hospitals School of Medicine in London and completed her Orthopaedic training on the Warwick rotation. She undertook Fellowship training in Bournemouth and Bristol, and was appointed as a Consultant in 2012.

She completed a Masters Degree in Medical Education at the University of Warwick in 2010 and continues to pursue her interest in all things educational. Anna is currently the Lead Training Programme Director for the West Midlands and is a member of the Specialist Advisory Committee. She has served two terms on the BOFAS Education Committee (2015-2023) and is currently the Lead for Equality, Diversity and Inclusion for BOFAS.



## Graham Chuter

Graham Chuter is a Consultant Orthopaedic Surgeon working in Darlington since 2012. He graduated from Dundee University, trained in the Northern Deanery and was selected for a specialist fellowship in Melbourne. One of three F&A surgeons in County Durham & Darlington Trust, he takes the lead in ankle arthroplasty and has been local PI for multicentre trials. His practice is elective adult foot & ankle and general and specialist trauma. He has been heavily involved in education and training throughout his medical career and is faculty on many national and international courses. Graham is serving his second term as a member of BOFAS Education Committee





### Callum Clark

Callum was educated in Bristol, studied medicine at Cambridge University and trained in Orthopaedics in London then a year on a travelling fellowship in Foot and Ankle Surgery and Sports injuries in Melbourne, Australia. On his return to the UK, he briefly worked as a Consultant at the RNOH, Stanmore before taking up his current Consultant post at Wexham Park and Heatherwood hospitals (now Frimley Health NHS Trust) in 2004.

His surgical interests include the treatment of arthritis (including ankle replacement), deformity correction and sports injuries. For the first 10 years of his consultant career, he also performed sports injury and arthritis knee surgery. He has an active involvement in research and education. He has published and presented both nationally and internationally. He is currently chairman of the Education Committee of the British Orthopaedic Foot and Ankle Society and regularly lectures locally and nationally. He has been a recognised Foot and Ankle surgical fellowship trainer since 2007. Callum has held a number of NHS and private sector leadership positions over the years and is currently Clinical lead for Foot and Ankle surgery at Frimley Health.

Callum also undertakes private practice in Windsor (Windsor Foot and Ankle Clinic) and London (Fortius clinic). He holds the MFSEM(UK) qualification as a member of the Faculty of Sports and Exercise Medicine. He lives in Ascot and has a wife, three children and lots of hobbies.

### Robert Clayton



Robert Clayton took up post as a Consultant Orthopaedic Foot & Ankle Surgeon in Fife in 2010. He has a highly specialised elective and trauma foot and ankle practice. He has an active role in postgraduate medical education and orthopaedic research. He has served on the BOFAS council as Director of Media and Communications since 2017, having previously served on the Scientific Committee for three years. He has served on faculty at numerous courses and conferences both for BOFAS and for other regional, national and international foot and ankle societies.

### Tim Clough



Tim Clough qualified from the University of St Andrews, Scotland and Manchester, completing his orthopaedic training in Canada with an International arthroscopy and sports medicine Fellowship. He is an NHS Consultant at Wrightington Hospital, where his practice consists of ankle arthroplasty and fusions, revisions, complex hindfoot surgery, forefoot reconstruction, sports injuries and arthroscopy.

Mr Clough has published across a range of foot and ankle conditions, is Clinical Supervisor and trainer to the Wrightington Fellow on BOA Orthopaedic Leadership programme, is an elected member of the Outcomes Committee of the British Orthopaedic Foot and Ankle Society, is recently appointed Editor-in-Chief of the journal 'The Foot', is a reviewer for the BJJ and FAI, has sat as External Examiner for the School of Medicine BMSc programme at the University of Dundee and is Honorary Senior Lecturer at the University of Salford.

### Paul Cool



Paul was appointed as a foot and ankle as well as an orthopaedic and oncological surgeon at the Robert Jones and Agnes Hunt Orthopaedic Hospital in Oswestry in 2000. He developed the tumour unit in Oswestry but continued to have an interest in foot and ankle surgery; particularly in the diagnosis of tumours, tumour like conditions and the surgical treatment of these conditions.

In 2019, Paul was appointed as professor at Keele University. His research interests include computer vision, machine learning, digital pathology and the genomic diagnosis of orthopaedic infection.

### Mark Davies

Since January 2006, Mark has been a Consultant Orthopaedic Surgeon at Sheffield University Teaching Hospitals, UK. He qualified from the University of Southampton in 1993 and undertook basic surgical training in London, Oxford and Swindon prior to commencing Orthopaedic training in Sheffield. He is both Fellowship trained in Limb Reconstruction techniques (Sheffield) and in elective Adult Foot & Ankle surgery (Brisbane). He is actively involved in implant design and has a specific interest in additive manufacturing processes for custom solutions. He has published extensively on many aspects of foot and ankle surgery. He is the current Honorary Secretary of British Orthopaedic Foot & Ankle Society (BOFAS) and a former Chairman of Sheffield Orthopaedics Ltd.

### Max Gibbons

Professor Max Gibbons is a Consultant Orthopaedic Surgeon and Specialist in Orthopaedic Oncology and hip and knee surgery. He was appointed to his current post at the Nuffield Orthopaedic Centre (NOC) in Oxford in 1996 and established the Sarcoma Unit at the NOC which is one of five units in the UK that has UK National Specialist Commissioning status for the treatment of bone sarcoma. Mr Gibbons trained at the University of Oxford and the London Hospital Medical College and following qualification undertook a Fellowship in surgery in Lyon, France and Orthopaedic Oncology Fellowships at Walter Reid Hospital in Washington and Mount Sinai Hospital in Toronto. In 2016 he was awarded a prestigious Hunterian Professorship by the Royal College of Surgeons of England for his research on the surgical treatment of sarcoma.

### Paul Halliwell

Paul Halliwell graduated from Guy's Hospital, London. His early training included Oxford, St. Thomas' and St. George's Hospitals, then Fellowship training at Great Ormond Street and in Toronto. He is consultant orthopaedic surgeon in Guildford, Surrey, specialising in conditions and trauma of the foot and ankle in both adults and children. He teaches at all grades from medical students to fellow consultants. He has been convenor and faculty on training courses in the UK and Europe including Surrey University cadaveric training courses and Ankle Replacement Courses.

Paul has been FRCS (Tr & Orth) examiner, previously served on the Education Committee helping develop the Principles Courses, and was Chair of the Outcomes Committee prior to being BOFAS President from 2022-23.

### Helen Higham

Helen is an Associate Professor in the Nuffield Department of Clinical Neurosciences at the University of Oxford, a Consultant Anaesthetist at the Oxford University Hospitals NHS Foundation Trust and Associate Dean for Simulation and Patient Safety at NHSE-Thames Valley.

She is the Director of OxSTaR, the University of Oxford's simulation and patient safety research centre, ([www.oxstar.ox.ac.uk](http://www.oxstar.ox.ac.uk)). Helen has led and supported many safety incident investigations in the NHS and has delivered national training programmes in systems-based incident investigation. She was a founding executive member and a past president of the Association for Simulated Practice in Healthcare in the UK and provides expert input for national committees in patient safety and human factors training, the Foundation Curriculum and the Safe Anaesthesia Liaison Group.

Her research interests include human factors applied to healthcare and clinical education using simulation and technology enhanced learning.





### Simon Hodkinson

I trained in London at St. Bartholomew's Hospital and then entered the Royal Navy on a short service commission. Deciding to stay I entered orthopaedic training in the Navy and spent time in Edinburgh and Leeds as part of my rotation as well as within the RN.

I spent 6 months flying on the HEMS service at the Royal London Hospital as one of the original three doctors. I accredited in 1995 taking up a consultant post in the RN, serving in Bosnia and the Gulf as a surgeon. In 1999 left the Navy and was appointed to a consultant post in Portsmouth, where I remain. I was trained very much as a general Orthopaedic surgeon but for the last 20 years have been almost purely foot and ankle. I have always had a strong interest in teaching and training and spent 8 years running the Wessex training programme in T&O as well as 5 years sitting on the Specialist Advisory Committee and 6 years on the selection design group delivering national selection for higher trainees in T&O.

I was elected to the Council of the BOA in 2017, followed by 2 years as the Honorary Secretary and then onto the Presidential line in 2021.

### MaCalus V. Hogan

MaCalus V. Hogan, MD, MBA, is a board-certified orthopaedic surgeon by the American Board of Orthopaedic Surgery. He obtained his undergraduate degree in Biochemistry from Xavier University of Louisiana where he was also a Howard Hughes Institute Scholar. He attended Howard University College of Medicine, where he completed his medical degree and then moved on to the University of Virginia Health System to complete his training in orthopaedic surgery with a research focus in Musculoskeletal Regenerative Engineering as NIH T32 fellow. Following residency, Dr. Hogan completed his foot and ankle fellowship at the Hospital for Special Surgery where he served as a consultant for the New York Ballet Company, American Ballet Theatre as well several professional and collegiate sport teams. Dr. Hogan also obtained his Executive Master of Business Administration (EMBA) from the University of Pittsburgh Katz School of Business. Currently, Dr. Hogan serves as the David Silver Professor and Chair of the UPMC Department of Orthopaedic Surgery and Chief of the UPMC Orthopaedic Surgery Service Line. Additionally, Dr. Hogan currently holds the position of director at the Foot and Ankle Injury Research (FAIR) group within the department of Orthopaedic Surgery.

He is a member of the American Academy of Orthopaedic Surgeons, the American Orthopaedic Association, the Orthopaedic Research Society, the International Society of Arthroscopy, Knee Surgery, and Orthopaedic Sports Medicine, the American Orthopaedic Foot & Ankle Society, and the J. Robert Gladden Orthopaedic Society the latter two of which he serves on the board of directors. Dr. Hogan has also made major contributions to the field of Orthopaedic Surgery through his research. During his residency, Dr. Hogan completed a Clinician Scientist fellowship at the National Institutes of Health (NIH). Since then, he has over 200 manuscripts, book chapters, and presentations both nationally and internationally.

In addition to his clinical and research practice, Dr. Hogan serves as a foot and ankle consultant for the athletic departments at the University of Pittsburgh, Carnegie Mellon University, Duquesne University, and Robert Morris University. He also serves as the assistant team physician for Point Park University, including the Conservatory of Performing Arts, Pittsburgh Ballet Theatre, Pittsburgh Penguins and Pittsburgh Steelers. He holds secondary appointments with the School of Engineering-Bioengineering, Clinical and Translational Science Institute (CTSI) and Katz Graduate School of business-International EMBA Program at the University of Pittsburgh.

### Sarah Johnson-Lynn

Sarah Johnson-Lynn is a Consultant Orthopaedic Foot and Ankle Surgeon at North Tees and Hartlepool NHS Trust, with interests in diabetic foot surgery and foot and ankle trauma. She graduated from Newcastle University and completed specialty orthopaedic training in the North East. Fellowships in foot and ankle surgery at Addenbrookes Hospital and in trauma and limb reconstruction at Leeds General Infirmary followed, as well as a British Orthopaedic Research Society travelling fellowship in Asia and Australia. She completed a PhD at Newcastle University, continues to lead clinical and qualitative research projects and teaches on the faculty of several national courses.



### Rajesh Kakwani

Rajesh Kakwani is a Consultant Orthopaedic Surgeon at Northumbria Healthcare NHS Trust. He specialises exclusively in Foot and ankle disorders including sports injuries.

He studied medicine and then did his post-graduation (Masters Degree) in Orthopaedics from the Mumbai University, India. He completed his MCh Orthopaedics degree from the University of Liverpool in 2006. He did his Higher Surgical Training from the Northern Deanery, gaining the FRCS (Orth) accreditation in 2012. He was fellowship trained in foot and ankle surgery at Bristol and Sheffield. He was awarded BOFAS Travelling fellowship to the Sigvard Hansen Foot and Ankle Unit, Seattle in 2014. He is and has been a Clinical and Educational Supervisor for the Orthopaedic Specialty Trainees and teaches in a variety of regional and national courses.

### Stephen Kearns

Professor Stephen R Kearns graduated with honours from the Royal College of Surgeons in Ireland in 1996. Having completed higher surgical training in Orthopaedics in Ireland, he completed fellowships in Adult Reconstructive Surgery in London Ontario and Foot & Ankle Surgery in Birmingham UK.

Research has always been a key area of interest and he has won a number of National and International prizes including the BORS and the EORS. No fewer than 110 of his research papers have been published in peer review journals, he has been cited over 2000 times. He has made over 250 presentations at National, European and International Meetings.

He currently holds the position of Consultant Orthopaedic Surgeon in Galway University Hospital and is an Associate Professor at the University of Galway. He founded the Foot & Ankle clinic in the Bon Secours Hospital in Renmore, Galway and now employs a number of Clinical Specialist Podiatrists in the clinic. He is heavily involved with the advancement of Foot and Ankle surgery in Ireland and is using and developing innovative products and techniques. He has designed hindfoot fusion implants currently used worldwide.

His current interest include: the clinical application of basic science research in the areas of cartilage injury and osteochondral reconstructive surgery. Other areas of expertise include lower limb joint fusion & replacement, tendon transplantation and reconstructive surgery.

### Adrian Kendal

Adrian Kendal is an Honorary Clinical Research Associate, Specialist Orthopaedic Surgeon with subspecialty interest in Foot and Ankle Reconstruction and Lecturer at Trinity College, Oxford.

Adrian's research aim is to understand the pathogenesis of chronic debilitating tendon disease. Tendon disease accounts for over 20% of primary care consultations and represents a growing healthcare challenge in an active and increasingly ageing population. Recognising critical cells involved in tendinopathy is essential in developing therapeutics to meet this challenge.

Adrian has applied combined single cell transcriptomics and surface proteomics to identify novel tendon cell sub-types in diseased and healthy human tendon. For the first time, he has shown that human tendon harbours multiple distinct COL1A1/2 expressing tenocyte populations in addition to endothelial cells, T-cells, and monocytes. Adrian is interested in the temporal-spatial interaction of particular tendon cell sub-types in the pathogenesis of chronic tendinopathy, for example pro-inflammatory PTX3 cells and signalling pathways.





### Paul Kirwan

Paul Kirwan is a chartered physiotherapist with 3 decades of clinical experience. He currently holds clinical and academic roles, as an assistant professor in Trinity College Dublin and as a clinical specialist physiotherapist in Connolly Hospital, Dublin where he runs a tendinopathy clinic. He is also a physiotherapist for Bohemian FC since 2013.

After graduating from TCD in 1994 with a BSc in Physiotherapy, he completed his MSc in Sports and Exercise Physiotherapy in 2009. He then completed his PhD in 2020 in the RCSI in the field of tendinopathy. He has taught at both undergraduate and post graduate level in the field of tendon pain and has received numerous national and international awards for his research.

Paul has been an invited speaker nationally and internationally and has published key papers in leading journals on the topic.



### Togay Koç

Togay Koç is a Consultant Trauma and Orthopaedic Surgeon with a specialist interest in Foot & Ankle Surgery at University Hospital Southampton NHS Foundation Trust. He qualified from Guy's, King's and St Thomas' Schools of Medicine in London before completing his orthopaedic training in the Wessex Deanery. He has been on Fellowships to Southampton, Oxford, Guildford and Frimley as well as a visiting Fellowship to the Harborview Medical Centre, Seattle, USA. He benefited greatly from the support he received from BOFAS during his training, fellowship and beyond including the BOA Future Leaders Programme. He is a member of the BOFAS Media and Communications Committee, co-opted to the Education Committee as Simulation Lead and Private Practice Working Group.



### Nilesh Makwana

Mr Nilesh Makwana, qualified from St George's Hospital Medical School, University of London in 1989. He completed his specialist training in the Trent region and was appointed Consultant Trauma & Orthopaedic surgeon at the Robert Jones & Agnes Hunt Orthopaedic Hospital, Shropshire and the Betsi Cadwaldr University Health Board (Wrexham Maelor Hospital) in 2001. Since 2016 he has been based solely at The Robert Jones and Agnes Hospital.

He is a Specialist Foot and Ankle Surgeon treating all conditions affecting the adult foot and ankle. He provides a tertiary service for complex forefoot, mid and hindfoot problems. He is one of few surgeons who undertakes Autologous Chondrocyte transplantation in the ankle in the UK.

He has been a Surgical Tutor for BCUHB (East) and Chair of The National Specialist Advisory Group for Wales. He has been a council member of the BOA and RSPA for North Wales. He is currently Surgical Tutor and Appraisal Lead at The Robert Jones and Agnes Hospital, Oswestry. He is the current Chair of the Clinical Practice Committee for BOFAS.



### Karan Malhotra

Karan Malhotra is a Consultant Orthopaedic Foot & Ankle Surgeon working at the Royal National Orthopaedic Hospital, Stanmore, UK. He graduated from Manchester with honours before beginning his core surgical and early registrar training in Yorkshire. He completed his registrar training on the Royal National Orthopaedic Hospital Training Rotation, London. He undertook a visiting fellowship in Singapore and formal Foot & Ankle Fellowships in Melbourne, and Stanmore.

He has a complex, tertiary practice with a special interest in neuromuscular foot and ankle disorders and complex deformity. He is the foot and ankle governance, and outcomes lead in his trust and is actively involved with research, medical education, and quality improvement. He is frequently invited to teach and lecture on courses and is an Honorary Associate Professor affiliated with the Department of Orthopaedics & Musculoskeletal Sciences at UCL.

He is a member of the BOFAS IT Committee and a co-opted member of the BOFAS Clinical Practice Committee. He has been one of the chief investigators on the UK-FALCON and UK-FATE trials. He is widely published, and his presented and published works have won numerous national and international prizes.

### Jit Mangwani

Jit Mangwani is a Consultant Orthopaedic Foot and Ankle Surgeon at the University Hospitals of Leicester. He is Honorary Secretary of the British Orthopaedic Foot and Ankle Society (BOFAS) and has served as Chair of the Scientific Committee, BOFAS (21-23). He has been a member of NJR research committee. He has led and completed the BOFAS James Lind Alliance Priority Setting Partnership (BOFAS JLA PSP) project. This national project has set up 'Top-10' research priorities in foot and ankle surgery in the UK. He has founded and chairs the research committee of the British Indian Orthopaedic Society.

He has a keen interest in medical research and education. He is chief investigator for several outcome studies on ankle fractures, Achilles tendon rupture and other foot and ankle conditions. He is principal investigator for several multi-centre national studies. He has been conferred the title of 'academic champion and honorary fellow' by the University of Leicester. He serves on the editorial board of several reputable orthopaedic journals. His contribution towards research in foot and ankle conditions has been recognised with several national and international prizes. He has published numerous articles in peer-reviewed journals and authored several chapters in books. He is passionate about medical education and is involved in both undergraduate and postgraduate teaching and training. He is regularly invited as a faculty to national and international courses and conferences. He is actively involved in the training and teaching of General Practitioners and Allied Health Professionals.

### Johnny McKenna

Johnny McKenna is an Orthopedic Surgeon based in Dublin, Ireland. He trained in Ireland before undertaking Fellowship training in Australia and has been practising full-time in Dublin since 2007. His speciality interest is in sports ankle surgery.

Working at the Sports Surgery Clinic, St. James Hospital, and Tallaght University Hospital, he provides care to a diverse range of patients. His focus extends from professional and semi-professional athletes to recreational individuals and those less inclined towards athleticism, enabling patients to return to their respective activities with confidence.

### Martin McNally MD FRCSEd FRCS(Orth)

Martin McNally is Honorary Consultant in Limb Reconstruction at the Oxford Bone Infection Unit in the Nuffield Orthopaedic Centre, Oxford University Hospitals and King James IV Professor at the Royal College of Surgeons of Edinburgh.

He has a particular interest in osteomyelitis, infected fractures and non-unions. He has published over 200 peer-reviewed papers, reviews and book chapters. His current research and clinical studies focus on diagnosis and treatment options together with assessment of outcomes and quality of life for infection patients. He has been a champion of multi-disciplinary working in bone infection. He is Past-President of the European Bone and Joint Infection Society (EBJIS) and the Girdlestone Orthopaedic Society. He is a member of the EFORT Scientific and Education Committees and Co-chair of the International Fracture-related Infection (FRI) Group.

### Paul Moroney

Paul Moroney graduated from University College Dublin in 1997 and completed specialist training on the Irish National Higher Surgical Training Scheme in Trauma & Orthopaedics. In 2008 he was awarded FRCS (Tr & Orth) and was entered in the Specialist Register of Orthopaedic Surgeons in 2010. Mr Moroney spent a year of fellowship training in Foot & Ankle Surgery in France (Grenoble & Lyon), Monaco (IM2S) and Switzerland (Liestal).

He is a past member of the Educational Committee and current member of the Alumni Group of the European Foot & Ankle Society (EFAS) and has hosted EFAS travelling fellows. Mr Moroney has been Consultant Foot & Ankle Orthopaedic Surgeon since 2012 in the Mater Misericordiae University Hospital, National Orthopaedic Hospital Cappagh and the Sports Surgery Clinic Santry in Dublin. His subspecialist interests include all forms of foot & ankle surgery, but particularly forefoot deformity correction, diabetic and neuropathic feet.





### James Munthali

James Munthali is a Senior Lecturer in Orthopaedics and Trauma Surgery in the Department of Surgery in the School of Medicine at the University of Zambia and an Honorary Consultant Orthopaedic Surgeon at the University Teaching Hospital in Lusaka. He is involved in teaching orthopaedic and trauma surgery, supervising research for orthopaedic and general surgery registrars and providing orthopaedic clinical care. His main research interests are trauma care – specifically surveillance, management systems and advocacy on a national, regional, and international level, surgical education and quality improvement.

He is currently the Panel Head for Orthopaedics at the College of Surgeons of East Central and Southern Africa (COSECSA), a 16-member Regional College. He also serves as Vice-Chair and member of the Board of Trustees of the Flying Specialist (FLYSPEC) Project a Not-for-profit organization that provides Orthopaedic and Plastic and Reconstruction surgery care to underserved parts of Zambia.



### Noel Napier

Noel, graduated from Queens University Belfast in 1996. He completed a Medical Fellowship in 1999 and subsequently entered Radiology. He completed his radiology training in the Northern Ireland training scheme in 2006. He completed a subspecialty fellowship in Musculoskeletal Radiology, spending time in Cappagh Orthopaedic Hospital in Dublin as well as Leeds. As a Consultant MSK Radiologist he previously worked in Musgrave Park Hospital in Belfast from 2007 until 2023. He now works exclusively in the independent sector, pursuing interests in Sport Injury imaging and rheumatology.



### Chris Pearce

Chris Pearce trained and worked in London before moving to Asia 12 years ago. He was the director of foot and ankle surgery and an Associate Professor at the National University Health System, Singapore until he set up Altius Clinic in May last year.

He is the current chairman of ESSKA-AFAS and a member of the Achilles tendon study group, the ankle cartilage repair society and the ankle instability group.



### Barbara Piclet-Legré

Barbara Piclet is a French MD as an Orthopedic and trauma surgeon, with an exclusive foot and ankle speciality. She works in private practice since 1992 in South of France (Marseille, la Ciotat) She created the first Foot Center with a podiatrist woman in Marseille in 2000 and they're now 4 women foot & ankle surgeons and 4 podiatrists with two foot & ankle centers.

In 2021, she received the American Orthopaedic Foot & Ankle Society (AOFAS) Women's Leadership Career Impact Awards President of AFCP/FFAS (Association Française de Chirurgie du Pied/French Foot & Ankle Society) affiliate to SOFCOT, validation referent for the university foot & ankle diploma (DIU) Teacher in MIFAS (Mini invasive Foot & Ankle society) Member of EFAS European Foot and Ankle Society)



### Anand Pillai

Anand Pillai trained in orthopaedic and foot surgery in the west of Scotland, and has undertaken further sub-specialist fellowships in Adelaide, South Australia and Oxford. He also visited and worked with surgeons from SportsMed SA, Mater Hospital Sydney and Sir Charles Gardiner Hospital in Perth.

Furthermore, He has completed a fellowship in Ilizarov techniques and limb deformity correction at the world renowned Russian Ilizarov Scientific Centre in Kurgan, Siberia. He was initially appointed as consultant to Ninewells University Hospital and Dundee Medical School in Scotland, before moving to the North West. Mr Pillai is currently a member of the EFAS research council & committee member of AOFAS. Foot & Ankle Speciality Lead for Greater Manchester Single Hospital Service. He has published and presented widely in numerous national and international meetings.

### Martin Raglan

Martin Raglan graduated from St. Georges Hospital Medical School, London, where he completed basic surgical training before moving to the East Midlands for his higher surgical training on the Nottingham Orthopedic rotation. He has completed fellowship in foot and ankle in Oxford at the Nuffield Orthopedic Centre and visiting fellowships with Dr Steve Haddad in North America at the Illinois Bone and Joint Institute, Chicago and Dr Lew Schon at the Medstar Memorial Hospital Baltimore. His current appointment is at Nottingham University NHS hospital where his practice consists of ankle arthroplasty, revisions, forefoot reconstruction, MIS surgery and sports and soft tissue management. He has set up and runs the regional network meeting and is enthusiastic in adopting new techniques and data collection in the goal of enhancing patient outcomes.

### Janardhan Rao

Mr Janardhan Rao is a consultant orthopaedic surgeon at the Countess of Chester Hospital. He has held the role of lead clinician for orthopaedics and has been the divisional surgical director.

He has an active interest in teaching and is an Honorary Lecturer at the University of Liverpool. He is a Regional Surgical Advisor for the Royal College of Surgeons of Edinburgh. Mr Rao is Chief Examiner for the Intercollegiate Examination in Orthopaedics, both Nationally and Internationally.

As a trainee, he was fortunate to be appointed onto the Cambridge Training Program. Mr Rao originally gained a place to study Medicine in the University of St Andrews, 40 years ago. His schooling was at Bootham, a Quaker school in York. He is happily married with two children working in Australia and New Zealand.

### James Ritchie

James has studied Medicine at Guy's & St Thomas's Medical Schools, History at UCL and Epicureanism anywhere he can find it. He has practised Orthopaedic Foot and Ankle Surgery in Royal Tunbridge Wells since 2005 and being variously described as a "fine surgeon and teacher", "the fat bloke with the six kids" and "a whore to middle-class women's footwear".

Since 2021 James has sat on the EFAS Council where he has promoted both a modernising agenda and a spirit of sibling fellowship, although it's hard to get anyone to be friends with the Russians.

His shy, retiring nature being unrecognised by his Scientific Committee colleagues, James both organises and hosts the BOFAS Virtual Journal Club. The role has led him not only to being dubbed 'BOFAS'S Laura Kuenssberg', but also into hot water when, searching for topics, he mis-typed 'long bone' into Google, thus generating a deluge of unsavoury images. Despite this minor setback James is persevering with his quest for academic novelty in the hope that "Foot Fetishes: Freaky or Fun?" and "Sexual Deviancy in the Medieval Church: Lessons For Modern Life?" will soon be approved for journal Club by the BOFAS censors.

### Veronica Roberts

Veronica Roberts graduated from University of Leicester in 2001. After completing her Basic Surgical Training rotation in Merseyside and a period of research Veronica returned to East Midlands (South) deanery to complete her Higher Surgical Training rotation in Trauma and Orthopaedic Surgery. Having successfully completed the FRCS (Trauma & Orthopaedics) examination in 2015 Veronica then undertook her fellowship in Sheffield, UK. Veronica was appointed a Consultant in the Southern Trust, Northern Ireland, in 2017. Her subspecialist surgical interests include complex foot and ankle trauma management, arthroscopic surgery, and the management of neuromuscular deformities in adults.

Outside of Foot and Ankle surgery Veronica enjoys sports. Presently she is training to compete in numerous triathlons, and only wishes she was more buoyant than a concrete block to help her ambitions in this sport.





### Sean Savage

Sean Savage is a Specialist in Podiatric Sports Medicine. He qualified from QUB and has Post Graduate Qualifications from QMUE and has recently attained a Post Graduate Qualification in Podiatric Sports Medicine from QMUL. This qualification makes Sean one of only a few Sports Podiatrists in the UK. He is one of the few Podiatrists in the UK with a formal qualification in Diagnostic Ultrasound and has CASE Accreditation. Sean has previous experience lecturing at The NI School of Podiatry in UUJ and currently Lectures Nationally and Internationally to The Podiatric and Orthopedic Professions. He is also an Associate Clinical Lecturer in Brunel University London on the Post Grad Cert in Diagnostic Ultrasound Sean delivers his expertise to all members of the public including elite and semi elite individuals from the sporting community and offers a Podiatry Service to The Senior Northern Ireland Soccer Team.



### Andrea Sott

After graduating from medical school in Germany Miss Sott subsequently completed 10 years of basic and higher Surgical Orthopaedic Training in London. In 2004 Miss Sott joined Epsom & St Helier University Hospital NHS Trust/ London as a Consultant Surgeon for Trauma & Orthopaedics and Foot & Ankle Surgery. She maintains a GMC portfolio as an active and enthusiastic Trainer for Surgeons and Allied Professionals. She is Senior Examiner for the JCIE, previous Surgical Tutor and current AAC panel member for the Royal College of Surgeons. She has published many papers in her field and outcomes of her Foot and Ankle work has been presented at BOA/ BOFAS as well as EFORT Meetings. She is host to a successful BOA FLP/ BOFAS post CCT fellowship since 2015as well as invited faculty for BOFAS and BOA on several occasions.



### Hiro Tanaka

Hiro Tanaka is a consultant orthopaedic surgeon in Newport, South Wales. He is passionate about improving the quality of surgical training and promoting clinical leadership in the NHS. He designed the BOFAS Principles Course on behalf of the Education Committee in 2010 and continues to be a member of the committee. He is Honorary Secretary of the BOA and is an examiner for the FRCS (Orth).

Hiro is currently serving his second term as BOFAS Honorary Treasurer.



### Dave Townshend

Dave Townshend was appointed as a Consultant Foot and Ankle Trauma and Orthopaedic Surgeon in the Northumbria NHS Healthcare Trust in 2010. Born in Edinburgh, he trained in the North East of England with a research fellowship at the University of Otago, New Zealand and Foot and Ankle Limb Reconstruction fellowship at the University of British Columbia, Canada.

Dave is the current Chair of the BOFAS Scientific Committee, Clinical Director of Research and Development in the Northumbria Trust and Honorary Senior Lecturer University of Newcastle upon Tyne.



### Krishna Vemulapalli

Krishna graduated from India and completed his Higher Surgical Training from The Royal London Hospital and Percival Potts Rotation before his appointment as a Consultant Orthopaedics Surgeon at Barking Havering & Redbridge University Hospitals NHS Trust (BHRUT). He specialises in Foot and Ankle surgery and Orthopaedic surgery for Children. He is also Honorary Senior Lecturer at Queen Mary University, London. He is passionate about teaching and was instrumental in getting the Queens Hospital 'Training Hospital of the Year 2014' and 2nd runner-up in 2020 for Orthopaedics. Krishna is a member of the BOFAS Education Committee.

### David Warnock

Following completion of under-graduate and post-graduate training in Northern Ireland, I undertook specialist fellowship training at The Royal Orthopaedic Hospital, Birmingham and the Royal Infirmary of Edinburgh before taking up a Consultant post based at Musgrave Park Hospital, Belfast, in 2003. My practice includes orthopaedic oncology, hip and knee arthroplasty. I am currently lead clinician for the NI Regional Bone Tumour Service, Chair of the NI Regional Orthopaedic and Trauma Committee and member of BOA Council.



### Matt Welck

Matt Welck graduated from Leeds University Medical School in 2002. His orthopaedic training was on the Stanmore rotation and his specialist foot and ankle fellowships included 6 months in Windsor, then 6 months at the Foot and Ankle unit at the Royal National Orthopaedic Hospital. He then undertook a combined clinical and research fellowship at the Foot and Ankle Institute, Baltimore, USA under Dr Mark Myerson. He has been a consultant at the Royal National Orthopaedic Hospital since July 2016. His specialist interests are in neuromuscular foot and ankle disorders and complex hindfoot deformity. His research interests include the use of weight bearing CT scanning in foot and ankle surgery. He is a member of the BOFAS education committee.



### Alistair Wilson

I am currently IOFAS president. I was a consultant foot and ankle surgeon in the BHSCT from 2003 until the end of 2023. Fellowship trained in Melbourne under Mark Blackney. I remain committed to foot and ankle learning.



### Andrew Wines

Dr Andrew Wines specialises in reconstructive surgery of the foot and ankle in adults and children. He obtained his MBBS from the University of Sydney in 1994 and was awarded his fellowship in orthopaedic surgery from the Royal Australasian College of Surgeons in 2002. He subsequently travelled to Dublin and Bristol for sub-specialty training in paediatric and adult foot and ankle surgery with Michael Stephens and Ian Winson.

He holds appointments at public and private hospitals on Sydney's North Shore, is the director of the Sydney Orthopaedic Foot and Research Institute and a partner of the North Sydney Orthopaedic and Sports Medicine Centre.

He is a Churchill Fellow and President of the Medical Benevolent Association of NSW. He the treasurer and a director of the Australian Orthopaedic Association, and the foundation treasurer of the International Orthopaedic Diversity Alliance. He is the member of the board of Knox Grammar School.

His very tolerant and thoroughly lovely wife is an anaesthetist. He has 2 children, a daughter aged 20 who wishes to become a foot and ankle orthopaedic surgeon and a son aged 18 who does not.



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# B&FAS PROGRAMMES

# DAY 1: WEDNESDAY 6TH MARCH 2024

Time	Event	Speaker
08:00-08:45	Registration	
08:45-09:00	Welcome	Rick Brown BOFAS President
09:00-10:45	<b>INSTRUCTIONAL 1 - GETTING IT RIGHT SECOND TIME: PART 1 THE FOREFOOT</b> <i>Chairs: Howard Davies / Alistair Wilson</i> <i>"How to sort out problems after primary forefoot surgery"</i>	
09:00-09:10	Transfer Metatarsalgia after First Ray Surgery	Robert Clayton
09:10-09:20	First MTP Malunion – How Bad is Bad?	Sarah Johnson-Lynn
09:20-09:30	Hallux Malrotation Deformity After First Ray Surgery	Matthew Welck
09:30-09:40	First Ray Adjacent Joint Arthritis	James Ritchie
09:40-09:50	Revision Options After a Failed MTP Arthroplasty	Nilesh Makwana
09:50-10:05	Questions/discussion	
10:05-10:25	<b>THE MAUD FORRESTER-BROWN LECTURE</b> <i>The Problems after MIS Forefoot Surgery and the Solutions</i> <i>Barbara Piclet Legré</i> <i>President French Foot &amp; Ankle Society</i>	
	<i>Chair: James Ritchie</i>	
10:25-10:45	Questions/discussion	
10:45-11:15	Coffee/Tea - Hall 1 (Exhibition area)	
11:15-11:40	<b>KEYNOTE LECTURE 2</b> <i>Orthobiologics in Foot and Ankle Surgery...Hype, Reality, and The Unknown</i> <i>Professor MaCalus V Hogan, Pittsburgh, USA</i> <i>Chair: Graham Chuter</i>	
11:45-13:00	<b>FREE PAPER 1</b> <i>Chairs: Devendra Mahadevan / Jasdeep Giddie</i>	
13:00-14:00	Lunch - Hall 1 (Exhibition area)	
13.15-13.45	Starting Private Practice & Medical Indemnity Soap Box session @BOFAS Stand	R Clayton/T Clough

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# DAY 1: WEDNESDAY 6TH MARCH 2024

Time	Event	Speaker
14:00-15:15	<b>INSTRUCTIONAL 2 – TRAINING F&amp;A SURGEONS OF THE FUTURE</b> <i>Chairs: Hiro Tanaka / Ryan Moffatt</i>	
14:00-14:12	The Future of F&A Surgery in the FRCS Orth	Jarnardhan Rao
14:12-14:24	The Cutting Edge of Simulation Training	Professor Helen Higham
14:24-14:36	Virtual Reality Training in Foot and Ankle	Togay Koç
14:36-14:48	The Philosophy of BOFAS Courses	Callum Clark
14:48-15:00	Teaching Orthopaedic Surgery to an Entire Continent	James Munthali
15:00-15:15	Questions/discussion	
15:15- 15:45	Coffee/Tea - Hall 1 (Exhibition area)	
15:15-15:45	Women in Foot & Ankle Meet up @The Poster Point	Annabel Hayward
15:45-17:00	<b>INSTRUCTIONAL 3 – SPORTS TECHNIQUES FROM ACROSS THE WORLD</b> <i>Chairs: Callum Clark /Stephen Kearns</i>	
15:45-16:00	Is Arthroscopic Brostrom as Good as Open but Much Less Hassle? Chris Pearce, Singapore	
16:00-16:15	My Approach to Multi-Ligament Ankle Instability	Andrew Wines, Sydney
16:15-16:30	Osteochondral Lesions of the Talus in the Adolescent Athlete What We See, What We Do, and What We Hope For	MaCalus Hogan, Pittsburgh
16:30-16:45	Management of Achilles Tendon rupture in “weekend warriors”	Johnny McKenna, Dublin
16:45-17:00	Snapping peroneal tendons with and without tears	James Calder, London
17:00-17:15	Questions/discussion	
17:15-17:30	<b>KEYNOTE LECTURE 3</b> How The BOA & BOFAS Can Work Together in the Future <i>Chair: Rajesh Kakwani</i>	Simon Hodgkinson BOA President
17:10-17:50	<b>KEYNOTE LECTURE 4</b> Optimizing Outcomes In Bone Infection <i>Chair: Rajesh Kakwani</i>	Professor Martin McNally University of Oxford
17:30-17:45	Questions/discussion	
18:00-19:00	Poster Presentation / viewing Drinks Reception & Networking – Hall 1 (Exhibition Hall)	

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# DAY 2: THURSDAY 7TH MARCH 2024

Time	Event	Speaker
08:00-08:45	Registration	
<b>MAIN AUDITORIUM</b>		
<b>SESSION 1 HOT TOPIC UPDATE SESSION</b>		
<i>Chairs: Verity Currall / Jim Carmichael</i>		
09:00-09:12	The Four BOASTs for Ankle Arthritis	Martin Raglan
09:12-09:22	Why Regulation Matters in Orthopaedic and Podiatric Foot Surgery	Paul Halliwell
09:22-09:30	The Editor's Vision for "The Foot" Journal	Tim Clough
09:30-09:45	How BOFAS is Addressing Equity, Diversity & Inclusion	Anna Chapman
09:50-10:30	<b>The Foot &amp; Ankle Ryder Solheim Cup</b> Five Case "Controversies" with an audience vote <i>Chairs: James Ritchie / Charline Roslee</i>	
Captains:	Rest of the World: Andrew Wines (Australia) Chris Pearce (Singapore) MaCalus Hogan (USA) James Munthali (Zambia) Krishna Vemulapalli (India)	Europe : Mark B Davies (UK) Andrew Adair (Northern Ireland) Yves Tourné (France) Andrea Sott (Germany) Barbara Piclet Legré ( France)
10:30-11:00	Coffee/Tea	
10:30-11:00	BOFAS Mentorship Programme Meet up @BOFAS Stand (Hall 1)	Jane Madeley
10:30-13:00	Fellows Fair – "meet the Fellowship Trainers" @ Poster Point	
<b>SESSION 2 AHP MEETING (HALL 1D)</b>		<b>EDUCATION COMMITTEE</b>
09:00-10:30	Chronic Ankle Instability	
11:00-12:00	The Surgery for Chronic Ankle Instability	
<b>SESSION 3 ACADEMIC FORUM (STUDIO)</b>		<b>SCIENTIFIC COMMITTEE</b>
09:00-10:30	Registrar/Fellows Academic Forum	
<b>SESSION 4</b>		
11:00-12:00	Registrars/Fellows Session (Studio) Limited 16 places Patient Safety and Human Factors Session	Professor Helen Higham

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# DAY 2: THURSDAY 7TH MARCH 2024

Time	Item	Speaker
<b>SESSION 5</b> 08:30-12:00	<b>INDUSTRY WORKSHOPS</b> Industry Workshops	
<b>SESSION 6</b>		
12:45-14:50	AGM - Full members only	Main Auditorium
<b>SESSION 7 AHP MEETING (HALL 1D)</b>		<b>EDUCATION COMMITTEE</b>
13:00-13:45	Complex Case Discussions	
13:45-14:45	Inflammatory Foot & Ankle Problems	
<b>SESSION 8 REGISTRARS/FELLOWS SESSION (STUDIO)</b>		<b>EDUCATION COMMITTEE</b>
13:00-14:45	Recent Advances: Life as a New Consultant	
14:50-15:25	Coffee/Tea (Hall 1)	
14:50-15:20	International Medical Graduates in Foot & Ankle Meet up @The Poster Point	Melwyn Pereira
<b>MAIN AUDITORIUM</b>		
15:25-16:10	Free Papers 2 <i>Chairs: Sarah Lynn-Johnson / Paul Moroney</i>	
16:15-16:35	<b>HISTORY OF SURGERY LECTURE: A WALK ON THE WILDE SIDE</b> <i>Chair: Vivek Dhukaram</i>	James Ritchie
16:40-18:05	<b>INSTRUCTIONAL 4 – FOOT AND ANKLE TUMOURS</b> Chairs: Nick Cullen / Hari Prem	
16:40-16:48	Epidemiology of Foot and Ankle Tumours	Professor Paul Cool, Oswestry
16:48-17:00	Radiology of Foot and Ankle Tumours	Noel Napier, Belfast
17:00-17:12	Bad Benign Tumours	Dave Warnock, Belfast
17:12-17:28	Malignant Tumours	Professor Paul Cool, Oswestry
17:28-17:40	How to Avoid Being Sued Over a Tumour in the Foot	Professor Max Gibbons, Oxford
17:40-17:55	Questions/discussion	
19:30-23:30	Gala Dinner, Belfast City Hall	

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# DAY 2: AHP PROGRAMME

## THURSDAY 7TH MARCH 2023

HALL 1D, ICC BELFAST

Time	Event	Speaker
08:00-08:45	Registration	

### SESSION 1 CHRONIC ANKLE INSTABILITY

Chair: Jodie Breach / Rajesh Kakwani

09:05-09:15	Introduction	Jodi Breach
09:15-09:25	Pathophysiology and epidemiology of chronic ankle instability	Graham Chuter
09:25-09:40	Imaging of chronic ankle instability	Veronica Roberts
09:40-10:20	Physiotherapy management of chronic ankle instability	Chris Bleakley
10:00-10:20	Orthotic management of chronic ankle instability	Sean Savage
10:20-10:30	Discussion	
10:30-11:00	Coffee/Tea (Hall 1)	

### SESSION 2 THE SURGERY FOR CHRONIC ANKLE INSTABILITY

Chair: Professor Ruairi MacNiocaill / Paul Kirwan

11:00-11:25	The surgical assessment & management of chronic ankle instability	Yves Tourné
11:25-11:45	Chronic ankle instability with OCD talus	Johnny McKenna
11:45-12:00	Discussion	

12:00-13:00 Lunch Hall 1 (in main exhibition room)

### 13:00-13:30 Complex Case Discussion

Chair: Andrew Wines / Jodie Breach

Panel: Yves Tourné / Johnny McKenna / Paul Kirwan / Rajesh Kakwani

### Inflammatory Foot & Ankle Problems

13:45-14:00	Inflammatory conditions masquerading as tendinopathies	Paul Kirwan
14:00-14:15	Peri-operative management of disease modifying agents in inflammatory arthropathies	Rajesh Kakwani
14:15-14:30	Surgical management of rheumatoid forefoot	Paul Moroney
14:30-14:45	Discussion	
14:45	Close return to main (plenary Hall 2)	

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# ACADEMIC FORUM

## THURSDAY 7TH MARCH 2023

STUDIO, ICC BELFAST

Time	Event	Speaker
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08:00-08:45 Registration

### Scientific Session 1: Academic Forum (Studio)

Chairs: Sarah Johnson-Lynn / Dave Townshend

09:00-09:30	Why I chose a career in Academic Orthopaedics	Professor MaCalus Hogan
09:30-09:50	UK-FATE the inside track and how to set up a national collaborative	Karan Malhotra
09:55-10:10	How the NIHR can help your Research	Dave Townshend
10:10-10:30	Questions and Discussion	

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# FELLOWS & REGISTRARS PROGRAMME

## THURSDAY 7TH MARCH 2023

### STUDIO, ICC BELFAST

Time	Event	Speaker
08:00-08:45	Registration	

### Scientific Session Academic Forum (Studio)

10:30-11:00	Coffee/Tea (Hall 1)	
10:30-11:00	BOFAS Mentorship Programme Meet up @BOFAS Stand (Hall 1)	Jane Madeley
10:30-13:00	Fellows Fair – “meet the Fellowship Trainers” @ Poster Point	
11:00-12:00	<b>Patient Safety &amp; Human Factors Workshop (Studio)</b> Professor Helen Higham (Pre-book only 16 places) “Safer Foot & Ankle Surgery – excising the blame culture “	
12:00-13:00	Lunch	
12:15-12:45	Diversity in foot & ankle surgery: Soap Box session@ BOFAS Stand (Hall 1)	Anna Chapman
13:00-14:05	<b>Recent Advances</b> Chairs: Dessie Gibson / Prashant Singh	
13:00-13:05	Malawi Fellowship Experience	Ashanka Wijendra
13:05-13:20	Indications, Contraindications + Tips & Tricks of Lapidus procedure	Dessie Gibson
13:20-13:35	Recent advances in Heel Pain (Achilles tendinitis, Plantar Fasciitis, Tarsal tunnel)	Andrew Wines
13:35-13:50	Management of 4th & 5th TMT joint Arthritis	Adrian Kendal
13:50-14:05	Role of Deltoid Repair in Acute Trauma	Chris Pearce
14:10-14:45	<b>Life as a New Consultant</b>	
14:10-14:25	How to be an Effective Leader	Alistair Wilson
14:25-14:40	Burnout in Surgeons: Walk it Off!	Janardhan Rao
14:45	Close and return to main plenary Hall 2)	
14:45-15:25	Coffee/Tea (Hall 1)	
14:50-15:20	International Medical Graduates in Foot & Ankle Meet up @The Poster Point	Melwyn Pereira

# DAY 3: FRIDAY 8TH MARCH 2024

Time	Event	Speaker
08:30-09:00	Registration	

### MAIN AUDITORIUM

09:00-10:15	Free Papers 3 Chairs: Toby Jennison / Hannah Bradman	
10:15-10:40	<b>KEYNOTE LECTURE 5</b> The Burden of Foot & Ankle Trauma in Africa Chair: Paul Cooke	James Munthali, Zambia
10:45-11:50	<b>INSTRUCTIONAL 5 - “MISSED INJURIES OF THE FOOT“</b> Chairs: Mark B Davies / Gary Colleary	
10:45-10:55	Open or Arthroscopic FHL augment after Chronic Achilles Rupture	Carolyn Chadwick
10:55-11:05	Anterior Tendon Ruptures (Tib Ant & EHL)	Anand Pillai
11:05-11:15	When to Fix a Lateral Process Fracture of the Talus	Alistair Wilson
11:15-11:30	Update on Lis franc Injuries	Jit Mangwani
11:30-11:40	The Chronic Turf Toe	Steve Kearns
11:40-11:50	Questions/discussion	
11:50-12:20	Brunch/Coffee/Tea - Hall 1 (Exhibition area)	
12:20-13:20	<b>SURGICAL TRICKS TO TAKE BACK HOME</b> Chair: Krishna Vemulapalli / Tim Williams	
12:25-12:30	Look like a hero whilst removing stripped screws	
12:30-12:35	Soft tissue Lisfranc reconstruction using suture tape construct	Karan Malhotra
12:35-12:40	Teaching over lunch: Carrot osteotomy	Edward Gee
12:40-12:45	Tips for positioning patients for percutaneous forefoot surgery	Srisankandarasa Senthilkumaran
12:45-12:50	Use of an Endotracheal tube to facilitate filling of the tibial medullary cavity with antibiotic beads following removal of an infected hindfoot nail	Robbie Ray
12:50-12:55	Technique of lateral column lengthening + Medial shift calcaneal osteotomy with Bone grafting through single incision	Adrian Kendal
12:55-13:00	Tips to avoid screw malposition in arthroscopic ankle arthrodesis Tendon Transfer surgery-a novel and simple technique to pass and tension the tendon in the bone tunnel	Vivek Dhukaram
13:00-13:05	Tibialis posterior tendon transfer for foot drop	Howard Tribe
13:05-13:10	Lock down technique for osteoporotic or revision	Andrea Nicholas
13:10-13:15	Calcaneal avulsion fractures	Karan Malhotra
13:20-13:40	Prizes and Presidential Handover	Lyndon Mason
13:40	Meeting end	
13:45-15:15	Learn before you Fly – Arthrex MIS Bunion Masterclass Workshop begins   14:30 Live Demo – MIS Bunionelectomy System   15:15 Workshop Close Faculty: Mr Edward Gee   Mr Lloyd Williams	

Contact Rebecca Mayer for further information and to book your place! Rebecca.Mayer@arthrex.co.uk



## From Primary to Complex: Principles of Ankle Fracture Management

Thursday, March 7<sup>th</sup> 2024 | 08:30 - 10:00

Room 1B ICC Belfast BOFAS

Please join us to explore and discuss the various challenges to ankle fracture management.

We will be highlighting best practice techniques with multiple fracture pathologies as well as soft tissue considerations. There will be clinical discussions, case study presentations as well as a practical sawbone session.

### FACULTY

Mr Lucky Jeyaseelan and Mr Karan Johal



## Ankle Arthrodesis: Modern Plate & Screw Fixation Techniques & Challenges

Thursday, March 7<sup>th</sup> 2024 | 10:00 - 12:30

Room 1B ICC Belfast BOFAS

Please join us to explore and discuss the various challenges to ankle arthrodesis management.

We will be highlighting best practice techniques with ankle arthrodesis. There will be clinical discussions, case study presentations as well as a practical sawbone session.

### FACULTY

Mr Chris Blundell and Mr Lucky Jeyaseelan



# BOFAS

## FREE PAPERS ABSTRACT SUMMARY

# FREE PAPERS 1

Wednesday 6th March

## FP1

### Minimally invasive surgery versus conservative treatment for displaced intra-articular calcaneal fractures: A prospective propensity score matched cohort study with 2 year follow up

R. Ahluwalia<sup>1</sup>, T. Lewis<sup>1</sup>, O. Musbahi<sup>1</sup>, I. Reichert<sup>1</sup>

<sup>1</sup>King's College Hospital NHS Foundation Trust, Trauma and Orthopaedics, London, United Kingdom

## FP2

### The Fracture Ankle Implant Review (FAIR) Study: A national multicentre retrospective review of implants, fixation methods and outcomes in fibula fixation in ankle fractures

W. Fishley<sup>1,2</sup>, R. Morrison<sup>1</sup>, T. Baldock<sup>1</sup>, A. Hilley<sup>3</sup>, - FAIR Collaborative<sup>4</sup>, - CORNET<sup>5</sup>, P. Baker<sup>6</sup>, D. Townshend<sup>1</sup>

<sup>1</sup>Northumbria Healthcare NHS Foundation Trust, Trauma and Orthopaedics, Northumbria, United Kingdom

<sup>2</sup>University of York, York, United Kingdom

<sup>3</sup>Newcastle-Upon-Tyne Hospitals NHS Foundation Trust, Trauma and Orthopaedics, Newcastle-Upon-Tyne, United Kingdom

<sup>4</sup>Fracture Ankle Implant Review (FAIR) Collaborative, -, United Kingdom

<sup>5</sup>Collaborative Orthopaedic Research Network (CORNET), North East, United Kingdom

<sup>6</sup>South Tees Hospitals NHS Foundation Trust, Trauma and Orthopaedics, Middlesbrough, United Kingdom

## FP3

### Deltoid ligament reconstruction in ankle fractures – does it prevent pes planus?

J. Aamir<sup>1</sup>, T. Huxley<sup>1</sup>, M. Clarke<sup>1</sup>, N. Dalal<sup>1</sup>, A. Johnston<sup>1</sup>, D. Rigkos<sup>1</sup>, J. Kutty<sup>1</sup>, C. Gunn<sup>1</sup>, C. Condurache<sup>1</sup>, D. McKeever<sup>1</sup>, A. Gomaa<sup>1</sup>, L. Mason<sup>1,2</sup>

<sup>1</sup>Liverpool University Hospitals NHS Foundation Trust, Liverpool Orthopaedic and Trauma Service, Liverpool, United Kingdom,

<sup>2</sup>University of Liverpool, Institute of Health and Ageing, Liverpool, United Kingdom

## FP4

### Medial Malleolus: Operative Or Non-operative (MOON): A randomised clinical trial of operative versus non-operative management of associated medial malleolus fractures in unstable ankle fracture dislocations

T. Carter<sup>1</sup>, W. Oliver<sup>1</sup>, K. Bell<sup>1</sup>, C. Graham<sup>2</sup>, A.D. Duckworth<sup>1,3</sup>, T. White<sup>1</sup>, N. Heinz<sup>1</sup>

<sup>1</sup>Edinburgh Orthopaedic Trauma, Royal Infirmary of Edinburgh, Edinburgh, United Kingdom

<sup>2</sup>Edinburgh Clinical Research Facility, Edinburgh, United Kingdom

<sup>3</sup>University of Edinburgh, Centre for Population Health Sciences, Edinburgh, United Kingdom

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## FP5

### Evaluating the utility of plain radiograph and computerised tomography scanning in identifying concomitant foot fractures in patients with unstable ILsfranc injuries

J. Aamir<sup>1</sup>, R. Caldwell<sup>1</sup>, D. Karthikappallil<sup>1</sup>, H. Tanaka<sup>2</sup>, M. Elbannan<sup>2</sup>, L. Mason<sup>1,3</sup>

<sup>1</sup>Liverpool University Hospitals NHS Foundation Trust, Liverpool Orthopaedic and Trauma Service, Liverpool, United Kingdom

<sup>2</sup>Aneurin Bevan University NHS Trust, Newport, United Kingdom

<sup>3</sup>University of Liverpool, Institute of Health and Ageing, Liverpool, United Kingdom

## FP6

### Surgical management of complex ankle fractures in patients with diabetes: a national retrospective multicentre study

R. Ahluwalia<sup>1</sup>, C. Wek<sup>1</sup>, T. Lewis<sup>1</sup>, T. Stringfellow<sup>1</sup>, D. Coffey<sup>1</sup>, S.T. Ping<sup>1</sup>, M. Edmonds<sup>1</sup>, I. Reichert<sup>1</sup>,

HARnT Collaborative

<sup>1</sup>King's College Hospital NHS Foundation Trust, Trauma and Orthopaedics, London, United Kingdom

## FP8

### Long term outcomes of a randomized control trial comparing fibular nail with open reduction and internal fixation in patients with unstable ankle fractures

N. Heinz<sup>1</sup>, K. Bugler<sup>1</sup>, N. Clement<sup>2</sup>, X. Low<sup>1</sup>, A. Duckworth<sup>1,3</sup>, T. White<sup>1</sup>

<sup>1</sup>Edinburgh Orthopaedic Trauma, Royal Infirmary of Edinburgh, Edinburgh, United Kingdom

<sup>2</sup>Edinburgh Orthopaedics, Royal Infirmary of Edinburgh, Edinburgh, United Kingdom

<sup>3</sup>University of Edinburgh, Centre for Population Health Sciences, Edinburgh, United Kingdom

## FP9

### A morphological review of medial malleolar fractures – Are there any factors which may predispose to nonunion and malunion?

J. Aamir<sup>1</sup>, R. Caldwell<sup>2</sup>, S. Long<sup>1</sup>, S. Sreenivasan<sup>1</sup>, J. Mayrotas<sup>1</sup>, A. Panera<sup>1</sup>, S. Jeevaresan<sup>1</sup>, L. Mason<sup>1,3</sup>

<sup>1</sup>Liverpool University Hospitals NHS Foundation Trust, Liverpool Orthopaedic and Trauma Service, Liverpool, United Kingdom,

<sup>2</sup>Aneurin Bevan University NHS Trust, Newport, United Kingdom

<sup>3</sup>University of Liverpool, Institute of Health and Ageing, Liverpool, United Kingdom

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## FREE PAPERS 2

Thursday 7th March

### FP10

#### The incidence of VTE in foot and ankle surgery in the UK - UK Foot and Ankle Thrombo-Embolism Audit (UK-FATE)

L. Mason<sup>1,2</sup>, J. Mangwani<sup>3</sup>, K. Malhotra<sup>4</sup>, L. Houchen-Woloff<sup>3</sup>

<sup>1</sup>Liverpool University Hospitals NHS Foundation Trust, Liverpool Orthopaedic and Trauma Service, Liverpool, United Kingdom,

<sup>2</sup>University of Liverpool, Institute of Health and Ageing, Liverpool, United Kingdom

<sup>3</sup>University Hospitals of Leicester NHS Trust, Leicester, United Kingdom

<sup>4</sup>Royal Orthopaedic Hospital, Stanmore, United Kingdom

### FP11

#### Forefoot morphotypes in cavovarus feet – a novel classification

K. Malhotra<sup>1,2</sup>, S. Patel<sup>1,2</sup>, N. Cullen<sup>1</sup>, M. Welck<sup>1,2</sup>

<sup>1</sup>Royal National Orthopaedic Hospital, Foot & Ankle Unit, Stanmore, United Kingdom

<sup>2</sup>University College London, Dept of Ortho & MSK Science, London, United Kingdom

### FP12

#### Ultrasound-guided infiltration with hyaluronic acid versus corticosteroid for the treatment of Morton's neuroma: a randomised controlled trial

T. Lewis<sup>1</sup>, G.F. Ferreira<sup>2</sup>, G. Nunes<sup>3</sup>, R. Ray<sup>1</sup>

<sup>1</sup>King's College Hospital NHS Foundation Trust, Trauma and Orthopaedics, London, United Kingdom

<sup>2</sup>Prevent Senior, Trauma and Orthopaedics, Sao Paulo, Brazil

<sup>3</sup>COTE Brasilia Clinic, Foot and Ankle Unit, Brasilia, Brazil

### FP13

#### Arthroscopic subtalar arthrodesis – a large case series of 135 patients

K. Shah<sup>1</sup>, J. Battle<sup>2</sup>, S. Hepple<sup>2</sup>, B. Harries<sup>2</sup>, I.G. Winson<sup>2</sup>, P.W. Robinson<sup>2</sup>

<sup>1</sup>Nottingham University Hospitals NHS Foundation Trust, Nottingham, United Kingdom

<sup>2</sup>North Bristol NHS Foundation Trust, Bristol, United Kingdom

### FP14

#### Attachment with suture via bone tunnels is comparable biomechanically to single row anchor suture for reattachment of Achilles tendon to bone

N. Aizah<sup>1</sup>, A. Haseeb<sup>2</sup>, M.R. Draman<sup>1</sup>

<sup>1</sup>Universiti Malaya Medical Centre, Orthopaedic Surgery (NOCERAL), Kuala Lumpur, Malaysia

<sup>2</sup>Faculty of Medicine, Universiti Malaya, Orthopaedic Surgery (NOCERAL), Kuala Lumpur, Malaysia

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## FREE PAPERS 3

Friday 8th March

### FP15

#### Use of TaqMan array to investigate infection in diabetic foot wounds

S. Johnson-Lynn<sup>1,2</sup>, M. Curran<sup>3</sup>, C. Allen<sup>4</sup>, K. Webber<sup>3</sup>, M. Maes<sup>3</sup>, D. Enoch<sup>3</sup>, A.H. Robinson<sup>2</sup>, A.P. Coll<sup>4</sup>

<sup>1</sup>University Hospital of North Tees, Stockton-on-Tees, United Kingdom

<sup>2</sup>Department of Orthopaedics, Addenbrookes Hospital, Cambridge, United Kingdom

<sup>3</sup>United Kingdom Health Security Agency (UKHSA), Cambridge, United Kingdom

<sup>4</sup>Wolfson Diabetes and Endocrine Clinic, Wellcome- MRC Institute of Metabolic Science, Cambridge University Hospitals NHS Foundation Trust, Cambridge, United Kingdom

### FP16

#### The OxFAT score: A new score for predicting malignancy in foot and ankle tumours

A. Abboud<sup>1</sup>, R. Colta<sup>1</sup>, H. Branford White<sup>1</sup>, A. Kendal<sup>1</sup>, R. Brown<sup>1</sup>

<sup>1</sup>Oxford University Hospitals, Nuffield Orthopaedic Centre, Oxford, United Kingdom

### FP17

#### A 2-stage approach in managing diabetic forefoot ulcers

J. Sayani<sup>1</sup>, M. Tiruveedhula<sup>1</sup>

<sup>1</sup>Basildon Hospital, Orthopaedics, Basildon, United Kingdom

### FP18

#### Clinical, radiological and patient reported outcomes of Charcot foot reconstructive surgery in a single centre over a follow up period of 1-7 years

R. Martin<sup>1</sup>, H. Sylvester<sup>1</sup>, J. Ramaskandhan<sup>1</sup>, S. Chambers<sup>1</sup>, S. Qasim<sup>1</sup>

<sup>1</sup>Royal Victoria Infirmary, Trauma and Orthopaedics, Newcastle Upon Tyne, United Kingdom

### FP19

#### Association between weightbearing CT and MRI findings in progressive collapsing foot deformity

L.K. Andres<sup>1</sup>, R. Donners<sup>2</sup>, D. Harder<sup>2</sup>, N. Krähenbühl<sup>2</sup>

<sup>1</sup>Schulthess Klinik, Zurich, Switzerland

<sup>2</sup>University Hospital Basel, Basel, Switzerland

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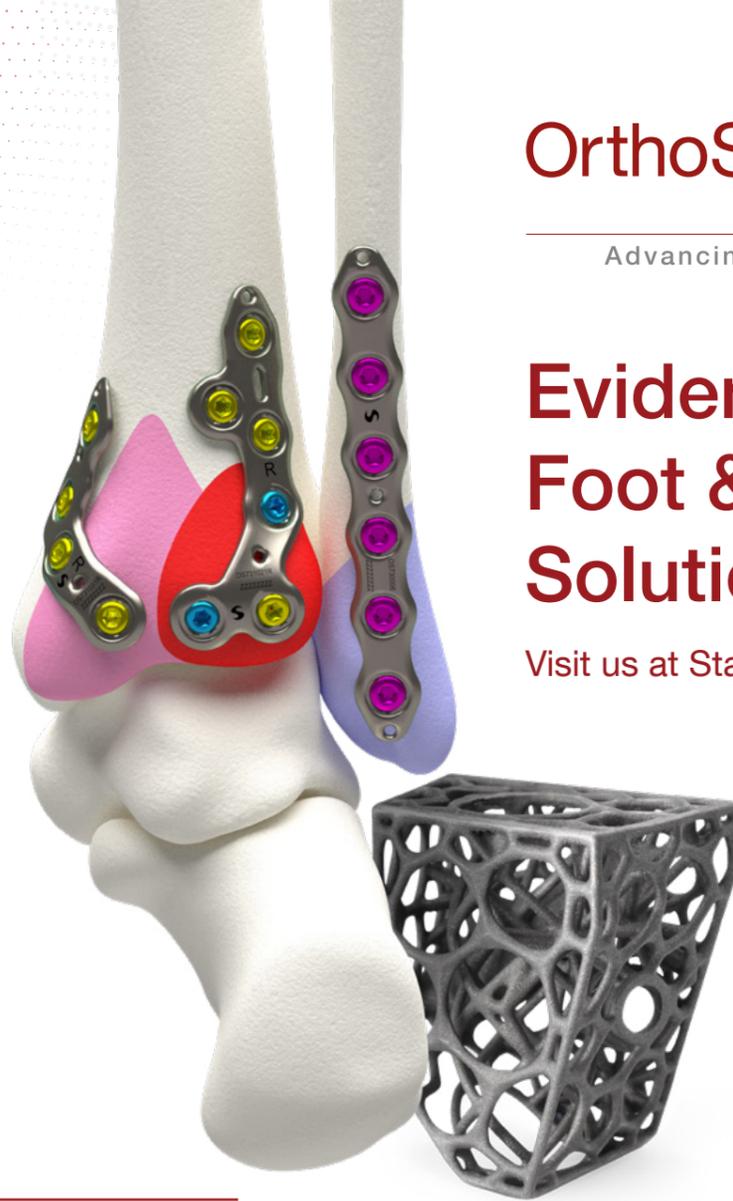
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## Evidence Based Foot & Ankle Solutions

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# BOFAS

## FREE PAPERS ABSTRACT DETAILED

### BOFAS Workshops:

**Day:** Thursday, 7<sup>th</sup> March 2024  
**Venue:** Room 2A, Level 3 - ICC Belfast  
International Convention & Exhibition Centre

**Workshop 1** 9:00am - 10:15am Putting evidence behind 3D printed, custom made implants in foot and ankle surgery  
- *Jit Mangwani and Roland Walker*

**Workshop 2** 10:30am - 11:30am The ever-continuing evolution of ankle fracture management, through the guidance of evidence and fragment-specific fixation  
- *Lyndon Mason*

Scan to know more



# FREE PAPER SESSION 1

Wednesday 6th March 2023

## FP1

### Minimally invasive surgery versus conservative treatment for displaced intra-articular calcaneal fractures: A prospective propensity score matched cohort study with 2 year follow up

R. Ahluwalia<sup>1</sup>, T. Lewis<sup>1</sup>, O. Musbahi<sup>1</sup>, I. Reichert<sup>1</sup>

<sup>1</sup>King's College Hospital NHS Foundation Trust, Trauma and Orthopaedics, London, United Kingdom

**Background:** Optimal management of displaced intra-articular calcaneal fractures remains controversial. The aim of this prospective cohort study was to compare the clinical and radiological outcomes of minimally invasive surgery (MIS) versus non-operative treatment in displaced intra-articular calcaneal fracture up to 2-years.

**Method:** All displaced intra-articular calcaneal fractures between August 2014 and January 2019 that presented to a level 1 trauma centre were considered for inclusion. The decision to treat was made by a multidisciplinary meeting. Operative treatment protocol involved sinus tarsi approach or percutaneous reduction & internal fixation. Non-operative protocol involved symptomatic management with no attempt at closed reduction. All fractures were classified, and the MOXFQ/EQ-5D-5L scores were used to assess foot and ankle and general health-related quality of life outcomes respectively.

**Results:** 101 patients were recruited at a level 1 major trauma centre, between August 2014 and January 2019. Our propensity score matched 44 patients in the surgical cohort to 44 patients in the non-surgical cohort. At 24 months, there was no significant difference in the MOXFQ Index score ( $p < 0.05$ ) however the patients in the surgical cohort had a significantly higher EQ-5D-5L Index score ( $p < 0.05$ ). There was also a higher return to work (91% vs 72%,  $p < 0.05$ ) and physical activity rate (46 vs. 35%,  $p < 0.05$ ) in the surgical cohort despite a higher proportion of more complex fractures in the surgical cohort. The wound complication rate following surgery was 16%. 14% of patients in the non-operative cohort subsequently underwent arthrodesis compared to none of the patients in the surgical cohort.

**Conclusion:** In this study, we found operative treatments were associated with low rates of surgical complication at 2-years and long term pain improvement, facilitating earlier and better functional outcomes for complex injury patterns compared to nonoperative treatment.

## FP2

### The Fracture Ankle Implant Review (FAIR) Study: A national multicentre retrospective review of implants, fixation methods and outcomes in fibula fixation in ankle fractures

W. Fishley<sup>1,2</sup>, R. Morrison<sup>1</sup>, T. Baldock<sup>1</sup>, A. Hillely<sup>3</sup>, - FAIR Collaborative<sup>4</sup>, - CORNET<sup>5</sup>, P. Baker<sup>6</sup>, D. Townshend<sup>1</sup>

<sup>1</sup>Northumbria Healthcare NHS Foundation Trust, Trauma and Orthopaedics, Northumbria, United Kingdom

<sup>2</sup>University of York, York, United Kingdom

<sup>3</sup>Newcastle-Upon-Tyne Hospitals NHS Foundation Trust, Trauma and Orthopaedics, Newcastle-Upon-Tyne, United Kingdom

<sup>4</sup>Fracture Ankle Implant Review (FAIR) Collaborative, -, United Kingdom

<sup>5</sup>Collaborative Orthopaedic Research Network (CORNET), North East, United Kingdom

<sup>6</sup>South Tees Hospitals NHS Foundation Trust, Trauma and Orthopaedics, Middlesbrough, United Kingdom

**Background:** In fixation of the fibula in ankle fractures, AO advocate using a lag screw and one-third tubular neutralisation plate for simple patterns. Where a lag screw cannot be placed, bridging fixation is required. A local pilot service evaluation previously identified variance in use of locking plates in all patterns with significant cost implications. The FAIR study aimed to evaluate current practice and implant use across the United Kingdom (UK) and review outcomes and complication rates between different fibula fixation methods.

**Methods:** The study was supported by CORNET, the North East trainee research collaborative, and BOTA. Data was collected using REDCap from 22 centres in the UK retrospectively for a one-year period between 1st January 2019 and 31st December 2019 on injury mechanism, fracture characteristics, comorbidities, fixation and complications. Follow-up data was collected to at least two-years from the time surgery.

**Results:** 1479 ankle fractures which involved fixation of the fibula were recorded; one-third tubular plate was used in 883 (59.7%) cases, a locking plate in 470 (31.8%) cases and other methods in 118 (8.1%) cases. There was significant difference between centres ( $p < 0.001$ ) in implant type used. Other factors associated with implant type were age, diabetes, osteoporosis, open fractures and the presence of comminution. Incidence of lateral wound breakdown and infection was higher in locking plates than one-third tubular plates ( $p < 0.05$ ) in AO44B fractures. There was no significant difference in non-union, fixation failure or removal of metalware.

**Conclusion:** There is significant variation in practice in the UK in implant use for fixation of the fibula in ankle fractures. Potentially unnecessary use of locking plates, where a one-third tubular shows equivalent outcomes, incurs additional cost and may increase the risk of lateral wound complications. We would encourage surgeons with high locking plate usage to evaluate their own unit's practice against this data.

## FP3

### Deltoid ligament reconstruction in ankle fractures – does it prevent pes planus?

J. Aamir<sup>1</sup>, T. Huxley<sup>1</sup>, M. Clarke<sup>1</sup>, N. Dalal<sup>1</sup>, A. Johnston<sup>1</sup>, D. Rigkos<sup>1</sup>, J. Kutty<sup>1</sup>, C. Gunn<sup>1</sup>, C. Condurache<sup>1</sup>, D. McKeever<sup>1</sup>, A. Gooma<sup>1</sup>, L. Mason<sup>1,2</sup>

<sup>1</sup>Liverpool University Hospitals NHS Foundation Trust, Liverpool Orthopaedic and Trauma Service, Liverpool, United Kingdom,

<sup>2</sup>University of Liverpool, Institute of Health and Ageing, Liverpool, United Kingdom

**Introduction:** Deltoid ligament reconstruction (DLR) is an important factor in the consideration of pes planus deformity. There is little evidence in the literature determining whether DLR could mitigate the risk of patients acquiring flat foot postoperatively following deltoid ligament injury

**Aim:** Our objective was to establish if there was a difference in pes planus deformity in patients who underwent DLR during their ankle fracture fixation compared to those who did not.

**Methods:** A retrospective analysis of post-operative weight bearing radiographs was performed of patients who underwent ankle fracture fixation. Inclusion criteria were confirmed deltoid instability presurgery without medial malleolar fracture and post operative weightbearing radiographs at least 6 weeks post-fixation. Patients were categorised into no deltoid ligament reconstruction (nDLR) and having DLR. Radiographic pes planus parameters involved Meary's Angle assessment. Other fracture morphology was classified.

**Results:** A total 723 ankle fractures were screened. 122 patients were included for further analysis. There were 94 patients in the nDLR group and 28 patients in DLR group. The mean Meary's Angle was 15.81 (95% CI 14.06, 17.56) degrees in the nDLR group and -2 (95% CI -3.86, 3.82) in the DLR group. This was statistically significant ( $p < 0.001$ ). There was no significant difference in medial clear space measurements (2.90mm v 3.19mm,  $p = 0.145$ ). There were significantly more pes planus patients in the nDLR than the DLR group ( $p < 0.001$ , 90.5% vs 25%).

**Conclusion:** In this study there was significantly greater pes planus parameters in patients not undergoing DLR. Patients undergoing DLR had on average normal parameters, whilst those not undergoing DLR had on average severe pes planus. The benefits of DLR are not only maintaining ankle stability but maintaining medial arch integrity, and this should be taken into account in a future study on DLR.

## FP4

### Medial Malleolus: Operative Or Non-operative (MOON): A randomised clinical trial of operative versus non-operative management of associated medial malleolus fractures in unstable ankle fracture dislocations

T. Carter<sup>1</sup>, W. Oliver<sup>1</sup>, K. Bell<sup>1</sup>, C. Graham<sup>2</sup>, A.D. Duckworth<sup>1,3</sup>, T. White<sup>1</sup>, N. Heinz<sup>1</sup>

<sup>1</sup>Edinburgh Orthopaedic Trauma, Royal Infirmary of Edinburgh, Edinburgh, United Kingdom

<sup>2</sup>Edinburgh Clinical Research Facility, Edinburgh, United Kingdom

<sup>3</sup>University of Edinburgh, Centre for Population Health Sciences, Edinburgh, United Kingdom

**Introduction:** Unstable ankle fractures are routinely managed operatively. Due to soft-tissue and implant related complications, there has been recent literature reporting on the non-operative management of well-reduced medial malleolus fractures following fibular stabilisation, but with limited evidence supporting routine application. This trial assessed the superiority of internal fixation of well-reduced (displacement  $\leq 2$ mm) medial malleolus fractures compared with non-fixation following fibular stabilisation.

**Methods & Participants:** Superiority, pragmatic, parallel, prospective randomised clinical trial conducted over a four year period. A total of 154 adult patients with a bi- or trimalleolar fractures were recruited from a single centre. Open injuries and vertical medial malleolar fractures were excluded. Following fibular stabilisation, patients were randomised intra-operatively on a 1:1 basis to fixation or non-fixation after satisfactory fluoroscopic fracture reduction was confirmed. The primary outcome was the Olerud Molander Ankle Score (OMAS) at one-year post-randomisation. Complications and radiographic outcomes were documented over the follow-up period.

**Results:** Among 154 participants (mean age, 56.5 years; 119 women [77%]), 144 [94%] completed the trial. At one-year the median OMAS was 80 (IQR, 60-90) in the fixation group compared with 72.5 (IQR, 55-90) in the non-fixation group ( $p = 0.17$ ). Complication rates were comparable. Significantly more patients in the non-fixation group developed a radiographic non-union (20% vs 0%;  $p < 0.001$ ), with the majority ( $n = 8/13$ ) clinically asymptomatic and one patient required surgical re-intervention for this. Fracture type and reduction quality appeared to influence fracture union and patient outcome.

**Conclusion:** In this randomised clinical trial comparing internal fixation of well-reduced medial malleolus fractures with non-fixation, following fibular stabilisation, fixation was not superior according to the primary outcome. However, 1 in 5 patients following non-fixation developed a radiographic non-union and whilst the re-intervention rate to manage this was low, the future implications require surveillance. These results may support selective non-fixation of anatomically reduced medial malleolus fractures.

## FP5

### Evaluating the utility of plain radiograph and computerised tomography scanning in identifying concomitant foot fractures in patients with unstable Lisfranc injuries

J. Aamir<sup>1</sup>, R. Caldwell<sup>1</sup>, D. Karthikappallil<sup>1</sup>, H. Tanaka<sup>2</sup>, M. Elbannan<sup>2</sup>, L. Mason<sup>1,3</sup>

<sup>1</sup>Liverpool University Hospitals NHS Foundation Trust, Liverpool Orthopaedic and Trauma Service, Liverpool, United Kingdom

<sup>2</sup>Aneurin Bevan University NHS Trust, Newport, United Kingdom

<sup>3</sup>University of Liverpool, Institute of Health and Ageing, Liverpool, United Kingdom

**Background:** Lisfranc fracture dislocations are uncommon injuries, which frequently require surgical intervention. Currently, there is varying evidence on the diagnostic utility of plain radiographs (XR) and CT in identifying Lisfranc injuries and concomitant fractures. Our aim was to identify the utility of XR as compared to CT, with the null hypothesis that there was no difference in fracture identification.

**Methods:** A retrospective assessment of patients who had sustained a Lisfranc injury between 2013 and 2022 across two trauma centres within the United Kingdom who underwent surgery. Pre-operative XR and CT images were reviewed independently by 2 reviewers to identify the presence of associated fractures.

**Results:** A total of 175 patients were included. Our assessment identified that XR images significantly under-diagnosed all metatarsal and midfoot fractures. The largest discrepancies between XR and CT in their rates of detection were in fractures of the cuboid (5.7% vs 28%,  $p < 0.001$ ), medial cuneiform (20% vs 51%,  $p = 0.008$ ), lateral cuneiform (4% vs 36%,  $p = 0.113$ ), second metatarsal (57% vs 82%,  $p < 0.001$ ), third metatarsal (37% vs 61%,  $p < 0.001$ ) and fourth metatarsal (26% vs 43%,  $p < 0.001$ ).

As compared to CT, the sensitivity of XR was low. The lowest sensitivity for identification however was lateral foot injuries, specifically fractures of the lateral cuneiform (sensitivity 7.94%, specificity 97.3%), cuboid (sensitivity 18.37%, specificity 99.21%), fourth (sensitivity 46.7%, specificity 89.80%) and fifth metatarsal (sensitivity 45.00%, specificity 96.10%).

**Conclusion:** From our analysis, we can determine that XR significantly under-diagnoses associated injuries in patient sustaining an unstable Lisfranc injury, with lateral foot injuries being the worst identified. We advised the use of CT imaging in all cases for appropriate surgical planning.

## FP6

### Surgical management of complex ankle fractures in patients with diabetes: a national retrospective multicentre study

R. Ahluwalia<sup>1</sup>, C. Wek<sup>1</sup>, T. Lewis<sup>1</sup>, T. Stringfellow<sup>1</sup>, D. Coffey<sup>1</sup>, S.T. Ping<sup>1</sup>, M. Edmonds<sup>1</sup>, I. Reichert<sup>1</sup>,

HARnT Collaborative

<sup>1</sup>King's College Hospital NHS Foundation Trust, Trauma and Orthopaedics, London, United Kingdom

**Background:** Ankle fractures associated with diabetes experience more complications following standard Open-Reduction-Internal-Fixation (ORIF) than those without diabetes. Augmented fixation strategies namely extended ORIF and hind-foot-nail (HFN) may offer better results, and early weightbearing in this group. The aim of this study was to define the population of patients with diabetes undergoing primary fixation for ankle fractures. Secondly, to assess the utilisation of standard and augmented strategies and the effect of these choices on surgical outcomes including early post-operative weight bearing and surgical complications.

**Methods:** A national-multicentre retrospective cohort study was conducted between January to June 2019 in 56 centres (10 Major-Trauma-Centres and 46 Trauma-Units) in the United Kingdom; 1360 specifically defined complex ankle-fractures were enrolled. Demographics, fixation choice, surgical and functional outcomes were recorded. Statistical analysis was performed to compare high-risk patients with/without diabetes.

**Results:** There were 316 patients in the diabetes cohort with mean age 63.9yrs (vs. 49.3yrs in non-diabetes cohort), and greater frailty score  $>4$  (24% vs. 14% (non-diabetes cohort) ( $p < 0.03$ ); 7.5% had documented neuropathy. In the diabetes cohort, 79.7% underwent standard ORIF, 7.1% extended ORIF and 10.2% a HFN compared to 87.7%, 3.0% and 10.3% in the non-diabetes cohort. Surgical wound complications after standard-ORIF were higher in the diabetes cohort (15.1% vs. 8.7%) ( $p < 0.02$ ) but patients with diabetes who underwent augmented techniques showed little difference in surgical outcomes/complications to non-diabetes, even though early-weight-bearing rates were greater than standard-ORIF.

**Conclusion:** Ankle fractures in diabetes occur in older, frailer patients; whilst lower than expected neuropathy rates suggest a need for improved assessment. Augmented surgical techniques may allow earlier weight-bearing without increasing complications in keeping with modern guidelines in ankle fracture management.

## FP8

### Long term outcomes of a randomized control trial comparing fibular nail with open reduction and internal fixation in patients with unstable ankle fractures

N. Heinz<sup>1</sup>, K. Bugler<sup>1</sup>, N. Clement<sup>2</sup>, X. Low<sup>1</sup>, A. Duckworth<sup>1,3</sup>, T. White<sup>1</sup>

<sup>1</sup>Edinburgh Orthopaedic Trauma, Royal Infirmary of Edinburgh, Edinburgh, United Kingdom

<sup>2</sup>Edinburgh Orthopaedics, Royal Infirmary of Edinburgh, Edinburgh, United Kingdom

<sup>3</sup>University of Edinburgh, Centre for Population Health Sciences, Edinburgh, United Kingdom

**Background:** Studies have compared open reduction internal fixation (ORIF) with fibular nail fixation (FNF) and shown reduced wound complications with minimal difference to PROMS in the short term. Our aim is to compare long-term outcomes for unstable ankle fractures at 10 year follow up.

**Methods:** Patients from a previously conducted RCT were contacted at a minimum of 10 years post intervention at a single study centre. Case notes were reviewed, and patient reported outcome measures acquired at 10 years.

**Results:** Ninety-nine patients were included (48 FNF and 51 ORIF). After 10 years 75% (33/44) of patients in the FNF group required no further follow up versus 81% (39/48) in the ORIF group. Radiographically at 2 years post-injury, there was no statistically significant difference between groups for development of osteoarthritis ( $p = 0.851$ ). There was one tibio-talar fusion in each group secondary to osteoarthritis, but no statistically significant difference in overall re-operation rate ( $p = 0.518$ ). Fifty-one percent ( $n = 50$ ) of patients have so far returned patient reported outcome measures at a minimum of 10 years (Fibular nail  $n = 23$ , plate fixation  $n = 27$ ). No significant difference was found between groups for the mean scores of Olerud and Molander Ankle Score (FNF 84.78 vs ORIF 84.07;  $p = 0.883$ ), the Manchester-Oxford Foot Questionnaire (MOXFQ) (FNF 89.54 vs ORIF 96.47;  $p = 0.112$ ), Euroqol-5D Index (FNF 0.88 vs ORIF 0.87;  $p = 0.701$ ) and Euroqol-5D Visual Analogue Score (FNF 77.30 vs ORIF 77.52;  $p = 0.859$ ).

**Conclusion:** The current study illustrates that both methods of treatment result in a satisfactory long-term outcome with no difference in late complications or PROM scores at up to 10 years in patients under 65 years old, although the study is currently under powered.

**Disclosures:** None

## FP9

### A morphological review of medial malleolar fractures – Are there any factors which may predispose to nonunion and malunion?

J. Aamir<sup>1</sup>, R. Caldwell<sup>2</sup>, S. Long<sup>1</sup>, S. Sreenivasan<sup>1</sup>, J. Mayrotas<sup>1</sup>, A. Panera<sup>1</sup>, S. Jeevaesan<sup>1</sup>, L. Mason<sup>1,3</sup>

<sup>1</sup>Liverpool University Hospitals NHS Foundation Trust, Liverpool Orthopaedic and Trauma Service, Liverpool, United Kingdom,

<sup>2</sup>Aneurin Bevan University NHS Trust, Newport, United Kingdom

<sup>3</sup>University of Liverpool, Institute of Health and Ageing, Liverpool, United Kingdom

**Background:** Many approaches to management of medial malleolar fractures are described in the literature however, their morphology is under investigated. The aim of this study was to analyse the morphology of medial malleolar fractures to identify any association with medial malleolar fracture non-union or malunion.

**Methods:** Patients who had undergone surgical fixation of their MMF were identified from 2012 to 2022, using electronic patient records in a single centre. Analysis of their preoperative, intraoperative, and postoperative radiographs was performed to determine their morphology and prevalence of non-union and malunion. Lauge-Hansen classification was used to characterise ankle fracture morphology and Herscovici classification to characterise MMF morphology.

**Results:** A total of 650 patients were identified across a 10-year period which could be included in the study. The overall non-union rate for our cohort was 18.77% (122/650). The overall malunion rate was 6.92% (45/650). There was no significant difference in union rates across the Herscovici classification groups. Herscovici type A fractures were significantly more frequently malreduced at time of surgery as compared to other fracture types ( $p = .003$ ). Medial wall blowout combined with Herscovici type B fractures showed a significant increase in malunion rate. There is a higher rate of bone union in patients who have been anatomically reduced.

**Conclusion:** The morphology of medial malleolar fractures does have an impact of the radiological outcome following surgical management. Medial wall blowout fractures were most prevalent in adduction-type injuries; however, it should not be ruled out in rotational injuries with medial wall blowouts combined with and Herscovici type B fractures showing a significant increase in malunions. Herscovici type A fractures had significantly higher malreductions however the clinical implications of mal reducing small avulsions is unknown.

## FREE PAPER SESSION 2

Thursday 7th March 2023

### FP10

#### The incidence of VTE in foot and ankle surgery in the UK - UK Foot and Ankle Thrombo-Embolism Audit (UK-FATE)

L. Mason<sup>1,2</sup>, J. Mangwani<sup>3</sup>, K. Malhotra<sup>4</sup>, L. Houchen-Wolloff<sup>3</sup>

<sup>1</sup>Liverpool University Hospitals NHS Foundation Trust, Liverpool Orthopaedic and Trauma Service, Liverpool, United Kingdom,

<sup>2</sup>University of Liverpool, Institute of Health and Ageing, Liverpool, United Kingdom

<sup>3</sup>University Hospitals of Leicester NHS Trust, Leicester, United Kingdom

<sup>4</sup>Royal Orthopaedic Hospital, Stanmore, United Kingdom

**Introduction:** VTE is a possible complication of foot and ankle surgery, however there is an absence of agreement on contributing risk factors in the development of VTE. The primary outcome of this study was to analyse the 90-day incidence of symptomatic VTE following foot and ankle surgery and to determine which factors may increase the risk of VTE.

**Methods:** This was a national, multi-centre prospective audit spanning a collection duration of 9 months (2022/2023). Primary outcomes included incidence of symptomatic VTE and VTE related mortality up to 90 days following foot and ankle surgery and Achilles tendon rupture, and analysis of risk factors.

**Results:** In total 11,363 patients were available for analysis. 5,090 patients (44.79%) were elective procedures, 4,791 patients (42.16%) were trauma procedures (excluding Achilles ruptures), 398 patients (3.50%) were acute diabetic procedures, 277 patients (2.44%) were Achilles ruptures undergoing surgery and 807 patients (7.10%) were Achilles ruptures treated non-operatively.

There were 99 cases of VTE within 90 days of admission across the whole group (Total incidence = 0.87%), with 3 cases of VTE related mortality (0.03%). On univariate analysis, increased age and ASA grade showed higher odds of 90-day VTE, as did previous cancer, stroke, history of VTE, and type of foot and ankle procedure / injury ( $p < 0.05$ ). However, on multivariate analysis, the only independent predictors for 90-day VTE were found to be the type of foot and ankle procedure (Achilles tendon rupture = Odds Ratio 11.62, operative to 14.41, non-operative) and ASA grade (grade III/IV = Odds Ratio 3.64).

**Conclusions:** The incidence of 90-day post procedure VTE in foot and ankle surgery in this national audit was low. Significant, independent risk factors associated with the development of 90-day symptomatic VTE were Achilles tendon rupture management and high ASA grade.

### FP11

#### Forefoot morphotypes in cavovarus feet – a novel classification

K. Malhotra<sup>1,2</sup>, S. Patel<sup>1,2</sup>, N. Cullen<sup>1</sup>, M. Welck<sup>1,2</sup>

<sup>1</sup>Royal National Orthopaedic Hospital, Foot & Ankle Unit, Stanmore, United Kingdom

<sup>2</sup>University College London, Dept of Ortho & MSK Science, London, United Kingdom

**Background:** The cavovarus foot is a complex 3-dimensional deformity. Although a multitude of techniques are described for its surgical management, few of these are evidence based or guided by classification systems. Surgical management involves realignment of the hindfoot and soft tissue balancing, followed by forefoot balancing. Our aim was to classify the pattern of residual forefoot deformities once the hindfoot is corrected, to guide forefoot correction.

**Methods:** We included 20 cavovarus feet from adult patients with Charcot-Marie-Tooth who underwent weightbearing CT (mean age 43.4 years, 14 males). Patients included had flexible deformities, with no previous surgery. Previous work established majority of rotational deformity in cavovarus feet occurs at the talonavicular joint, which is often reduced during surgery. Using specialised software (Bonelogic 2.1, Disior) a 3-dimensional, virtual model was created. Using data from normal feet as a guide, the talonavicular joint of the cavovarus feet was digitally reduced to a 'normal' position. Models of the corrected position were exported and geometrically analysed using Blender 3.6 to identify anatomical trends.

**Results:** We identified 3 types of cavovarus forefoot morphotypes. Type 1 was seen in 13 cases (65%) and was defined as a foot where only the first metatarsal was relatively plantarflexed to the rest of the foot, with no significant residual adduction after talonavicular correction. Type 2 was seen in 4 cases (20%) and was defined as a foot where the second and first metatarsals were progressively plantarflexed, with no significant adduction. Type 3 was seen in 3 cases (15%) and was defined as a foot where the metatarsals were still adducted after talonavicular de-rotation.

**Conclusions:** We classify 3 forefoot morphotypes in cavovarus feet. It is important to recognise and anticipate the residual forefoot deformities after hindfoot correction as different treatment strategies may be required for different morphotypes to achieve balanced correction.

### FP12

#### Ultrasound-guided infiltration with hyaluronic acid versus corticosteroid for the treatment of Morton's neuroma: a randomised controlled trial

T. Lewis<sup>1</sup>, G.F. Ferreira<sup>2</sup>, G. Nunes<sup>3</sup>, R. Ray<sup>1</sup>

<sup>1</sup>King's College Hospital NHS Foundation Trust, Trauma and Orthopaedics, London, United Kingdom

<sup>2</sup>Prevent Senior, Trauma and Orthopaedics, Sao Paulo, Brazil

<sup>3</sup>COTE Brasilia Clinic, Foot and Ankle Unit, Brasilia, Brazil

**Background:** Infiltration is considered the first treatment option for symptomatic Morton's neuroma and can be performed with various medications. The aim of this study was to compare the effects of hyaluronic acid infiltration versus corticosteroid injection in the treatment of Morton's neuroma.

**Methods:** A randomised clinical trial was conducted with 46 patients (50 feet) diagnosed with Morton's neuroma. After randomisation, the control group (CG) received three injections (one per week) of triamcinolone (Triancil®) guided by ultrasound, while the study group (SG) received three applications of hyaluronic acid (Osteonil Plus®). Patients were followed up for six months after the intervention. The primary outcome measure used was the Visual Pain Analog Scale (VAS). Secondary endpoints included patient-reported outcome measures using the American Orthopaedic Foot & Ankle Society (AOFAS) score and complications.

**Results:** Both groups showed significant improvement in VAS and AOFAS scores ( $p < 0.001$ ). The CG showed greater improvement than the SG in the VAS ( $p < 0.05$ ) and AOFAS ( $p < 0.001$ ) variables. Four patients in the CG experienced skin hypochromia at the injection site, while there were no complications in the SG.

**Conclusion:** Ultrasound-guided hyaluronic acid infiltration in Morton's Neuroma proved to be safe, showing improvement in pain and function after six months of follow-up, without major complications, but with a significantly lower improvement when compared to corticosteroid injection. Taking into account cost implications and the potential for longer lasting improvement from viscosupplementation further medium- and long-term studies are needed.

### FP13

#### Arthroscopic subtalar arthrodesis – a large case series of 135 patients

K. Shah<sup>1</sup>, J. Battle<sup>2</sup>, S. Hepple<sup>2</sup>, B. Harries<sup>2</sup>, I.G. Winson<sup>2</sup>, P.W. Robinson<sup>2</sup>

<sup>1</sup>Nottingham University Hospitals NHS Foundation Trust, Nottingham, United Kingdom

<sup>2</sup>North Bristol NHS Foundation Trust, Bristol, United Kingdom

**Background:** Open subtalar arthrodesis has been associated with a moderate rate of non-union, as high 16.3%, and high rates of infection and nerve injury. Performing this operation arthroscopically serves to limit the disruption to the soft tissue envelope, improve union rates and reduce infection. Our study describes our outcomes and experience of this operation.

**Methods:** Retrospective review of all patients who underwent an arthroscopic subtalar arthrodesis between 2023 and 2008. We excluded patients undergoing concurrent adjacent joint arthrodesis. The primary aim was to report on rates of union. Secondary outcomes included reporting on conversion to open procedure, duration of surgery, infection, and iatrogenic injury to surrounding structures.

**Results:** 135 patients were included in the final analysis. 129 patients (95.5%) achieved union. The median time to fusion was 98 days. All cases were performed through sinus tarsi portals. 38 cases were performed with an additional posterolateral portal. Most cases (107/77%) were performed with 2 screws. 3 cases (2.2%) were converted to open procedures. The median tourniquet time was 86 minutes but available in only 88 (65%) cases. There were 4 (2.9%) superficial infections and no deep infections. 1 patient sustained an injury to FHL and there were no reported nerve injuries.

**Conclusion:** At present this is the largest series of arthroscopic subtalar arthrodeses. We demonstrate that this operation can achieve high rates of union with low rates of infection with an equally low likelihood of needing to convert to an open procedure with modest operative times. In our experience the addition of a posterolateral portal does not appear to increase the incidence of nerve injury and aids in the visualisation of all 3 facets.

## FP14

### Attachment with suture via bone tunnels is comparable biomechanically to single row anchor suture for reattachment of Achilles tendon to bone

N. Aizah<sup>1</sup>, A. Haseeb<sup>2</sup>, M.R. Draman<sup>1</sup>

<sup>1</sup>Universiti Malaya Medical Centre, Orthopaedic Surgery (NOCERAL), Kuala Lumpur, Malaysia

<sup>2</sup>Faculty of Medicine, Universiti Malaya, Orthopaedic Surgery (NOCERAL), Kuala Lumpur, Malaysia

Insertional Achilles tendinitis with considerable degeneration that failed non-operative treatment typically requires tendon debridement and reattachment to bone. It is common practice for tendons to be reattached back with anchor sutures, but this poses a challenge to patients who are not able to afford them. Bony anchorage of tendons may be performed by passing sutures through tunnels, but the strength of repair compared to by using anchors is not known. We investigated the load at clinical and catastrophic failure of these two methods of reattachment. Sixteen paired Achilles tendons along with the calcaneus were harvested from eight fresh frozen cadavers.

Paired randomization was done. For the anchor suture group, two 5'0 anchors with polyethylene #2 sutures were used for reattachment whereas for the suture only group, tendons were reattached to bone using braided polyester #2 sutures via two bony tunnels. All samples were mounted on a materials testing system and preloaded at 50N for 60sec before load to failure at a rate of 1mm/sec. With the assumption that preloading has removed tendon crimp and any subsequent extension is a result of gapping at the repair site, loads at 5mm, 10mm, 15mm, and 20mm of extension were noted as well as the maximal load at failure. We found higher loads were needed to cause an extension of 5 to 20mm in the suture only group compared to the anchor suture group but these data were not significant. On the other hand, the anchor suture group required higher loads before catastrophic failure occurred compared to the suture only group, but this again is not significant.

We conclude that suture only reattachment of the Achilles tendon is comparable in strength with anchor suture reattachment, and this method of reattachment can be considered for patients who do not have access to anchor sutures.

## FREE PAPER SESSION 3

Friday 8th March 2023

## FP15

### Use of TaqMan array to investigate infection in diabetic foot wounds

S. Johnson-Lynn<sup>1,2</sup>, M. Curran<sup>3</sup>, C. Allen<sup>4</sup>, K. Webber<sup>3</sup>, M. Maes<sup>3</sup>, D. Enoch<sup>3</sup>, A.H. Robinson<sup>2</sup>, A.P. Coll<sup>4</sup>

<sup>1</sup>University Hospital of North Tees, Stockton-on-Tees, United Kingdom

<sup>2</sup>Department of Orthopaedics, Addenbrookes Hospital, Cambridge, United Kingdom

<sup>3</sup>United Kingdom Health Security Agency (UKHSA), Cambridge, United Kingdom

<sup>4</sup>Wolfson Diabetes and Endocrine Clinic, Wellcome- MRC Institute of Metabolic Science, Cambridge University Hospitals NHS Foundation Trust, Cambridge, United Kingdom

**Introduction:** Diabetic foot disease is a major public health problem with an annual NHS expenditure in excess of £1 billion. Infection increases risk of major amputation fivefold. Due to the polymicrobial nature of diabetic foot infections, it is often difficult to isolate the correct organism with conventional culture techniques, to deliver appropriate narrow spectrum antibiotics. Rapid DNA-based technology using multi-channel arrays presents a quicker alternative and has previously been used effectively in intensive care and respiratory medicine.

**Methods:** We gained institutional and Local Ethics Committee approval for a prospective cohort study of patients with clinically infected diabetic foot wounds. They all had deep tissue samples taken in clinic processed with conventional culture and real-time PCR TaqMan array.

**Results:** 50 samples were taken from 39 patients between October 2020 and March 2022. 84% of patient were male, 88% had type 2 diabetes. The ulcers were of variable chronicity prior to sampling (range 1-113 weeks) and mean HbA1c was 67.2mmol/mol. Ulcers were on the heel (3), midfoot (6) and forefoot (41). Minimum follow up was 3 months. 6 ulcers healed, 24 patients were admitted due to foot disease, there were 2 major amputations and 4 deaths.

TaqMan array results were available a mean of 4.3 days earlier than culture results. 9 patients had negative conventional cultures and 8 were negative on array testing. 17 patients had the same organisms detected on culture and array. 16 of these 17 had additional organisms detected by array. The most frequent organisms detected on array that were not detected by culture were Staphylococcus spp., Enterobacter, Pseudomonas and fungi.

**Conclusions:** TaqMan array shows promise in detecting infecting organisms from diabetic foot wounds and providing earlier and more detailed results than standard culture, which may facilitate specific and timely antibiotic therapy.

## FP16

### The OxFAT score: A new score for predicting malignancy in foot and ankle tumours

A. Abboud<sup>1</sup>, R. Colta<sup>1</sup>, H. Branford White<sup>1</sup>, A. Kendal<sup>1</sup>, R. Brown<sup>1</sup>

<sup>1</sup>Oxford University Hospitals, Nuffield Orthopaedic Centre, Oxford, United Kingdom

**Background:** Masses are not uncommon in the foot and ankle. Most of these masses are benign, often leading clinicians to underestimate their potential for malignancy.

**Methods:** We conducted a retrospective review of our clinical records, on patients with histologically confirmed musculoskeletal tumours of the foot and ankle, treated in a single institution between 2010 and 2019. The maximum diameter of each lesion was determined through MRI or Ultrasound analysis in centimeters. To develop a scoring system we compared the risk of malignancy with five criteria: site (proximal or distal to the first TMTJ), gender, age, composition and the diameter as observed.

**Results:** Our study included 496 patients, of whom 39 (7.9%) were identified as having malignancies. The incidence of malignancy demonstrated an increased propensity among male patients, patients over 50 years of age and lesions located proximal to the TMTJ. A ROC Analysis determined that lesions measuring over 2.85 cm had an increased risk of malignancy, with a PPV of 31.1%, a NPV of 94.2%, a Sensitivity of 0.82, and a Specificity of 0.62. These identified patterns of risk were employed to formulate a scoring system, aimed at facilitating informed clinical judgment in the referral of patients to regional tumor services.

**Conclusion:** The new OxFAT scoring system highlights the importance of lesion size, site, age and gender of the patient in determining the risk of malignancy in lump in the foot and ankle. We propose this new scoring system to aid health care professionals in managing these patients. Based on our results any patient with a foot or ankle mass of less than 2.85cm, an OxFAT score < 4/7 and no malignant or sinister features on MRI or USS can be managed locally with excision biopsy. All other patients should be referred urgently to a Regional Tumour Service.

## FP17

### A 2-stage approach in managing diabetic forefoot ulcers

J. Sayani<sup>1</sup>, M. Tiruveedhula<sup>1</sup>

<sup>1</sup>Basildon Hospital, Orthopaedics, Basildon, United Kingdom

**Aim:** Forefoot ulcers in patients with diabetic neuropathy are a result of factors that result in increased forefoot plantar pressures. Progressive hindfoot equinus from contraction of gastrocnemius-soleus-tendo-Achilles complex and progressive plantar flexed metatarsal heads secondary to claw toe deformity results callus at the metatarsal heads which break down to ulceration. The aim is to describe 2-stage treatment pathway for managing these ulcers.

**Methods:** Consecutive patients, who presented with forefoot ulcers since February 2019 were treated with a 2-stage treatment pathway. The first stage of this is an out-patient tendo-Achilles lengthening (TAL). The second stage is surgical proximal dorsal closing wedge metatarsal osteotomy for patients with persistent or recurrent ulcers. Patients were followed for a minimum of 12 months.

**Results:** 112 patients (146 feet) underwent TAL by 3 consultants. Of these, 96 patients were followed for a minimum of 12 months (range 12-36 months). None had infection or wound related problems at the tenotomy sites; complete transection of the tendon was noted in 4 patients (4%) and one-patient developed heel callosity suggestive of over-lengthening.

In 92 patients (96%), the ulcers healed within 10 weeks ( $\pm$  4 weeks). Additional z-lengthening of peroneal longus and tibialis posterior tendons helped in patients with 1st metatarsal and 5th metatarsal head ulcers respectively.

In 12 patients (10%), the ulcer failed to heal or recurred. MRI scan in these patients showed plantar flexed metatarsals from progressive claw toe deformity. The ulcer in this group healed after surgical offloading with proximal dorsal closing wedge osteotomy of the metatarsal/s, with no recurrence at a minimum 12months of follow-up.

**Conclusions:** The described 2-stage treatment pathway results in long-term healing of neuropathic forefoot ulcers, and in 96% of patients, the ulcer healed after the first stage out-patient percutaneous TAL.

## FP18

### Clinical, radiological and patient reported outcomes of Charcot foot reconstructive surgery in a single centre over a follow up period of 1-7 years

R. Martin<sup>1</sup>, H. Sylvester<sup>1</sup>, J. Ramaskandhan<sup>1</sup>, S. Chambers<sup>1</sup>, S. Qasim<sup>1</sup>

<sup>1</sup>Royal Victoria Infirmary, Trauma and Orthopaedics, Newcastle Upon Tyne, United Kingdom

**Introduction:** Surgical reconstruction of Charcot joint deformity is increasingly being offered to patients. In our centre a hybrid type fixation technique is utilised: internal and external fixation. This combined fixation has better wound management and earlier mobilisation in this deconditioned patient group. The aim of this study was to assess clinical, radiological and patient reported outcomes for all patients who underwent this hybrid technique.

**Methods:** This is a prospective observational case series of all patients who underwent surgical reconstruction of Charcot foot deformity in a single centre between June 2017 and June 2023. Patient demographics, smoking status, diabetic control and BMI were recorded. Outcomes were determined from case notes and included clinical outcomes (complications, return to theatre, amputation and mortality) radiological outcomes and patient reported outcomes. The follow up period was 1-7 years post operatively.

**Results:** 42 reconstructions were included. At the time of surgery the mean age was 59.1 years (29 - 91 years), average HbA1c was 65.2 (33-103); this did not correlate with return to theatre rate. 4 procedures were internal fixation alone (9.5%), 3 external fixation alone (7.1%) and 35 were combined fixation (83.3%). At most recent follow up 7 patients were deceased (16.7%), 2 patients had ipsilateral amputations, 2 had contralateral amputations. 11 patients had issues with recurrent ulcerations. Excluding refreshing of frames and operations on the contralateral side, 17 patients (40%) returned to theatre. We aim to present a detailed analysis of the rate of post-operative complications, return to theatre, radiographic outcomes and patient reported outcomes.

**Conclusions:** This is the largest UK based case series of hybrid type Charcot joint reconstructions and shows that hybrid fixation is a viable option for patients undergoing Charcot joint reconstruction. To best confirm findings and determine which patients have the best post-operative prognosis a larger multi-centre study is required.

## FP19

### Association between weightbearing CT and MRI findings in progressive collapsing foot deformity

L.K. Andres<sup>1</sup>, R. Donners<sup>2</sup>, D. Harder<sup>2</sup>, N. Krähenbühl<sup>2</sup>

<sup>1</sup>Schulthess Klinik, Zurich, Switzerland

<sup>2</sup>University Hospital Basel, Basel, Switzerland

**Background:** Weightbearing computed tomography scans allow for better understanding of foot alignment in patients with Progressive Collapsing Foot Deformity. However, soft tissue integrity cannot be assessed via WBCT. As performing both WBCT and magnetic resonance imaging is not cost effective, we aimed to assess whether there is an association between specific WBCT and MRI findings.

**Methods:** A cohort of 24 patients of various stages of PCFD (mean age 51±18 years) underwent WBCT scans and MRI. In addition to signs of sinus tarsi impingement, four three-dimensional measurements (talo-calcaneal overlap, talo-navicular coverage, Meary's angle axial/lateral) were obtained using a post processing software (DISIOR 2.1, Finland) on the WBCT datasets. Sinus tarsi obliteration, spring ligament complex and tibiospring ligament integrity, as well as tibialis posterior tendon degeneration were evaluated with MRI. Statistical analysis was performed for significant (P<0.05) correlation between findings.

**Results:** None of the assessed 3D measurements correlated with spring ligament complex or tibiospring ligament tears. Age, body mass index, and TCO were associated with tibialis posterior tendon tears. 75% of patients with sinus tarsi impingement on WBCT also showed signs of sinus tarsi obliteration on MRI. Of the assessed parameters, only age and BMI were associated with sinus tarsi obliteration diagnosed on MRI, while the assessed WBCT based 3D measurements were, with the exception of MA axial, associated with sinus tarsi impingement.

**Conclusion:** While WBCT reflects foot alignment and indicates signs of osseous impingement in PCFD patients, the association between WBCT based 3D measurements and ligament or tendon tears in MRI is limited. Partial or complete tears of the tibialis posterior tendon were only detectable in comparably older and overweight PCFD patients with an increased TCO. WBCT does not replace MRI in diagnostic value. Both imaging options add important information and may impact decision-making in the treatment of PCFD patients.

## FP20

### Single-stage, combined, ortho-plastics treatment of severe calcaneal osteomyelitis with large soft tissue defects – long term follow up

B. Down<sup>1</sup>, S.-T. Jerry Tsang<sup>1</sup>, A. Hotchen<sup>1</sup>, J. Ferguson<sup>1</sup>, D. Stubbs<sup>1</sup>, C. Loizou<sup>1</sup>, A. Ramsden<sup>1</sup>, M. McNally<sup>1</sup>, A. Kendal<sup>1</sup>

<sup>1</sup>Nuffield Orthopaedic Centre, Oxford, United Kingdom

**Background:** Calcaneal osteomyelitis remains a difficult condition to treat with high rates of recurrence and below knee amputation; particularly in cases of severe soft tissue destruction.

**Aim:** Assess the outcomes of combined ortho-plastics treatment of complex calcaneal osteomyelitis.

**Methods:** A retrospective review was performed of all patients who underwent combined single stage ortho-plastics treatment of calcaneal osteomyelitis (2008- 2022). Primary outcome measures were osteomyelitis recurrence and BKA. Secondary outcome measures included flap failure, operative time, complications, length of stay.

**Results:** 33 patients (16 female, 17 male, mean age = 54.4 years) underwent combined ortho-plastics surgical treatment for BACH "complex" calcaneal osteomyelitis with a median follow-up of 31 months (s.d. 24.3). 20 received a local flap, 13 received a free flap. Fracture-related infection (39%) and diabetic ulceration (33%) were the commonest causes. 54% of patients had already undergone at least one operation elsewhere.

There were seven cases of recurrent osteomyelitis (21%); all in the local flap group. One patient required a BKA (3%). Recurrence was associated with increased mortality risk (OR 18.8 (95% CI 1.5-227.8), p=0.004) and reduced likelihood of walking independently (OR 0.14 (95% CI 0.02-0.86), p=0.042).

Local flap reconstruction (OR 15 (95% CI 0.8-289.6), p=0.027) and peripheral vascular disease (OR 39.7 (95% CI 1.7-905.6), p=0.006) were associated with increased recurrence risk.

Free flap reconstruction took significantly longer intra-operatively than local flaps (443 vs 174 minutes, p<0.001), but without significant differences in length of stay or frequency of out-patient appointments.

**Conclusion:** Single stage ortho-plastic management was associated with 79% eradication of infection and 3% amputation in this complex and co-morbid patient group. Risk factors for failure were peripheral vascular disease and local flap reconstruction. Whilst good outcomes can be achieved, this treatment requires high levels of in-patient and out-patient care.

## FP21

### What happens after failed total ankle replacement?

N. Jagani<sup>1</sup>, W. Harrison<sup>2</sup>, J. Davenport<sup>1</sup>, M. Karski<sup>1</sup>, J. Ring<sup>1</sup>, R. Smith<sup>1</sup>, T. Clough<sup>1</sup>

<sup>1</sup>Wrightington, Wigan and Leigh NHS Foundation Trust, Foot and Ankle (Lower Limb), Wigan, United Kingdom

<sup>2</sup>Liverpool University Hospitals NHS Foundation Trust, Orthopaedics, Liverpool, United Kingdom

**Aims:** Retrospective review of a consecutive series of 1,168 total ankle replacements (TAR) performed at Wrightington, to analyse modes of failure and clinical outcomes following TAR failure.

**Methods:** All patients undergoing TAR between November 1993 – June 2019 were collated (4-25 year follow-up; mean 13.7 years). 6 implants were used (300 STAR, 100 Buechal Pappas, 509 Mobility, 118 Zenith, 41 Salto and 100 Infinity). 5 surgeons, all trained in TAR, performed the surgery. Modes of failure were collated and clinical and radiological outcomes recorded for the revisional surgery following failure of the TAR.

**Results:** 156 (13.4%) TARs failed (47STAR 15.6%, 16BP 16%, 77Mobility 15.1%, 6Salto 14.6%, 10Zenith 8.5% and 0Infinity 0%). Mean time to failure 5.8 years (0.1- 21.4 years). The 4 most common modes of failure were 44.9% aseptic loosening, 11.5% gutter pain, 10.9% infection and 10.3% recurrent edge loading. 50 underwent conversion to tibiototalcalcaneal (TTC) fusion with nail with 9 (18%) failing to fuse. 31 underwent revision TAR with 2 (6.5%) subsequently failed. 22 underwent ankle fusion with 10 (45%) failing to fuse. 21 underwent polyethylene exchange of which 8 (38%) had further poly failure. 20 (12.8%) were managed conservatively, 2 (1.3%) required below knee amputation and 6 were listed but lost to follow-up. 81 of the 1168 (7%) consecutive cohort were lost to follow-up.

**Conclusion:** 13.4% of the TAR cohort have failed at average follow-up 13.7 years. There was no difference in failure modes across the implant designs. Whilst the fixed bearing has the shortest follow-up, it may be performing better as there have been no failures so far. Prior to October 2016, most revisions were to fusion (TTC 18% failure rate, ankle 45% failure rate), whereas post 2016, 57% patients elected for revision TAR (6.5% failure).



# ArthrexLive

## What's New in Foot & Ankle

Arthrex Workshops and Live Surgery Program



# B FAS

## POSTERS

### ABSTRACT SUMMARY

### Medical Education by Arthrex

#### Cutting Edge Technology for the Treatment of Insertional Achilles

Thursday 7 March 2024  
10:30 Workshop Begins  
10:50 Live Demo - Open Achilles Speedbridge  
11:10 Live Demo - MIS Achilles Speedbridge  
12:00 Workshop Close

**Location:** Room 3B

**Faculty:**  
Mr. Tim Clough | Mr. John McKinley | Mr. Rhys Thomas

#### Arthrex MIS Bunion Masterclass

Friday 8 March 2024  
13:45 Workshop Begins  
14:30 Live Demo - MIS Bunionectomy System  
15:15 Workshop Close

**Location:** Room 3B

**Faculty:**  
Mr. Edward Gee | Mr. Lloyd Williams



[www.Arthrex.com](http://www.Arthrex.com)



P1

**The importance of pre-operative CT imaging in posterior malleolus fixation and clinical outcomes**

C. de Wet<sup>1</sup>, R. Hackney<sup>2</sup>, R. Clayton<sup>2</sup>, S. Middleton<sup>2</sup>

<sup>1</sup>Edinburgh Medical School, Edinburgh, United Kingdom

<sup>2</sup>NHS Lothian, Edinburgh, United Kingdom

P2

**Preoperative anxiety and depression are associated with poorer patient-reported outcome following total ankle replacements**

J.M. Leow<sup>1</sup>, P.Y. Wong<sup>2</sup>, H. Shalaby<sup>1</sup>, J. Mckinley<sup>1</sup>

<sup>1</sup>Edinburgh Orthopaedics, Edinburgh, United Kingdom, <sup>2</sup>NHS Lothian, Edinburgh, United Kingdom

P3

**Long-term follow up of TAR in patients with juvenile idiopathic arthritis**

J.G. Kimani<sup>1</sup>, C. Loizou<sup>2</sup>, R. Brown<sup>2</sup>, B. Sharp<sup>2</sup>, A. Kendal<sup>1,2</sup>

<sup>1</sup>University of Oxford, Oxford, United Kingdom, <sup>2</sup>Nuffield Orthopaedic Centre, Oxford, United Kingdom

P5

**Does the underlying cause of arthritis affect the outcome of total ankle replacement? A 10 year follow up study**

A. Pujol Nicolas<sup>1</sup>, A. Porter<sup>1</sup>, J. Ramaskandhan<sup>1</sup>, S. Hakeem<sup>1</sup>, M. Siddique<sup>1</sup>

<sup>1</sup>Freeman Hospital, Newcastle Upon Tyne, United Kingdom

P6

**Chevron vs transverse cut comparison in minimally invasive hallux valgus correction. Does the osteotomy affect outcome?**

T. Lewis<sup>1</sup>, R. Ray<sup>1</sup>, D. Gordon<sup>2</sup>

<sup>1</sup>King's College Hospital NHS Foundation Trust, Trauma and Orthopaedics, London, United Kingdom

<sup>2</sup>The London Clinic, London, United Kingdom

P7

**7 to 9 year survivorship of 106 fixed bearing total ankle replacements**

M. Dahill<sup>1</sup>, M. Kostusiak<sup>2</sup>, M. Dean<sup>3</sup>, A. Hughes<sup>3</sup>, R Kakwani<sup>2</sup>, A Murty<sup>2</sup>, D. Townshend<sup>2</sup>, I. Sharpe<sup>3</sup>

<sup>1</sup>Bristol Royal Infirmary, Bristol, United Kingdom

<sup>2</sup>Northumbria Healthcare Foundation Trust, Newcastle, United Kingdom

<sup>3</sup>Royal Devon and Exeter Hospital, Exeter, United Kingdom

P8

**A medium term review of the outcomes of talar osteochondral lesions treated with matrix associated stem cell transplantation**

E. Murphy<sup>1</sup>, A. Faustino<sup>1</sup>, M. Curran<sup>1</sup>, S. Kearns<sup>1</sup>

<sup>1</sup>Galway University Hospital, Orthopaedics, Galway, Ireland

P9

**Silastic joint arthroplasty for end stage Hallux Rigidus - a joint preserving alternative**

M. Sethi<sup>1</sup>, R. Limaye<sup>1</sup>

<sup>1</sup>University Hospital of North Tees and Hartlepool, Orthopaedics, Stockton-on-Tees, United Kingdom

P10

**A Novel method for reconstructing complex diabetic foot wounds using Biodegradable Temporising Matrix (BTM)**

M. Nagarajan<sup>1</sup>, V. Lampridis<sup>2</sup>, L. Mason<sup>2</sup>

<sup>1</sup>Liverpool University Hospitals NHS Trust, Plastic Surgery, Liverpool, United Kingdom,

<sup>2</sup>Liverpool University Hospitals NHS Trust, Orthopaedic Surgery, Liverpool, United Kingdom

P11

**Radiological medial safe zone - Protecting the posterior tibial tendon during ankle or pilon fracture fixation**

B. Jones<sup>1</sup>, A. Bond<sup>2</sup>, K. Roughneen<sup>2</sup>, L. Mason<sup>1,3</sup>

<sup>1</sup>Liverpool University Hospitals NHS Foundation Trust, Liverpool Orthopaedic and Trauma Service, Liverpool, United Kingdom

<sup>2</sup>University of Liverpool, Human Anatomy and Resource Centre, Liverpool, United Kingdom

<sup>3</sup>University of Liverpool, Institute of Health and Ageing, Liverpool, United Kingdom

P12

**The patient and surgical factors specific to patients not receiving anticoagulation when undergoing foot and ankle surgery in the UK - UK-FATE Audit**

K. Malhotra<sup>1</sup>, J. Mangwani<sup>2</sup>, L. Mason<sup>3,4</sup>, L. Houchen-Wolloff<sup>2</sup>

<sup>1</sup>Royal Orthopaedic Hospital, Stanmore, United Kingdom

<sup>2</sup>University Hospitals of Leicester NHS Trust, Leicester, United Kingdom

<sup>3</sup>Liverpool University Hospitals NHS Foundation Trust, Liverpool Orthopaedic and Trauma Service, Liverpool, United Kingdom

<sup>4</sup>University of Liverpool, Institute of Health and Ageing, Liverpool, United Kingdom

P13

**Soft tissue sarcomas of the foot and ankle: a 12 year Sarcoma Centre experience**

T. Paavana<sup>1</sup>, T. Ankers<sup>1</sup>, P. Cool<sup>1</sup>, C. Heaver<sup>1</sup>

<sup>1</sup>The Robert Jones and Agnes Hunt Orthopaedic Hospital, Oswestry, United Kingdom

P14

**Pedal medial artery calcification score as a prognostic marker for the success of surgical intervention in diabetic foot disease**

T. Collins<sup>1</sup>, D. Hickman<sup>2</sup>, A. Pillai<sup>1</sup>

<sup>1</sup>Manchester University NHS Foundation Trust, Trauma & Orthopaedics, Manchester, United Kingdom

<sup>2</sup>Wrightington, Wigan and Leigh NHS Foundation Trust, Wigan, United Kingdom

P15

**Short to medium term functional and radiological outcomes and complication rates for Intra-articular Calcaneum fracture fixation done using Sinus Tarsi Approach**

A. Gopinathannair<sup>1</sup>, P. Prasad<sup>1</sup>, B. Ayyaswamy<sup>1</sup>, A. Anand<sup>1</sup>

<sup>1</sup>Blackpool Teaching Hospitals NHS Foundation Trust, Trauma & Orthopaedics, Blackpool, United Kingdom

P16

**Weight bear then discharge: A safe management strategy for isolated Weber B lateral malleolus fractures – outcomes of 658 patients**

D.H. Martin<sup>1</sup>, N.T.H. Ng<sup>1</sup>, B. Armstrong<sup>1</sup>, J. Brennan<sup>1</sup>, T. Feng<sup>1</sup>, K. Lekuse<sup>1</sup>, T.O. White<sup>1</sup>, S.P. Mackenzie<sup>1</sup>

<sup>1</sup>Edinburgh Orthopaedics, Royal Infirmary of Edinburgh, Edinburgh, United Kingdom

P17

**Bone tumours of the foot & ankle: an analysis of 131 cases**

T. Ankers<sup>1</sup>, T. Paavana<sup>1</sup>, B. Trevor<sup>2</sup>, C. Heaver<sup>1</sup>, P. Cool<sup>1</sup>

<sup>1</sup>Robert Jones Agnes Hunt Orthopaedic Hospital, Gobowen, United Kingdom

<sup>2</sup>Liverpool Medical School, Liverpool, United Kingdom

P18

**Moderate and severe coronal plane deformity corrected with the Infinity ankle prosthesis**

H. Tribe<sup>1</sup>, K. Pearce<sup>1</sup>, H. Fraig<sup>1</sup>, H. Taylor<sup>1</sup>

<sup>1</sup>University Hospitals Dorset, Bournemouth, United Kingdom

P19

**Achilles tendon ruptures and venous thromboembolism - UK Foot and Ankle Thrombo-Embolic Audit (UK-FATE)**

J. Mangwani<sup>1</sup>, L. Mason<sup>2,3</sup>, L. Houchen-Wolloff<sup>1</sup>, K. Malhotra<sup>4</sup>

<sup>1</sup>University Hospitals of Leicester NHS Trust, Leicester, United Kingdom

<sup>2</sup>Liverpool University Hospitals NHS Foundation Trust, Liverpool Orthopaedic and Trauma Service, Liverpool, United Kingdom,

<sup>3</sup>University of Liverpool, Institute of Health and Ageing, Liverpool, United Kingdom

<sup>4</sup>Royal Orthopaedic Hospital, Stanmore, United Kingdom

P20

**Anterior translation post anterior pilon fixation. Are we missing something?**

J. Mcevoy<sup>1</sup>, A. Goma<sup>1</sup>, L. Mason<sup>1,2</sup>

<sup>1</sup>Liverpool University Hospitals NHS Foundation Trust, Liverpool Orthopaedic and Trauma Service, Liverpool, United Kingdom,

<sup>2</sup>University of Liverpool, Institute of Health and Ageing, Liverpool, United Kingdom



**POSTERS**  
**ABSTRACT DETAILED**

## P1

### The importance of pre-operative CT imaging in posterior malleolus fixation and clinical outcomes

C. de Wet<sup>1</sup>, R. Hackney<sup>2</sup>, R. Clayton<sup>2</sup>, S. Middleton<sup>2</sup>

<sup>1</sup>Edinburgh Medical School, Edinburgh, United Kingdom

<sup>2</sup>NHS Lothian, Edinburgh, United Kingdom

**Background:** The treatment of ankle fractures with associated posterior malleolar fractures remains controversial. The aim of this retrospective study was to establish the importance of pre-operative CT imaging to identify fracture morphology and characterise die-punch fragment size and position. We aim to present clinical outcomes including infection, rates of revision and incidence of radiographic evidence of post-operative arthritis.

**Methods:** We reviewed 323 consecutive patients from a trauma database of all ankle fractures managed in a trauma and orthopaedic department between January 2019 and December 2020. A total of 66 patients had posterior malleolus fractures. Imaging was reviewed using CareStream and data recorded using Excel.

**Results:** The mean age of patients was 52 years (range, 15-86 years). There was a 3:1 female to male preponderance. The majority of fractures were Lauge-Hansen SER (79%) with the remainder being 18% PER and 3% SAD. The posterior malleolar fragment was fixed in 70% of patients. 91% were fixed through a posterolateral approach using either a locking plate (65%), 1/3 tubular plate (7%), or posterior to anterior screws (20%). 9% were fixed using anterior to posterior screws.

Die-punch fragments were identified in 88% with a mean size of 8mm (range, 2-19mm). The majority were largest on the axial (36%) or sagittal (33%) plane.

Only one patient (1.5%) had a post-operative infection requiring further surgery. 6% patients had metalwork removal due to irritation. 1 patient (1.5%) underwent revision for failure. 14% patients developed radiographic changes of osteoarthritis (89% Kellgren and Lawrence grade 1, 11% grade 3).

**Conclusion:** Die-punch fragments are common and therefore the use of pre-operative CT imaging is necessary to allow their identification to allow anatomic reduction. Utilising a posterior approach to fix these fractures comes with a low risk of infection 1.5% and low rates of failure 1.5%.

## P2

### Preoperative anxiety and depression are associated with poorer patient-reported outcome following total ankle replacements

J.M. Leow<sup>1</sup>, P.Y. Wong<sup>2</sup>, H. Shalaby<sup>1</sup>, J. Mckinley<sup>1</sup>

<sup>1</sup>Edinburgh Orthopaedics, Edinburgh, United Kingdom, <sup>2</sup>NHS Lothian, Edinburgh, United Kingdom

**Introduction:** Patients with pre-operative anxiety/depression have been shown to have inferior patient reported outcome measures (PROMs) in major joint arthroplasty. There is some evidence to show that patients with anxiety/depression have inferior SF36, AOFAS and VAS scores following total ankle replacements (TAR). However, these outcomes are not validated for ankle surgery. The aim of this study is to investigate the effect of anxiety/depression on PROMs using the Manchester-Oxford Foot Questionnaire (MOXFQ) following TAR.

**Methods:** This is a retrospectively reviewed cohort study using prospectively collected PROMs data from a single centre from 2012 to 2023. Anxiety/depression was assessed using the EQ-5D-3L. MOXFQ was used to assess outcome after TAR. Questionnaires were completed by patients pre-operatively and 1-year post-operatively. MOXFQ between patients with and without anxiety/depression were compared using two-tailed T-test with significance taken at  $p < 0.05$ .

**Results:** 113 primary TARs were available for analysis. Mean follow-up time was 3.0 years (SD 2.5). Pre-operatively, 78(69.0%) patients reported no anxiety/depression, 35(31%) reported moderate/severe anxiety/depression. There is significant difference between pre-operative MOXFQ scores for patients with and without anxiety/depression ( $84.2 \pm 12.9$  vs  $71.7 \pm 13.2$  respectively,  $p < 0.001$ ). This significance persisted in post-operative MOXFQ scores (patients with anxiety/depression =  $42.0 \pm 31.1$ , patients without anxiety/depression =  $23.3 \pm 23.8$ ;  $p = 0.001$ ). The improvement in MOXFQ before and after TAR was significant for both groups at  $p < 0.001$ . There were no significant difference between the two groups ( $p = 0.249$ ) when considering the degree of change from pre- to post-operative MOXFQ scores.

**Conclusion:** This is the first study assessing the effect of anxiety/depression on an ankle surgery-specific PROM after TAR. Our results agree with previous literature in suggesting that PROMs are modulated by baseline mental health state in TAR patients. However, both groups report similar improvement in PROMs after TAR, and this should be considered when counselling patients pre-operatively.

## P3

### Long-term follow up of TAR in patients with juvenile idiopathic arthritis

J.G. Kimani<sup>1</sup>, C. Loizou<sup>2</sup>, R. Brown<sup>2</sup>, B. Sharp<sup>2</sup>, A. Kendal<sup>1,2</sup>

<sup>1</sup>University of Oxford, Oxford, United Kingdom, <sup>2</sup>Nuffield Orthopaedic Centre, Oxford, United Kingdom

**Background:** Juvenile idiopathic arthritis (JIA) is a chronic immune-mediated arthropathy characterised by its early-onset and multi-joint involvement. Ankle arthritis secondary to JIA is functionally debilitating. In those patients with end-stage disease, the surgical options include ankle arthroplasty or fusion. Total ankle replacement (TAR) has the perceived advantage of maintaining ankle-hindfoot movement in a patient group with widespread joint involvement.

**Methods:** We performed a single centre study of all patients with JIA receiving a TAR since 2000. The primary outcome measure was revision surgery. Secondary outcome measures included radiographic evidence of failure and PROMS.

**Result:** 26 TAR (12 Mobility and 14 STAR) were performed in 17 patients with JIA (mean age 40.4 years; range 21-63). There was radiographic evidence of failure in 50% of TAR. Typically TAR failed with total talar collapse. 31% of TAR were surgically revised to fusion in all but one case. The 10 and 15 year survival rates were 70% and 30%, respectively.

Radiographic failure was associated with a raised MOXFQ score (median = 43) compared to patients with normal TAR radiographs (median = 33.5) and those that underwent revision (median = 35.5).

Despite 77% of TAR for JIA remaining painful, 86% reported an improvement in pain post-TAR and 71% would recommend the operation to a friend/family member with the same condition. In a global assessment of joints, 48% rated it as "one of their better joints".

**Conclusion:** TAR in the context of JIA is associated with high rates of radiographic failure (including talar collapse), high revision rates and poor MOXFQ scores. However, patient satisfaction from this treatment remains high in the context of their global joint disease.

## P5

### Does the underlying cause of arthritis affect the outcome of total ankle replacement? A 10 year follow up study

A. Pujol Nicolas<sup>1</sup>, A. Porter<sup>1</sup>, J. Ramaskandhan<sup>1</sup>, S. Hakeem<sup>1</sup>, M. Siddique<sup>1</sup>

<sup>1</sup>Freeman Hospital, Newcastle Upon Tyne, United Kingdom

**Background:** Total ankle replacement (TAR) is gaining popularity as a treatment option for end stage arthritis. We analysed whether the underlying pathology leading to the arthritis has any bearing on patient reported or clinical outcomes.

**Methods:** Patient-reported outcome measures (PROMs) for TAR performed from 2006 to 2010 by a single surgeon were reviewed. This included WOMAC score, SF-36 and patient satisfaction scores. Data was collected preoperatively and post-operatively at 1, 2, 5 and 10 year. The indications for TAR were obtained by review of clinical notes and radiographs and these included osteoarthritis (OA), inflammatory arthritis (IA), pilon fracture (PF), ankle fracture (AF), and post-traumatic arthritis without previous fracture (PTOA).

**Results:** PROMs were available for 156 TARs: 81 (51.9%, mean age 65.29) for OA, 28 (17.9%, mean age 65.29) for AF, 23 (14.7%, mean age 64.28) for IA, 11 (7%, mean age 55.01) for PF, and 13 (8.3%, mean age 51.08) for PTOA. At 1 year WOMAC score showed significant worsening pain and stiffness on PTOA group ( $p = 0.023$ ,  $p = 0.001$ ) and worse general health and vitality for the IA group ( $p = 0.0025$ ,  $p = 0.005$ ). At 5 years The PTOA group showed significant worsening stiffness ( $p = 0.048$ ), social and emotional domains ( $p = 0.004$ ,  $p = 0.029$ ) and worsening pain, return recreational activities and surgery dissatisfaction ( $p < 0.05$ ,  $p = 0.032$ ,  $p = 0.023$ ). At 10 years 50% of IA patients were unhappy with return to ADLs but no other difference were found between groups. There was a higher revision rate at 10 years in the PTOA group with 30.7% of patients being revised (4/13) compared to other groups (OA-6.17%, AF-3.57%, IA-4.35%, PF-9%)

**Conclusion:** Similar outcomes in all groups were seen at 10 years but higher revision rates were present in PTOA group. In patients with PTOA careful consideration and counselling is needed prior to proceed with TAR.

P6

### Chevron vs transverse cut comparison in minimally invasive hallux valgus correction. Does the osteotomy affect outcome?

T. Lewis<sup>1</sup>, R. Ray<sup>1</sup>, D. Gordon<sup>2</sup>

<sup>1</sup>King's College Hospital NHS Foundation Trust, Trauma and Orthopaedics, London, United Kingdom

<sup>2</sup>The London Clinic, London, United Kingdom

**Background:** There has recently been a move to utilising distal transverse osteotomies (META) rather than chevron osteotomies (MICA) during minimally invasive hallux valgus surgery (MIS HV). The aim of this study is to investigate if there are any differences in union rates or clinical outcomes between these two techniques.

**Methodology:** A retrospective comparative analysis of a single surgeon research registry containing prospectively collected patient reported outcomes for patients undergoing MIS HV. Patients with minimum two year follow up were divided into two cohorts based on which osteotomy technique was used. Outcome measures were union rates and clinical outcomes (assessed using the Manchester-Oxford Foot Questionnaire, a validated outcome measure).

**Results:** Between 2014-2018, 292 feet underwent MICA and between 2019-2021 228 feet underwent META. The symptomatic delayed union rate was higher in the META cohort compared to the MICA cohort (4.4% vs 1.5%) but not statistically significant (p=0.07). The revision for non-union rate was also higher in the META cohort compared to the MICA cohort (2.6% vs 1.2%) but not statistically significant (p=0.30). There was no statistically significant difference between the two cohorts in any of the MOXFQ domains at final follow up (p>0.05).

**Conclusion:** There was a higher, but not statistically significant, rate of symptomatic delayed union and revision for non-union in patients undergoing MIS HV with a transverse osteotomy compared to those treated with a chevron osteotomy.

P7

### 7 to 9 year survivorship of 106 fixed bearing total ankle replacements

M. Dahill<sup>1</sup>, M. Kostusiak<sup>2</sup>, M. Dean<sup>3</sup>, A. Hughes<sup>3</sup>, R Kakwani<sup>2</sup>, A Murty<sup>2</sup>, D. Townshend<sup>2</sup>, I. Sharpe<sup>3</sup>

<sup>1</sup>Bristol Royal Infirmary, Bristol, United Kingdom

<sup>2</sup>Northumbria Healthcare Foundation Trust, Newcastle, United Kingdom

<sup>3</sup>Royal Devon and Exeter Hospital, Exeter, United Kingdom

We report the mid-term outcomes of a prospective series of fixed bearing total ankle replacements (TAR), from two non-designer centres. The primary aims were to assess survivorship and adverse events, including complications and re-operations. The secondary aims were to assess functional and radiological outcomes.

Data was collected prior to surgery and at annual follow up appointments, for patients operated on between March 2014 and December 2016. Implant survivorship, complications, reoperations and patient reported outcome scores (PROMS) were collected. Radiological data was also collected.

102 patients, comprising 106 TAR, were included in the study. Mean age at implantation was 68 years (range 42 to 89). Mean follow up time was 98 months (range 83 to 113). 4 patients were lost to follow up and 12 patients died. Mean age at the time of surgery for the 12 deceased patients was 84 years and the mean follow up time was 59 months.

12 patients received further surgeries; 8 revision TAR, 3 biopsy and grafting of talar cysts, and 1 capsular release. The reasons for revision surgery were unexplained pain (5 patients), proven deep infection (1 patient), tibial subsidence (1 patient) and instability (1 patient). Mean time to revision surgery was 43 months (range 15 to 82). Current survivorship of the cohort is 91% (82 of 90 TAR).

15 patients suffered complications of surgery. 7 patients exhibited delayed wound healing without deep infection, 6 patients sustained intra-operative medial malleolar fractures and 2 patients were diagnosed with chronic regional pain syndrome.

Radiolucencies were seen in 35% of patients. MOXFQ and EQ5D-5L PROMS showed significant post-operative improvements (p < 0.01).

6 to 9 years represents the longest follow up of this fixed bearing TAR to date. Survivorship is high and significant improvements in disease specific, and general health, PROMS were observed.

P8

### A medium term review of the outcomes of talar osteochondral lesions treated with matrix associated stem cell transplantation

E. Murphy<sup>1</sup>, A. Faustino<sup>1</sup>, M. Curran<sup>1</sup>, S. Kearns<sup>1</sup>

<sup>1</sup>Galway University Hospital, Orthopaedics, Galway, Ireland

**Introduction:** Osteochondral lesions (OCLs) of the talus are a challenging and increasingly recognised problem in chronic ankle pain. Difficulties associated with treating OCLs include lesion location, size, chronicity and problems associated with potential graft harvest sites. Matrix associated stem cell transplantation (MAST) is described for larger lesions >15mm<sup>2</sup> or failed alternative therapies. This cohort study describes a medium term review of the outcomes of talar lesions treated with MAST.

**Methods:** A review of all patients treated with MAST by a single surgeon was conducted. Preoperative radiographs, MRIs and FAOS outcome questionnaire scores were

conducted. Intraoperative classification was undertaken to correlate with imaging. Postoperative outcomes included FAOS scores, return to sport, revision surgery/failure of treatment and progression to arthritis/fusion surgery. Unpaired t test on SPSS, p<0.05.

**Results:** 58 MAST procedures in 57 patients were identified in this cohort. The mean follow up was 5 years. There were 20 females and 37 males, with a mean age of 37 years (SD 9.1). 22 patients had lateral OCLs and 35 medial OCLs. 32 patients had previous surgery and 25 had this procedure as a primary. 15 patients had one failed previous surgery, 9 patients had two, four patients had three previous surgeries and three patients had four previous surgeries. 12 patients had corrective procedures at the time of surgery. Complications: 3 patients went on to have an ankle fusion, 5 had additional arthrofibrotic debridements, 1 patient had a repeat MAST procedure, 1 patients had removal of osteotomy screws for pain, and there were 2 wound complications one at ankle and one at the iliac crest donor site.

**Conclusion:** MAST has demonstrated positive results in lesions which prove challenging to treat, even in a " failed microfracture" cohort. RCT still lacking in field of orthobiologics for MAST.

Longer term follow up required to evaluate durability

P9

### Silastic joint arthroplasty for end stage Hallux Rigidus - a joint preserving alternative

M. Sethi<sup>1</sup>, R. Limaye<sup>1</sup>

<sup>1</sup>University Hospital of North Tees and Hartlepool, Orthopaedics, Stockton-on-Tees, United Kingdom

**Aim:** Osteoarthritis of the first metatarsophalangeal joint affects one in three people over the age of 65 years. Arthrodesis remains the gold standard but it has its own complications. It is associated with adjacent joint arthritis, transfer metatarsalgia and up to 10% non-union rate. The aim of this study was to analyse the outcome of double stemmed silastic joint arthroplasty (Wright-Medical, Memphis, Tennessee, USA) for end stage Hallux Rigidus.

**Methods:** This retrospective analysis included 117 consecutive 1st MTPJ silastic arthroplasties done between January 2016 to February 2023 for end stage Hallux rigidus. There were 77 females and 40 males with a mean age of 65 years (46-82 years). Radiological and clinical assessments were performed, and patient reported outcome measure data (PROMS) and Visual Analogue Scale (VAS) scores were collected pre and post operatively.

**Results:** Findings showed 99.1% survivorship following a silastic joint arthroplasty with a mean follow up of 5 years (6 months-7 years[LN1]). The MOXFQ score improved from a mean of 81 (59.8-100) to 13 (0-57). The mean VAS scores improved from 7.2 (5-10) to 1.5 (0-7) postoperatively. Five patients were lost to follow up. Two patients developed deep infection and one required revision. The other patient with infection was lost to follow up. In total 10 patients (8.9%) developed complications, out of which 8 patients responded to simple treatments.

**Conclusion:** Results have shown good to excellent outcomes following a silastic arthroplasty of the first metatarsophalangeal joint for the treatment of end stage hallux rigidus. The survivorship at a mean follow- up of 5 years was 99.1%. As historically reported, we did not see any soft tissue reaction or progressive osteolysis in any of our patients. It provides comparable and predictable outcomes to joint fusion for end stage arthritis.

## P10

### A Novel method for reconstructing complex diabetic foot wounds using Biodegradable Temporising Matrix (BTM)

M. Nagarajan<sup>1</sup>, V. Lampridis<sup>2</sup>, L. Mason<sup>2</sup>

<sup>1</sup>Liverpool University Hospitals NHS Trust, Plastic Surgery, Liverpool, United Kingdom,

<sup>2</sup>Liverpool University Hospitals NHS Trust, Orthopaedic Surgery, Liverpool, United Kingdom

**Introduction:** Diabetic foot attack (DFA) is a complication in patients with diabetes and one of the main causes of non-traumatic amputations. Biodegradable Temporising Matrix (Novosorb BTM) is a synthetic matrix that helps the organisation of the extracellular matrix and generation of new tissue over complex wounds with exposed tendon and bone.

**Methods:** The aim of this prospective study was to evaluate the efficacy of BTM in the reconstruction of wounds after debridement for DFA. Eight patients with complex diabetic foot wounds (exposed fascia, tendons, bone) had an initial debridement and application of negative pressure wound therapy, followed by BTM reconstruction. Mean age of the cohort was 60 years (Range 45-74) and had BTM reconstruction after partial foot amputations, ray amputations and trans metatarsal amputations. Time to healing, infection rate and incidence of subsequent procedure was analysed.

**Results:** All 8 patients had successful BTM integration with the tissues. Six patients achieved complete wound healing at a median time of 18 weeks. Two patients (25%) underwent a second procedure with skin graft for final wound coverage at 3 months. There were no infections or re-ulceration in our cohort at a mean follow up of 10 months (2-30).

**Conclusion:** Our experience suggests that BTM is a safe and effective treatment for coverage of complex wounds after debridement for DFA. In larger wounds, skin graft speeds up wound coverage, while in small to moderate wounds BTM is a single stage procedure with superior aesthetic and functional outcomes.

**Keywords:** diabetic foot attack, wound coverage, dermal matrix, diabetic foot ulcer

## P11

### Radiological medial safe zone - Protecting the posterior tibial tendon during ankle or pilon fracture fixation

B. Jones<sup>1</sup>, A. Bond<sup>2</sup>, K. Roughneen<sup>2</sup>, L. Mason<sup>1,3</sup>

<sup>1</sup>Liverpool University Hospitals NHS Foundation Trust, Liverpool Orthopaedic and Trauma Service, Liverpool, United Kingdom

<sup>2</sup>University of Liverpool, Human Anatomy and Resource Centre, Liverpool, United Kingdom

<sup>3</sup>University of Liverpool, Institute of Health and Ageing, Liverpool, United Kingdom

**Background:** The surgical treatment of pilon and posterior malleolar fractures can risk damage to the posterior tibial tendon. The lateral safe zone has been confirmed previously to prevent syndesmosis incisura encroachment, however the risks to the tibialis posterior tendon medially has not been investigated.

Our aim in this study was to identify the fluoroscopic safe zone medially, to prevent inadvertent injury to the tibialis posterior tendon during both direct and indirect fixation techniques.

**Methods:** A cadaveric study was performed using 9 fresh frozen cadaveric specimens. A medial posteromedial approach was performed on each specimen to expose the tibialis posterior sheath. A flexible wire was placed down the lateral aspect of the tibialis posterior sheath as a radio opaque marker. Fluoroscopic imaging was performed in the anteroposterior and lateral position to identify a medial safe zone.

**Results:** In all specimens, the wire was located medial to a vertical line corresponding to the articular surface (the medial safe zone line) of the medial malleolus on anteroposterior imaging. On lateral imaging, the radiopaque marker followed the medial malleolus obliquity and continued to correspond to 30% of the posterior plafond.

**Conclusion:** This study demonstrated that a medial safe zone fluoroscopic landmark is unambiguous in localizing the tibialis posterior sheath and that any metal work medial to this line is likely to be at risk of damaging the tibialis posterior tendon. The lateral radiograph showed that any anteroposterior screw could involve the tibialis posterior sheath even if the penetration is only 70% across the tibial width.

**Clinical relevance:** This article describes a radiographic and clinical safe zone for fixation and hardware placement during open reduction internal fixation (ORIF) of PMFs. This information will assist surgeons in avoiding posterior tibial hardware placement.

## P12

### The patient and surgical factors specific to patients not receiving anticoagulation when undergoing foot and ankle surgery in the UK - UK-FATE Audit

K. Malhotra<sup>1</sup>, J. Mangwani<sup>2</sup>, L. Mason<sup>3,4</sup>, L. Houchen-Wolloff<sup>2</sup>

<sup>1</sup>Royal Orthopaedic Hospital, Stanmore, United Kingdom

<sup>2</sup>University Hospitals of Leicester NHS Trust, Leicester, United Kingdom

<sup>3</sup>Liverpool University Hospitals NHS Foundation Trust, Liverpool Orthopaedic and Trauma Service, Liverpool, United Kingdom

<sup>4</sup>University of Liverpool, Institute of Health and Ageing, Liverpool, United Kingdom

**Introduction:** Although the rate of VTE after foot and ankle surgery is low, there are multiple factors influencing the risk for individual patients. Furthermore, there are no clear guidelines on which patients may benefit from chemical thromboprophylaxis (CTP). Our aim was to assess patients not treated with chemical thromboprophylaxis when undergoing foot and ankle surgery, to report on their specific patient and surgical risk factors for VTE.

**Methods:** This was a multi-centre, prospective, national audit of patients undergoing foot and ankle surgery (including Achilles tendon ruptures) from 68 participating UK centres. The study was from 1st June 2022 and 30th November 2022, with a further 3-month follow up. Data on a total of 13,569 patients was submitted. Following data cleansing, 11,363 patients were included for further analysis.

**Results:** CTP was not given in 3,717 (32.71%) patients. The overall VTE rate in patients without prophylaxis was 0.36% (13 cases) versus 1.1% (86 cases) in patients given CTP (Odd's ratio 3.18, p<0.001). Overall, 2,876 elective patients (56.5%), 551 trauma patients (11.5%), 148 acute diabetic foot patients (37.2%), 142 Achilles rupture patients (13.1%) did not receive CTP, with VTE rates 0.1%, 0.5%, 0.0%, and 4.2% respectively (Odd's ratio 38.2 for Achilles ruptures, p<0.001). In patients not receiving prophylaxis, a smaller proportion had increased surgical urgency (20.7% vs 59.7%, p<0.001), were non-weightbearing (8.5% vs 74.3%, p<0.001), or required post-operative splintage (24.5% vs 79.7%, p<0.001) compared to those not receiving CTP.

**Conclusion:** Patients not receiving CTP in this audit had a low incidence of VTE. Without adjustment for variables, this is lower than patients given prophylaxis. However, these patients represent a curated group considered lower risk - including less urgent surgery, early weightbearing and lack of post-operative splinting. Despite these factors Achilles tendon ruptures were associated with a significantly higher VTE rate.

## P13

## P13

### Soft tissue sarcomas of the foot and ankle: a 12 year Sarcoma Centre experience

T. Paavana<sup>1</sup>, T. Ankers<sup>1</sup>, P. Cool<sup>1</sup>, C. Heaver<sup>1</sup>

<sup>1</sup>The Robert Jones and Agnes Hunt Orthopaedic Hospital, Oswestry, United Kingdom

**Introduction:** Soft tissue sarcomas of the foot and ankle are a rarely encountered condition. We report a 12 year experience at a Sarcoma Centre.

**Methodology:** A retrospective review of prospectively gathered electronic database was performed from January 2011 to December 2022. Of 265 referrals, 14 (5%) sarcomas (7 males, 7 females) were identified. Excel and R was used for analysis.

**Results:** Mean age at diagnosis was 42 (range 10-80) years. Eleven of these had a clear history of pain documented. Duration of reported symptoms ranged widely from 4-60 (mean 20) months. Five diagnoses were unexpected following excision performed elsewhere.

Synovial Sarcoma was most frequently identified (6), followed by Clear Cell Sarcoma (2). Others observed were Sarcoma NOS (2), Low Grade Fibromyxoid Sarcoma (1), Leiomyosarcoma (1), Myxofibrosarcoma (1) and Extraskelatal myxoid chondrosarcoma (1). The most common location was the midfoot (6), followed by the ankle (4) and hindfoot (4). No forefoot lesions were identified.

Most lesions were high (9) or intermediate (4) grade; One was low grade. One patient had metastases at referral following local excision elsewhere and underwent palliative chemotherapy. Primary surgical treatment modalities included below knee amputation (6), ray amputation (2), limb salvage surgery (6). Three patients underwent adjuvant radiotherapy. No significant difference was observed between limb salvage and amputation groups.

Overall survival at 2 years was 78%; 5 year survival was 69%. Two patients developed local recurrence and subsequent metastases. A further three patients developed metastases without local recurrence. The presence of local recurrence or metastases conferred a poor prognosis (p=0.021).

**Conclusion:** Soft tissue sarcomas of the foot and ankle are rare. The history of a painful lesion should raise clinical suspicion. Long duration of symptoms is not necessarily reassuring. Development of local recurrence or metastases is a poor prognostic sign and may inform patient discussion.

P14

### Pedal medial artery calcification score as a prognostic marker for the success of surgical intervention in diabetic foot disease

T. Collins<sup>1</sup>, D. Hickman<sup>2</sup>, A. Pillai<sup>1</sup>

<sup>1</sup>Manchester University NHS Foundation Trust, Trauma & Orthopaedics, Manchester, United Kingdom

<sup>2</sup>Wrightington, Wigan and Leigh NHS Foundation Trust, Wigan, United Kingdom

**Aim:** Medial artery calcification (MAC) has been strongly associated with diabetes and has been linked to an increased risk of complications of diabetes such as amputation, as well as overall mortality. Scoring systems for grading the severity have recently been developed and used to show that MAC can be linked to worse outcomes in diabetic foot ulceration (DFU) treatment. Our primary aim was to investigate for a causal link between severity of pedal medial artery calcification (pMAC) and the success of surgical interventions in the treatment of DFU. Our secondary aim was to compare pMAC and traditional vascular studies used in the pre-operative assessment for surgical interventions in DFU.

**Method:** A single-centre retrospective observational study was performed for all patients who had undergone debridement or amputation for DFU between October 2019 and March 2023. Subjects were given a pMAC score using the Ferraresi classification. Doppler ultrasound studies were also recorded to assess for the presence of peripheral artery disease (PAD). Any further surgeries on the affected limb were recorded, as were outcomes based on available follow-up data.

There was a significant variation in the proportion of AF and TAR with the ratio of AF:TAR varying more than two-fold. The number of patients that underwent surgery was 19.2% lower in 2022 compared to 2017 (2242 v 2774).

Expressed as a percentage of total volume of cases, the proportion of TAR performed for end stage arthritis was significantly higher in 2022 than in 2017 (31.0% v 26.3%, p<0.001)

**Results:** 0 limbs were identified. 73% had no pMAC, 16% had moderate pMAC and 11% had severe pMAC. Limbs with pMAC were more likely to need multiple surgeries (no pMAC – 37%, moderate pMAC – 55%, severe pMAC – 50%), with amputation twice as likely (42%, n=8) vs the no pMAC group (20%, n=10). 74% of the groups with pMAC had no indicators of PAD in the legs.

**Conclusion:** Our study suggests a worse prognosis for DFU with increasingly severe pMAC and worse outcomes from DFU-related surgery with increasingly severe pMAC. Vascular studies were often very inconsistent and few patients had vascular studies distal to the ankle. Pedal MAC has the potential to be an important prognostic indicator for DFU-related surgery.

P15

### Short to medium term functional and radiological outcomes and complication rates for Intra-articular Calcaneum fracture fixation done using Sinus Tarsi Approach

A. Gopinathannair<sup>1</sup>, P. Prasad<sup>1</sup>, B. Ayyaswamy<sup>1</sup>, A. Anand<sup>1</sup>

<sup>1</sup>Blackpool Teaching Hospitals NHS Foundation Trust, Trauma & Orthopaedics, Blackpool, United Kingdom

**Introduction:** The extensile lateral approach for calcaneum fracture fixation has high complication rates of about 25%-30%. Sinus Tarsi approach is a minimally invasive surgical technique for fixing calcaneal fractures with minimal wound complications.

**Aim:** The study is to access the Short to Medium term Functional and Radiological outcome and complication rates for Intra-articular Calcaneum fracture fixation using Sinus Tarsi Approach.

**Materials & Methods:** Retrospective study of 27 patients with intra-articular displaced Calcaneum fractures fixed using Sinus Tarsi approach from 2015 - 2022. All patients had pre-operative radiographs, CT scans and appropriate DVT prophylaxis. We used Sanders classification and Pre and post operative Bohler's angle measurements. The functional outcome was measured using MOxFQ scores and looked at complications rates including Sub-Talar fusion rates.

**Results:** Our study had a male to female ratio of 4:1 with mean age of 48 years (22 - 79) with 1 to 8 years follow up. Ten patients were active smokers. The mean pre operative Bohler's angle was 9.41 +/- 8.2, achieved post operative Bohler's angle was 27.5 +/- 5 with an improvement in the Bohler's angle of 18 +/- 3.5, which is statistically significant (P value < 0.0001). The mean MOxFQ score is 55.93 ( 27.8 - 78.3). We had one patient with wound infection requiring implant exit. 8 patients had radiological evidence of arthritis but none required fusion. Most patients were able to return to their pre injury occupation apart from 5 patients.

**Conclusion:** Minimally invasive Calcaneal fracture fixations using sinus tarsi approach has shown significant restoration of Bohler's angle with minimal complication rate. Although 30% of patients has got mild to moderate arthritis, none of the patients needed revision in a short to medium term follow up. Patients had fair to good functional outcome with good radiological outcome and less revision rates.

P16

### Weight bear then discharge: A safe management strategy for isolated Weber B lateral malleolus fractures – outcomes of 658 patients

D.H. Martin<sup>1</sup>, N.T.H. Ng<sup>1</sup>, B. Armstrong<sup>1</sup>, J. Brennan<sup>1</sup>, T. Feng<sup>1</sup>, K. Lekuse<sup>1</sup>, T.O. White<sup>1</sup>, S.P. Mackenzie<sup>1</sup>

<sup>1</sup>Edinburgh Orthopaedics, Royal Infirmary of Edinburgh, Edinburgh, United Kingdom

**Background:** Myriad protocols exist for the evaluation of isolated Weber B lateral malleolus fractures that demonstrate a congruent tibiotalar joint on initial radiographic evaluation. Manual stress, gravity stress and weight-bearing radiographs, all at various timepoints, may be employed to identify those injuries that develop significant talar shift but consensus is elusive. This study outlines a safe and reproducible protocol for such injuries, utilising a removable orthosis, immediate weight bearing and standard supine radiographs.

**Method:** A retrospective analysis of a prospective trauma database was analysed to identify patients with an isolated Weber B ankle fracture with adequate presentation radiographs demonstrating a congruent mortise. Patient records and radiographs were evaluated a minimum of 5 years after initial presentation to determine ankle stability, complications, and the burden on outpatient services.

**Results:** Between 2014 and 2016, 657 patients were referred to the specialist trauma clinic from the emergency department. Of the 657, 52 patients had inadequate ED radiographs to determine ankle congruity. At the two-week assessment, 11 of the 52 demonstrated talar shift and required intervention. Therefore 646 patients demonstrated ankle congruity at two weeks after weight bearing. No patient demonstrated talar shift at the six-week assessment. Average number of follow up appointments was 2.4 with 3.5 radiographs. Our new treatment protocol advocates discharge after a single orthopaedic assessment after two weeks of weight bearing. This protocol will reduce outpatient appointments and radiographic series by 58% and 43% respectively.

**Conclusion:** This study supports immediate weight-bearing of Weber B ankle fractures with a congruent mortise in an orthosis. Follow up beyond two weeks is unnecessary and our protocol offers a safe means of significantly reducing the outpatient burden.

P17

P17

### Bone tumours of the foot & ankle: an analysis of 131 cases

T. Ankers<sup>1</sup>, T. Paavana<sup>1</sup>, B. Trevor<sup>2</sup>, C. Heaver<sup>1</sup>, P. Cool<sup>1</sup>

<sup>1</sup>Robert Jones Agnes Hunt Orthopaedic Hospital, Gobowen, United Kingdom

<sup>2</sup>Liverpool Medical School, Liverpool, United Kingdom

**Background:** Bone tumours are a broad group of conditions that may present to foot and ankle surgeons. They range from benign problems requiring only reassurance, to rare but potentially life-threatening conditions. In this study we summarise the typical features of bone tumours of the foot and ankle. By doing so we aim to help medical professionals identify and triage lesions at the earliest possible opportunity.

**Methods:** A retrospective review of cases presenting to a specialist bone tumour unit was undertaken. Inclusion criteria were primary bone tumours, both benign and malignant, metastases and haematological cancers. Excluded were tumour mimickers such as infection. Data on patient demographics, presentation, investigations including histology and subsequent management were collected.

**Results:** 131 cases were included between 25th March 2010 and 23rd February 2023. Mean follow up was 15 weeks. There were 99 benign lesions and 32 malignant lesions. The most common benign lesions were enchondroma, osteochondroma and osteoid osteoma. Malignant lesions included 9 cases of metastasis, 6 cases of lymphoma and 17 primary malignant bone tumours. This latter group comprised 9 chondrosarcomas, 4 Ewings sarcomas and 4 osteosarcomas. Surgery was the mainstay of treatment for malignant primary bone tumours. There were 4 deaths with a 1 year survival of 87.5% and 3 year survival of 75%.

**Conclusion:** Thankfully the majority of bone tumours of the foot and ankle are benign however the morbidity and mortality associated with malignant lesions is high. A delay in diagnosis may compromise management options or lead to an avoidable death. A high index of suspicion and early discussion with a tumour centre is recommended.

P18

### Moderate and severe coronal plane deformity corrected with the Infinity ankle prosthesis

H. Tribe<sup>1</sup>, K. Pearce<sup>1</sup>, H. Fraig<sup>1</sup>, H. Taylor<sup>1</sup>

<sup>1</sup>University Hospitals Dorset, Bournemouth, United Kingdom

Selected ankle arthroplasty implants have been shown to be suitable for patients with end-stage ankle arthritis and significant coronal plane deformity. The outcomes using the Infinity prosthesis in this patient group are currently unknown. Our aim was to evaluate the outcomes of patients undergoing ankle arthroplasty using the Infinity prosthesis with a preoperative coronal plane deformity of 10-20 degrees (moderate) and 20 degrees or greater (severe).

We identified patients who had undergone a primary ankle arthroplasty from 2014 to 2022. From the total of 103 patients, 25 patients had a moderate deformity (10-20 degrees) and four patients had a severe deformity (>20 degrees). Of these patients, 17 (59%) patients had a varus deformity and 12 (41%) had a valgus deformity. The mean age was 72 years. Mean length of follow-up was 34 (range 12-71) months.

The mean preoperative coronal plane deformity was 15.84 (range 10.4 to 29.7) degrees. The mean immediate post-operative deformity was 1.8 (range 0.2 to 6.5) degrees. The mean deformity at final follow-up was 3.8 (range 0.3 to 12.5) degrees. The difference between preoperative deformity and final correction was statistically significant ( $p < 0.0001$ ). There was no significant difference between initial and final postoperative correction, nor between the moderate and severe groups. Overall, recurrence of coronal plane deformity occurred in 3 patients (10.3%). Manchester-Oxford Foot Questionnaire scores and visual analogue scale scores were recorded at final follow-up and the scores were equivalent to previously published data. Correction of the coronal plane deformity was achieved by using intraoperative soft-tissue balancing, including lateral ligament reconstruction in three patients. Tibial bone cysts were seen in two patients, leading to tibial tray subsidence in one patient.

Stable correction of moderate and severe coronal plane deformity in end-stage ankle arthritis can be reliably achieved with the infinity prosthesis using only soft-tissue balancing procedures.

P19

### Achilles tendon ruptures and venous thromboembolism - UK Foot and Ankle Thrombo-Embolic Audit (UK-FATE)

J. Mangwani<sup>1</sup>, L. Mason<sup>2,3</sup>, L. Houchen-Wolloff<sup>1</sup>, K. Malhotra<sup>4</sup>

<sup>1</sup>University Hospitals of Leicester NHS Trust, Leicester, United Kingdom

<sup>2</sup>Liverpool University Hospitals NHS Foundation Trust, Liverpool Orthopaedic and Trauma Service, Liverpool, United Kingdom,

<sup>3</sup>University of Liverpool, Institute of Health and Ageing, Liverpool, United Kingdom

<sup>4</sup>Royal Orthopaedic Hospital, Stanmore, United Kingdom

**Introduction:** Although VTE rates are considered low after foot and ankle surgery, Achilles tendon ruptures have a higher reported incidence of VTE. However, there is an absence of agreement on contributing risk factors in the development of VTE and whether thromboprophylaxis is required. Our aim was to assess specific patient and surgical factors in patients with Achilles tendon ruptures developing VTE.

**Methods:** This was a multi-centre, prospective, national audit running from 1st June to 30th November 2022, with a further 3-month follow-up period. All foot and ankle operations and Achilles tendon ruptures were included, from 68 contributing UK centres. Primary outcomes included symptomatic VTE up to 90 days following Achilles tendon rupture treatment and VTE related mortality up to 90 days following treatment.

**Results:** There were 808 Achilles tendon ruptures which underwent conservative management (74.40%) and 278 which underwent surgery (25.60%). The VTE incidence in conservatively treated Achilles ruptures was 4.08% compared to 2.52% in surgically treated ruptures, although the difference was not statistically significant ( $p=0.232$ ). There were no VTE related mortalities.

There was no significant difference between those who were weightbearing and those who were not ( $p=0.152$ ), and no significant difference between those treated in plaster compared to those treated in a boot ( $p=0.652$ ). The VTE rate was no different in those with and without anticoagulation ( $p=0.627$ ) and the duration of anticoagulation was similar between groups. There was no difference in number of comorbidities or ASA grade between the groups. There was a slightly higher average age in the VTE group (54.35 vs 48.20 years,  $p=0.003$ ).

**Conclusion:** The incidence of symptomatic VTE in Achilles tendon ruptures is high compared to other foot and ankle diagnoses. Apart from age, this study could not identify any obvious factors which increase the risk of VTE following Achilles tendon ruptures.

P20

### Anterior translation post anterior pilon fixation. Are we missing something?

J. Mcevoy<sup>1</sup>, A. Gomaa<sup>1</sup>, L. Mason<sup>1,2</sup>

<sup>1</sup>Liverpool University Hospitals NHS Foundation Trust, Liverpool Orthopaedic and Trauma Service, Liverpool, United Kingdom,

<sup>2</sup>University of Liverpool, Institute of Health and Ageing, Liverpool, United Kingdom

**Introduction:** Anterior pilon fractures are uncommon injuries to the ankle. Fixation of the fracture is commonly undertaken, however concomitant injury to the anterior talofibular ligament (ATFL) is not commonly addressed. There are no current studies assessing talus translation in anterior pilon fractures.

**Objective:** To assess incidence of persistent talus anterior translation in pilon fractures affecting the anterior plafond.

**Methods:** A retrospective analysis of a prospectively collected database in a major trauma centre was undertaken to establish eligible patients. All patients with pilon fractures with anterior components undergoing reduction and fixation were included. Intraoperative and weightbearing postoperative radiographs were assessed for fracture reduction and anterior talus translation. The Topliss Classification was used for pilon type characterisation.

**Results:** A total of 23 patients were identified who could be included in the study. The mean age of patients included in the study was 37.70 years (95% CI 31.74, 43.65). All patients were judged to be anatomically reduced. No patients underwent ATFL reconstruction. There were 13 patients (56.50%) with persistent anterior talus translation. There was no significant difference in persistent talar anterior translation ( $p=.708$ ) between coronal type (58.82%) or sagittal type (50%) pilon fracture as categorised by the Topliss classification.

**Conclusions:** Over half the patients in this study with pilon fractures with an anterior component had persistent anterior talus translation post fixation despite being anatomically reduced. The fracture mechanism to sustain an anterior pilon is likely to injure the ATFL. Ligamentous reconstruction should be considered in anterior pilon fracture types to try and prevent persistent anterior talar translation.

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With over 30 years' experience, we are amongst the top medical billing services in the United Kingdom and a trusted partner to more than 1,800 private consultants, groups, clinics and hospitals, delivering a bespoke, efficient and secure service.



The DePuy Synthes Companies are part of the Johnson & Johnson Family of Companies. We offer one of the world's most comprehensive portfolios of orthopaedic products and services for joint replacement, trauma, spine, sports medicine, cranio-maxillofacial, power tools and biomaterials to advance patient care while delivering clinical and economic value to health care systems worldwide.



Enovis®, one of the leading medical device companies, is committed to partnering with surgeons to bring innovative technologies to the market and elevating the options available to treat patients effectively. Our products cover a wide range of foot and ankle solutions, from total ankle replacement and innovative static fixation to dynamic compression and fusion. Our mission is to bring differing technologies that are backed by science to the market. Our goal as one of the leading medical device companies for foot and ankle is to address and offer patient options through the continuum of care.



Exactech is a global medical device company that develops and markets orthopaedic implant devices, related surgical instruments and the Active Intelligence® platform of smart technologies to its customers. Exactech offers the Vantage Total Ankle Replacement which achieves a new perspective in total ankle arthroplasty by addressing clinical challenges and patient outcomes



IdealMed is a manufacturer and distributor of innovative medical devices for solving complex orthopaedic needs. With a focus on personalised devices we are able to partner with surgeons to bring the best solution to patients



Founded in January 2015, Joint Operations provides a bridge between suppliers of innovative healthcare technologies and clinical teams working within joint & nerve preservation in the UK & Ireland.

Joint Operations partnered with Axogen, are the UK provider of sterilised human nerve graft in a range of lengths and diameters for nerve gap management.



Lavender Medical specialise in supplying innovative extremity products to the orthopaedic community with a particular emphasis on the foot and ankle market. Our organisation represents several leading research-focused manufacturers to bring the latest technology available to the UK. We are dedicated to give the highest level of service to the hospitals and customers that we value and work alongside.

We have a long association with the UK foot and ankle community and are proud to again sponsor the British Orthopaedic Foot and Ankle Society.

We look forward to meeting with delegates and wish you all a successful and rewarding conference!



Marquardt Medizintechnik is based in Spaichingen, Germany. Founded in 1980 since then production has been consistently geared towards medical implants. Thus, Medical engineering solutions by Marquardt Medizintechnik offer the highest level of innovation, quality and service which is the decisive criteria for excellence in medical engineering

Please visit our website – [www.marquardt-uk.com](http://www.marquardt-uk.com) to look at our extensive foot and ankle portfolio.

Email: [Info@marquardt-uk.com](mailto:Info@marquardt-uk.com) Web: [www.marquardt-uk.com](http://www.marquardt-uk.com)



Medartis develops, manufactures and sells titanium screws and plates, surgical instruments and system solutions for fracture fixation. These implants allow for patient rehabilitation after surgical reconstruction of fractures, malunions and deformities or skeletal diseases and their adjacent soft tissues.

Medartis is represented worldwide through its subsidiaries and a broad distributor network.

Our motto is "Precision in fixation".

We place the highest priority on maintaining stringent quality standards, continuous further development and innovation as well as comprehensive service provision for surgeons, theatre staff and patients. This enhances long-term customer relations based on partnerships and has formed the foundation for sustainable success since the company's founding in 1997.

The goal of Medartis is to continually improve early functional rehabilitation through its high-quality products and exclusively developed technologies.



Medray Group and Planmed are excited to exhibit at this year's BOFAS Annual Scientific Meeting. Together, Medray and Planmed will be located at stand B8 showcasing the Planmed Verity Unit; the world's first ever CBCT scanner for weight-bearing orthopedic imaging. Medray Group has successfully grown into a leading supplier of diagnostic imaging products across the UK and Ireland. In recent years, the company has expanded its group portfolio to include some of the most cutting-edge technology within the diagnostic field. Planmed dedicates its effort to the development, manufacturing and marketing of advanced imaging equipment and accessories that provide a unique combination of image quality and ease of use for medical imaging professionals. Be sure to drop by stand B8 and say hello to the Medray & Planmed team



Made in Japan, Primado2 is NSK's second generation electric total surgical system developed to meet strict demands from surgeons. Primado2 makes it possible to conduct a range of surgeries, including Maxillofacial, ENT, Oral, Plastic and Orthopaedic. Features include a control unit with a liquid crystal display touch screen, a multifunctional foot control, a brand new P300 handpiece range only launched in 2020, and extensive attachments including saws and wire driver. P300 handpieces offers surgeons a 6 position variable bur exposure, universal bur length, bur guard and a non slip surface to ensure control is maintained in all conditions.



Manufacturer of Custom Orthotics, AFO's and Customised Footwear.



For over 20 years, OrthoSolutions has been successfully serving and supporting the foot and ankle speciality clinician cohort. OrthoSolutions has always had a clear focus on the needs of foot and ankle speciality clinicians, and to the patients they treat. From Trauma to Salvation, OrthoSolutions have specific solutions which have been collaboratively designed and manufactured. Our aim at OrthoSolutions is to ensure that, 'clinical need' is the primary rationale for innovation and development – Evidence based foot and ankle solutions!



In 2010, Paragon 28® was established as an orthopedic foot and ankle company.

The name "Paragon 28" was chosen to show that we are exclusively a foot and ankle company, with the "28" representing the number of bones in the foot. We will remain true to that vision.

Paragon 28® was started as a small, family-based company and we have kept those core ideals as we have grown. Our first product was the Monster® Screw System, followed by the Gorilla® Plating System.

As we continue to add more products, we maintain a fine level of detail to every feature of every product we design. The goal is to give options to the foot and ankle surgeon, knowing there is more than one way to achieve a great result.

We have listened to surgeons and will continue to do so in order to understand and address their specific needs.



Unlike other providers, Premium Medical Protection offers you the choice between a claims-made or occurrence indemnity policy, giving you the flexibility to choose the best coverage for your specific needs. Your reputation deserves to be protected by the best.

That's why we work with underwriters who are AA+ rated for financial strength\*.

We're here for you every step of the way; supporting you to apply for a policy that suits your needs at a fair price with great coverage. Through to working with our specialist claims team and a panel of healthcare lawyers should you need us.

\*AA+ Jan 2024 by S&P, rating agency (Berkshire Hathaway International Insurance Ltd)



Stryker is dedicated to helping foot and ankle surgeons treat their patients more efficiently while enhancing patient care and the overall healthcare experience.

Constantly driven to innovate, we offer a diverse array of advanced medical technologies and a comprehensive portfolio of products.

We're here for the foot and ankle surgeon. We're here to make healthcare better.

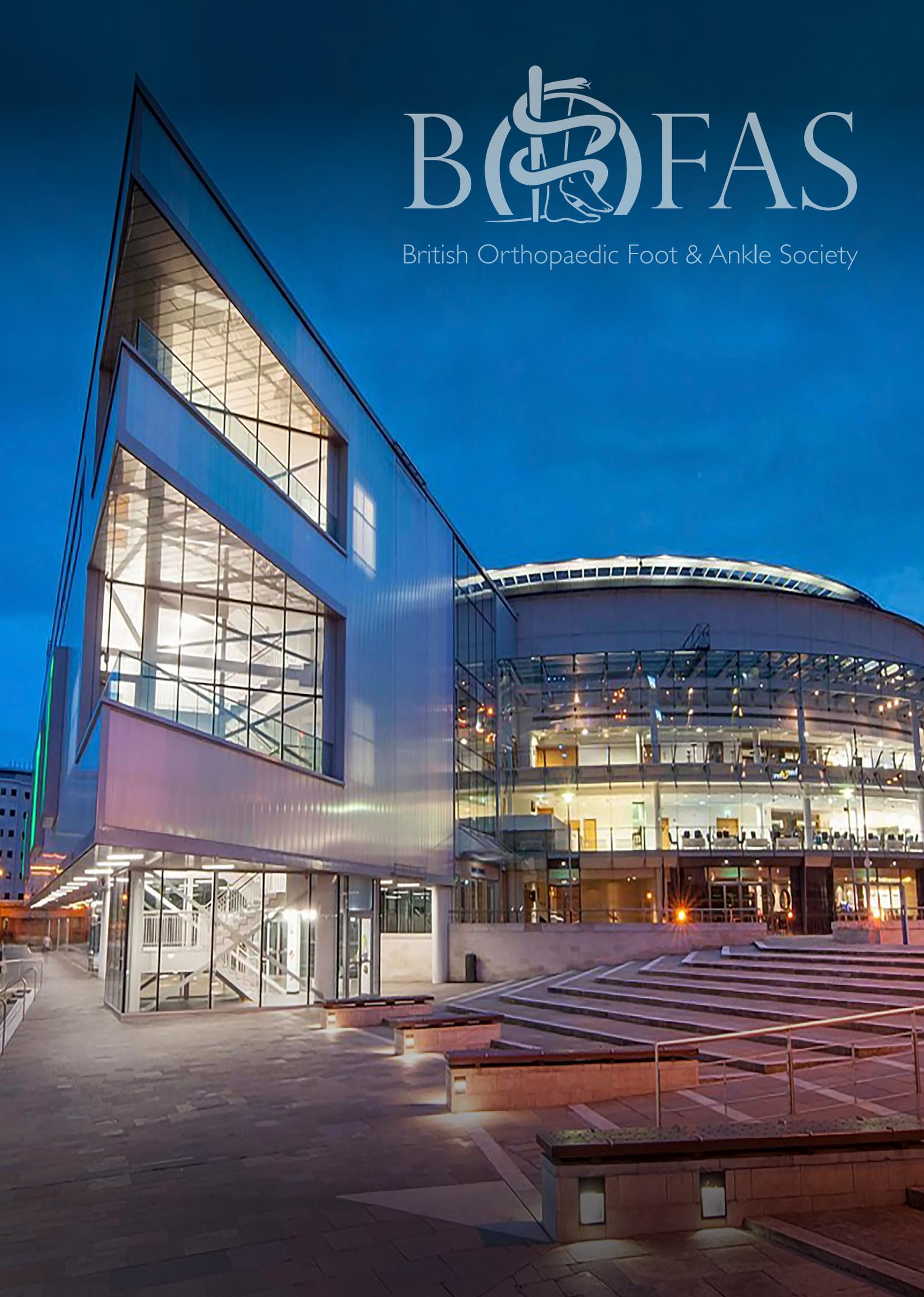


As a dedicated lower extremity company, Vilex truly understands the unique needs that foot and ankle surgeons have while treating patients.

We focus on innovation that is driven by surgeon feedback - delivering a powerful portfolio of products created by surgeons, for surgeons.

At Vilex, we break the mold of a traditional, large device company.

We're reimagining foot and ankle.



# BOFAS

British Orthopaedic Foot & Ankle Society