

Day 1 Wednesday 2nd November

- 08.00 – 08.50 Registration and coffee
08.50 – 09.00 Welcome
- 09.00 – 10.30 Adult flat foot**
Chairs: Anthony Sakellariou, Nick Cullen
- 09.00 – 09.20 Overview
Ian Winson
- 09.20 – 09.50 Osteotomies
Scarf
PH Ågren
Translational
Kartik Hariharan
Column lengths/balance
Chris Walker
- 09.50 – 10.00 Place of the arthroereisis screw
Les Grujic
- 10.00 – 10.10 Acquired - Split Tibialis Anterior/FDL
Bob Sharp
- 10.10 – 10.20 Triple – Considerations
(when Arthroscopic)
Steve Parsons
- 10.20 – 10.30 Discussion
- 10.30 – 11.00 Coffee
- 11.00 – 12.45 Free Papers 1**
Chairs: Matt Solan, Robert Clayton
- 12.45 – 13.45 Lunch
- 13.45 – 15.15 Cavus foot**
Chairs: Patricia Allen, PH Ågren
- 13.45 – 14.05 Overview
Jan Willem Louwerens
- 14.05 – 14.20 Neurology of cavovarus deformity
David Cottrell
- 14.20 – 14.35 Surgical options
Joint preservation
Fred Robinson
- 14.35 – 14.50 Joint sacrificing
Paul Cooke
- 14.50 – 15.05 Toe/forefoot surgery
Chris Blundell
- 15.05 – 15.15 Questions
- 15.15 – 15.45 Coffee
- 15.45 – 17.15 Imaging/Plantar plate**
Chairs: Jan Willem Louwerens, Kartik Hariharan
- 15.45 – 16.05 What's new in foot and ankle imaging
Mike Bradley
- 16.05 – 16.15 Imaging the plantar plate
Martin Williams
- 16.15 – 16.30 Mechanism of plantar plate injury,
Conservative management
Steve Lines
- 16.30 – 17.00 Plantar plate repairs vs Toe repositioning
PH Ågren
- 17.00 – 17.15 Discussion
- 17.15 - 18.00 Poster viewing/reception**

DAY 1 FEEDBACK FORM



Day 2 Thursday 3rd November

- 09.00 – 10.30 Difficult cases**
Bristol Suite Door 2
- 09.00 – 12.00 AHP meeting**
Bristol Suite Door 1
Chairs: Jit Mangwani, Mark Myerson
- 12.15 – 13.00 Research Update 1**
Matt Costa
- 10.00 – 13.00 Workshops
- 10.30 – 11.00 Coffee
- 13.00 – 14.00 Lunch
- 14.00 – 14.25 Free Papers 2**
Chairs: Roland Russell, Anthony Perera
- 14.30 – 15.15 Research Update 2**
Matt Costa
- 15.15 – 15.45 Coffee
- 15.45 – 17.15 Calcaneal fractures**
Chairs: Mike Butler, Andy Riddick
- 15.45 – 16.15 Conservative Vs Surgical debate
Jim Barrie
S Rammelt
- 16.15 – 16.25 Discussion/vote
- 16.25 – 16.45 Shape vs Reduction debate
Mark Jackson
Mike Kelly
- 16.45 – 16.55 Discussion/vote
- 16.55 – 17.05 Percutaneous - Plates/Screws
Les Grujic
- 17.05 – 17.15 Discussion
- 19.30 for 20.00 Annual dinner – Marriott Hotel**

DAY 2 FEEDBACK FORM



Day 3 Friday 4th November

- 08.30 – 09.30 Business issues**
Chairs: James Davis, Robert Clayton
- 08.30 – 08.45 Consent issues
P Cooke
- 08.45 – 08.50 Principles of Foot & Ankle Surgery
Overseas course
Rick Brown
- 08.50 – 09.00 BOFAS registry
Where are we at
A Molloy
TORUS
Paul Halliwell
Outliers
Patricia Allen
- 09.00 – 09.10 NJR Update
Andy Goldberg
- 09.10 – 09.20 GIRFT
Mike Kimmons
- 09.20 – 09.30 Discussion/Questions
- 09.30 – 10.45 Free Papers 3**
Chairs: Tim Clough, Jit Mangwani
- 10.45 – 11.15 Coffee
- 11.15 – 11.30 BOA presidential address
Ian Winson
- 11.30- 12.30 Ankle arthritis – where are we now?**
Chairs: PH Ågren, Ian Winson
- 11.30 – 11.40 Soft tissue injuries
Bill Harries
- 11.40 – 11.50 OCD
Steve Hepple
- 11.50 – 12.05 Bone injury - does fracture pattern
dictate outcome?
Les Grujic
- 12.05 – 12.20 Do we understand the consequences
of ankle arthritis?
Jan Willem Louwerens
- 12.20 – 12.30 Discussion/Questions
- 12.30 – 12.40 **Best paper presentations**
- 12.40 – 14.00 BOFAS AGM (working lunch)**
Presidents Report
Ed Comm Report
Sci Comm Report
Out Comm Report
EFAS Report
Coding Report
Webmaster Report
Treasurer Report
Accountant
Soap Box - time for floor to bring
matters to attention AGM
New Members Vote/Council and
President Elect Appointments
- 14.30 – 14.45 Presidential handover** to Chris Blundell
- 14.45 Close

DAY 3 FEEDBACK FORM



BOFAS

British Orthopaedic Foot & Ankle Society

BRISTOL 2016

2ND - 4TH NOVEMBER



ANNUAL GENERAL MEETING
THE BRISTOL MARRIOTT HOTEL (CITY CENTRE)

OUR EDUCATIONAL SUPPORT PARTNERS

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British Orthopaedic Foot & Ankle Society

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General Information

Registration & Exhibition Timings

Day	Registration Open	Lunch	Meeting Close
2nd November - Wednesday	08.00	12.45 - 13.45	18.30
3rd November - Thursday	08.00	13.00 - 14.00	17.30
4th November - Friday	08.00	Working Lunch	14.45

On registration you will receive a badge and delegate pack containing a programme and a pen, plus inserts from our Gold Sponsors this year.

Gala Dinner Tables

Please visit the registration desk between 10.30am – 6pm on Wednesday or 10.30am – 2.30pm on Thursday to choose your table. If you have not visited the desk a table will be chosen for you. Completed Dinner table lists will be in the Ground Floor foyer from 6.30pm Thursday 3rd November.

Cloakroom

The cloakroom will be open between 08.00hrs – 18.00hrs daily. It is located on the ground floor just along from the registration stand.

Parking

NCP - The post code for your Satellite Navigation is BS1 3AF
<https://www.ncp.co.uk/find-a-car-park/car-parks/bristol-broadmead/>

The Galleries car parks - The postcode for your Satellite Navigation is BS1 3XD.
<http://www.galleriesbristol.co.uk/centre-information/parking.html>

Cabot Circus Car Park - The postcode for your Satellite Navigation - is BS2 9AB
<https://www.cabotcircus.com/visitor-info/parking>

Feedback

Feedback this year will be collected online. You will find a QR code within your programme and on the rear page of your programme for each day. By scanning the code you will be able to complete a short feedback form online. These forms will need to be completed and submitted to gain a certificate of attendance this year. A generic QR code scanner can be downloaded free from the App store on your phone. Please see the assistants at the registration desk if you have any questions.

CPD Points

Wednesday 5 points, Thursday 6 points, Friday 3.5 points.

Badge Types

Red - Faculty
Dark Blue - BOFAS Full Member, BOFAS Retired Member
Light Blue - Allied Health Professional, Trainee, Non-Member

Refreshments

Tea and coffee will be served in the exhibition areas shown as red blocks on the Exhibition Plan. Lunch will be served on Wednesday and Thursday in the exhibition areas shown as red blocks on the Exhibition Plan. Lunch on Friday will be served as a takeaway lunch at the rear of the main auditorium.

Additional seating areas

You will find additional seating on the first floor in the bar area.

AGM Reports

AGM Reports will be emailed to all members prior to the AGM.

Poster Locations

Poster presentations can be found on the Ground Floor Exhibition Foyer areas and in the Conservatory Exhibition area.

Ground Floor Foyer Exhibition Area

- P1 Does urinary cotinine level correlate with post-operative complications in elective foot and ankle surgical patients?
- P2 Silastic arthroplasty versus 1stmetatarsophalangeal joint arthrodesis: a prospective comparative series
- P3 Experience from a dedicated physiotherapist led Achilles rupture service
- P4 Identification of the medial column line collapse variation is crucial in flat foot management
- P5 Does ankle arthritis cause more disability than other pathologies of the foot and ankle?
- P6 Access to talar dome surface with different ankle approaches
- P7 Randomised control trial of the effectiveness of metatarsal block versus ultrasound-guided ankle block in osseous first ray surgery
- P8 Investigating how the degree of radiological correction corresponds to patient reported outcomes in scarf osteotomy
- P9 Surgical fixation of type 2 navicular fractures – evolution of a technique
- P10 Failed hindfoot fusion with intra-medullary nails - outcomes following limb salvage with circular frames for infected nonunions

Conservatory Exhibition Area

- P11 Peroneal tendon dislocation - is the fleck sign being overlooked?
- P12 The role of the virtual fracture clinic in the management of foot and ankle fractures: a review of patient outcomes and satisfaction
- P13 Hindfoot nail for acute management of the elderly ankle and distal tibia fragility fractures - a safe and effective treatment
- P14 Medial soft-tissue release for a lateralizing calcaneal osteotomy - a cadaveric study
- P15 Scarf osteotomy or Lapidus procedure in the treatment of severe Hallux valgus. Does the patient have a choice?
- P16 Which factors influence the decision to perform computed tomography for primary ankle fractures?
- P17 The role of pre-operative computed tomography in operative planning for ankle fractures involving the posterior malleolus
- P18 Adult flat foot reconstruction using arthroereisis
- P19 The use of tranexamic acid in foot and ankle surgery

Gold Sponsor Workshops

Wednesday 2nd November 17.45-18.45

ARTHREX - Live Cadaveric Demonstrations (Wallace Suite)

Arthrex's commitment to dynamic medical education will be showcased at BOFAS this year with Live Demonstrations direct from the MobileLab™. The event at 5:45pm on Wednesday 2nd November will be broadcast from the Arthrex MobileLab, which will be parked onsite for this year's BOFAS. Delegates will be able to observe live cadaveric demonstrations of Lateral Ankle Repair Augmentation, Achilles & Syndesmosis Repair & Lisfranc Injury techniques from the comfort of a seated auditorium with liquid refreshments provided.

Demonstrators include Mr James Calder (London), Mr Mike Butler (Truro) and Mr Rhys Thomas (Cardiff). Entry will be on a first come first served basis so please arrive early to avoid disappointment.

Thursday 3rd November 10.00 – 13.00

ARTHREX - Flatfoot Innovation Demonstration and Workshop (Wallace Suite)

Cadaveric live demonstration, with opportunity for hands on Sawbone practical; An opportunity for a hands on workshop focused on the latest Arthrex products and techniques. Attendees will be able to observe Live Cadaveric Demonstrations and try for themselves products such as InternalBrace, SpeedBridge and Knotless TightRope in a Sawbone practical. Come and spend some time with the Arthrex team and see What's New in Foot & Ankle!

BIOVATION-CARTIVA® Wet Lab Workshop (Concord Suite)

1. 10.00-10.30 – Chris Blundell and Mark Davies present Cartiva® Synthetic Cartilage Implant and 2 year MOTION Study Results
2. 10.30-11.30 – Chris Blundell and Mark Davies lead the wet lab Cartiva® Synthetic Cartilage implant workshop – practical experience and Q&A opportunity.
3. 12.00-13.00 – Chris Blundell and Mark Davies lead the wet lab Cartiva® Synthetic Cartilage implant workshop – practical experience and Q&A opportunity.

BONESUPPORT (SS Great Britain Suite 1)

Session 1 10.00-11.00 Session 2 11.30-12.30

'Complex Infections in the Foot & Ankle – The Emerging Concepts and CERAMENT™'

Presentations:

- Mark Rogers, Oxford Bone Infection Unit – The role of antibiotic carriers in foot & ankle infection.
- Venu Kavarthapu, Kings College Hospital – Chronic infected diabetic foot deformities- limb salvage options.
- Anand Pillai, Wythenshawe Hospital – Adjuvant local antibiotic therapy in foot & ankle trauma.
- David Stubbs, Oxford Bone Infection Unit – Management of the chronic infection in foot & ankle.

ORTHOSOLUTIONS (SS Great Britain Suite 2)

Workshop 11.00 – 12.30

Management of Complex Hindfoot and Ankle Deformities with Bone Loss

Dr Mark Myerson will discuss his rationale for utilising innovative 3D printed devices in his treatment options for complex hindfoot and ankle deformities with bone defects.

Mark Myerson MD – Medical Director – Foot & Ankle Association.

Ground Floor SS Great Britain Suite

WRIGHT MEDICAL (SS Great Britain Suite 3)

Session 1 10.00–11.00 Session 2 11.00 -12.00 Session 3 12.00–13.00

- Advancements in Biologics – Mr Murthy, Newcastle (15 minutes)
- Infinity Ankle Replacement workshop including "The Power of Prophecy" alignment process (45 minutes)

"Wright Medical UK are yet again proud to be Gold Sponsors of BOFAS 2016. We look forward to welcoming you to our Stand in the main exhibition area."

Wright Medical Workshop - Thursday 3rd November 9.00am to 12.30pm

- Advancements in Biologics
- Infinity Ankle Replacement Workshop including "The Power of Prophecy" alignment process

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**Welcome &
Faculty Biographies**

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British Orthopaedic Foot & Ankle Society

Welcome to BOFAS 2016

As a Society we aim to share the understanding of foot and ankle problems and advance the ways by which we deal with them to the ultimate benefit of our patients.

From small beginnings in 1975 we have grown and can now boast a meeting with in excess of 400 delegates.

Over the year the Council and Committee members have worked tirelessly on our behalf. We continue to work with the BOA who have been invaluable in their support and guidance particularly in relation to the work around outcomes and registries.

I am extremely grateful to the national and international faculty for dedicating their time and knowledge to this meeting. Over the 3 days their thoughts will undoubtedly enhance our understanding and hopefully provoke discussion and raise important questions.

We have a packed morning on Thursday including the Allied Health Professionals programme, Complex Case Session, industry workshops and an additional talk on research.

We have been generously supported by our industry partners whose sponsorship allows our annual meeting to take place. I would encourage you all to make the effort, during breaks in the programme, to visit the industry stands.

The annual dinner on the Thursday evening is to be held at the conference venue and I hope as many of you as possible will attend what should be a relaxing but entertaining event.

I look forward to welcoming you to Bristol and hope you have the chance to enjoy some of the many things the City has to offer.

Many thanks to Council, the various Committee members and Jo Millard for their hard work in putting the meeting together, and of course to all of you for coming and making the meeting successful and BOFAS a successful society.

With best wishes

Bill Harries MB BS FRCS (Eng) FRCS (Ed) FRCS (Orth)
BOFAS President

FACULTY BIOGRAPHIES

Per-Henrick Ågren

Studied at the Karolinska Institute, and became specialist in Orthopaedic Surgery 1989. He presently is Head of Stockholms Fotkirurgiklinik (private practice)/ Sophiahemmet. PhD was in 2014 with thesis: "Aspects on Calcaneal Fractures"

He has been especially interested in trauma and foot and ankle reconstruction and since fellowship within AO: Foot & Ankle Surgery with Trauma under the leadership of prof S.T.Hansen and ass prof. S.K.Benirschke, University of Washington, Seattle, has devoted himself to F&A (1995). He is International board member of journal "Foot and Ankle Surgery" (FAS). Has been Board member of European Foot and Ankle Society two periods 1998-1999 & 2009-2013 and Board member of Swedish Foot Surgery Society

Member of AO-TK/OFTF and FAEG Foot and Ankle Expert Group 2003-2011 and thereafter active in AO Education Foot and Ankle group.

He has published on on several topics like TAR , calcaneal fractures, fusions after calcaneal fractures, reliability and reproducibility of calcaneal fracture classifications, IM nailing of hindfoot and Charcot feet in diabetics. He has lectured in Europe and internationally and written chapters in several books

He has been part of development of several surgical tools and instruments and developed the ZEVO osteotomy for AFFD



Patricia Allen

Patricia Allen was trained in orthopaedic surgery in Birmingham and Bristol. She undertook a fellowship in foot and ankle and paediatric orthopaedic surgery in Dublin in 1998 and was appointed as a Consultant Orthopaedic Surgeon in Bristol in 2000. She moved to Leicester as a Consultant in 2003 and has developed the Foot and Ankle service here.

Patricia has served as BOFAS Honorary Secretary for the past 3 years



Jim Barrie

Jim Barrie is a consultant foot and ankle surgeon at East Lancashire Hospitals Trust and honorary professor of orthopaedic education at the University of Salford. He graduated from Edinburgh and did most of his orthopaedic training in the north-west of England. He also studied foot and ankle surgery with Professor Klenerman in Liverpool and Drs Myerson and Schon in Baltimore. His recent research has focused on ankle injuries, adult acquired flatfoot, forefoot pain and reflection in medical learning.

Jim is on the faculty of several national foot and ankle courses. He is responsible for the development of e-learning in the University of Salford's MSc programmes in trauma and orthopaedics, and is on the faculty for the PGCert and Masters in Clinical Education programmes at Edge Hill University. One of his key interests is interprofessional education to support service redesign. He is the principal author of the Foot and Ankle Hyperbook. Jim was the first webmaster for BOFAS and has been a member of the BOFAS education and science committees. In 2005 he was voted "Trainer of the Year" by the North-west Deanery T+O trainees. He is a Fellow of the Academy of Medical Educators and a founding member of the Faculty of Surgical Trainers of the Royal College of Surgeons of Edinburgh.





Chris Blundell

Chris Blundell specialises in foot and ankle conditions in both elective and trauma practice. He is a consultant in Sheffield Teaching Hospitals. He carried out two fellowships in foot and ankle surgery in Melbourne, Australia in 2001/2 and was later awarded an MD for research into foot pressures. He is a Sheffield graduate whose higher surgical training was in Cambridge and Norwich. He is Clinical Lead for the Sheffield Foot and Ankle Unit, and a past Chairman of Sheffield Orthopaedics Limited. Chris is immediate Past Chair of BOFAS Education Committee and is currently a BOFAS Director and BOFAS President Elect.



Mike Bradley (Radiologist)

Dr. Mike Bradley is a widely published specialist in radiology in the field of musculoskeletal radiology, including several book chapters and two books (Atlas of Musculoskeletal Ultrasound). He conducts all types of musculoskeletal radiology encompassing MRI, CT, Ultrasound, Radio-isotopes, and intervention including a comprehensive range of joint and soft tissue injections. He performs imaging around all varieties of sports injuries in both amateur and elite athletes. He lectures at the University of West of England as well as many national and international meetings.

He is the lead radiologist for the regional soft tissue sarcoma service in Bristol, performing all types of imaging and biopsies as well as therapeutic interventional procedures largely based around radio-frequency ablation. He has pioneered ultrasound guided foreign body extractions.



Paul Cooke

Mr Paul Cooke is an established international expert in foot and ankle surgery. He qualified in Sheffield in 1977, later gaining FRCS (London) in 1981, and MCh 1990. He underwent postgraduate training in Sheffield, Bristol, Plymouth, Melbourne and Oxford before becoming a Consultant Orthopaedic Foot and Ankle Surgeon at the Nuffield Orthopaedic Centre NHS Trust ("NOC") in 1989, a position he still holds.

He is Past President and Past Secretary of the British Orthopaedic Foot and Ankle Surgery Society, and has been a council member of the European Foot and Ankle Surgery Society. Mr Cooke divides his time equally between NHS and private practice.



Matt Costa

Matthew Costa is Professor of Orthopaedic Trauma Surgery at the University of Oxford and Honorary Consultant Trauma Surgeon at the John Radcliffe Hospital, Oxford.

Matt's research interest is in clinical and cost effectiveness of musculoskeletal trauma interventions. He is Chief Investigator for a series of randomised trials and associated studies supported by grants from the UK NIHR, Musculoskeletal Charities and the Trauma Device Industry. His work has been cited widely, and informs many guidelines from the National Institute for Health and Care Excellence.

Matt is Chair of the NIHR Clinical Research Network Injuries and Emergencies Specialty Group and the Scientific Committee of the National Hip Fracture Database. He is the Research Lead for the Orthopaedic Trauma Society and the NIHR Musculoskeletal Trauma Trials Network and a Specialty Lead in Trauma and Orthopaedics for the Royal College of Surgeons of England.

David Cottrell (Neurologist)

Dr David Cottrell received his first class BSc in pharmacology and MB ChB from Edinburgh University in 1991 and 1994. His general neurology training and PhD in CNS ageing and mitochondrial genetics was completed in Newcastle upon Tyne. He was involved in the London, Ontario MS natural history project and has published several MS natural history papers in addition to publications in mitochondrial disorders, Alzheimer's disease and CNS ageing. Dr Cottrell was appointed as a consultant neurologist and honorary senior clinical lecturer at North Bristol Trust and Bristol University in 2005. He now specialises in Multiple Sclerosis and in particular Primary Progressive Multiple Sclerosis. Dr Cottrell in addition to his full time clinical role leads an MS clinical research group. He is the local PI for several international multi-centre and local MS clinical trials. In addition he has led both a longitudinal neurophysiological natural history trial in PPMS and Qu lab an EEG exploratory cognitive software platform. He was one of the co-founders of the BRAMS (Bristol and Avon MS charity) and helped create the new BRAIN clinical and research centre at Southmead Hospital.



Andy Goldberg

Andy Goldberg is a Consultant in the Foot & Ankle Unit at the Royal National Orthopaedic Hospital in Stanmore and also a Clinical Senior Lecturer at UCL. He graduated from St Mary's Hospital Medical School (Imperial College) in 1994. His specialist training in trauma and orthopaedics was on the London (North East Thames) Rotation. Prior to his CCST he obtained an MD from the University of London for his Thesis on Stem Cells in Cartilage Repair. He underwent a specialist fellowship in complex foot and ankle disorders in Oxford, as well as a travelling fellowship in 15 centres of excellence across the USA and Europe. In addition to extensive peer review publications, he has authored several textbooks and book chapters and reviews for several grant awarding bodies and distinguished journals. He was awarded an OBE in the Queens New Year's Honours List 2011 for services to medicine. At UCL he runs the Masters Course in Trauma & Orthopaedics. He has raised more than £7m in research grants, including an NIHR Health Technology Assessment Award for a multicentre RCT of ankle replacement against ankle fusion.



Les Grujic

Les Grujic completed his Fellowships in Traumatology and Foot and Ankle surgery at Harbourview Medical Centre, Seattle, Washington 1992 – 1994. He practices exclusively in Foot and Ankle surgery including Foot and Ankle trauma, arthroscopic surgery, sports injuries and reconstructive surgery. Les is an accredited Orthopaedic Surgeon at North Shore Private Hospital and Macquarie University Hospitals, Sydney, Australia. He has a major interest in Orthopaedic Education and is a member of the AO Foot and Ankle Expert Group and is a past member of the AO Education Task Force which is involved in the development of global orthopaedic education and surgical training. He has chaired many AO Foot and Ankle courses in Sydney, Davos and recently Bangkok.



Ian Griffiths

Head of Podiatry, Pure Sports Medicine, London. Consulting Podiatrist to Bupa UK, PGA European Tour and RFU England 7's squads.

Fellow of the Faculty of Podiatric Medicine, Royal College of Physicians & Surgeons (Glasgow). Director of www.sportspodiatryinfo.co.uk

He has been a practicing Podiatrist since 2003, specialising in Sports Podiatry since obtaining his Masters degree in 2010. He maintains an active role in research alongside his clinical lists.





Kartik Hariharan

Kartik Hariharan is an expert surgeon who works in private practice and with the NHS. Mr Hariharan is a Consultant Trauma and Foot and Ankle Surgeon at the Royal Gwent Hospital and the clinical lead for Foot and Ankle Services for Gwent County. He is a Past President of the British Orthopaedic Foot and Ankle Society having completed his term in November 2012. Mr Hariharan is a fully practicing Consultant in orthopaedic trauma and surgery, specializing in the foot and ankle, both with the NHS and in his private practice. He is the Chairman of the Clinical Commissioning Guidance Group for the British Orthopaedic Association for Foot and Ankle Surgery (BOFAS) and is a Specialist Adviser for the National Institute of Clinical Excellence.



Bill Harries

Bill Harries graduated from the London Hospital Medical College in 1985. His clinical training was on the West London circuit before moving to Bristol as a senior registrar. He was appointed Consultant Orthopaedic and Trauma Surgeon to Frenchay Hospital Bristol in 1997. He has a special interest in adult orthopaedic foot and ankle problems and particularly arthroscopic surgery. Bill completed a full term as Scientific Committee Chairman and is the current BOFAS President



Steve Hepple

Steve Hepple is a NHS Consultant Foot & Ankle Surgeon, Honorary Senior Lecturer in Trauma and Orthopaedic Surgery and Clinical Director Musculoskeletal Services at North Bristol NHS Trust. He trained initially in Sheffield and Bristol before undergoing specialist training in Brisbane and Dallas. He specialises in sports injury, trauma and foot & ankle surgery including ankle arthroscopy and replacement. He is immediate past Director and Treasurer of BOFAS and a faculty member of AO trauma.



Mark Jackson

Mark Jackson is a lower limb trauma and limb reconstruction surgeon working at University Hospitals Bristol. He trained in Orthopaedic Surgery in Nottingham, Edinburgh and Bristol before taking up his current post as Consultant Orthopaedic surgeon in 1996. His special interests include the management of lower limb peri-articular fractures, foot fractures and the treatment of fracture complications. He has extensive experience in the use of the Taylor Spatial frame and Ilizarov techniques, helping to pioneer the combination of these with internal fixation. He continues to be heavily involved in medical education, initiating a number of postgraduate courses over the last 15 years and is a past chairman of the AO Principles and Advanced Surgeons course. He is the current immediate Past President of AO UK.



Roderick Jaques

Dr Jaques qualified in medicine from the University of London, receiving his MRCP in 1989. He went on to complete the London Hospital Diploma course in Sports Medicine, qualifying with a distinction and the David Ritchie prize in 1990. He has attended the Atlanta, Sydney, Athens, Beijing and London Olympics with Team GB and the Kuala Lumpur and Manchester Commonwealth Games with the England Team in a clinical capacity. From 1989-2004, Dr Jaques was the Medical Advisor to the British Triathlon Association.

He was appointed to the British Olympic Medical Centre, London in 1998 and was there for three years, after which he joined the EIS in 2003. At the Nuffield Health Cheltenham Hospital, Dr Jaques works in private practice with a multidisciplinary team of physiotherapists, strength and conditioning, podiatry, nutrition, sports psychology, musculoskeletal radiologists and orthopaedic consultants

Mike Kelly

Mike Kelly specialises in a service for fracture care and ongoing problems following trauma where there has been a slow or incomplete return of function. His orthopaedic training was undertaken in Edinburgh, a programme rated as one of the best by the recent GMC report. This gave an excellent experience in joint replacement surgery and fracture care. In 2007-8 he undertook the internationally acclaimed Vancouver fellowship in orthopaedic trauma. He has been practising in North Bristol for over 2 years doing trauma, especially the complex reconstructions in Frenchay, and joint replacement surgery in the Avon Orthopaedic Centre. His philosophy is to maximise function whether that be following trauma or from arthritis either through focused conditioning or surgery or a combination.



Steve Lines

Stephen Lines is a Specialist Surgical Podiatrist in the Avon Orthopaedic Centre in Bristol. He commenced training within the AOC in 1995 and he has been a full time member of this unit since 2002. Stephen specialises in complex primary and revision forefoot and midfoot pathologies. He teaches trainee Orthopaedic surgeons, Podiatry and Medical students.



Jan Willem Louwerens

Jan Willem Louwerens graduated from the University of Leiden in 1983. After his postgraduate at the Erasmus University Hospital in Rotterdam, he gained his accreditation as orthopaedic surgeon in 1990. Research regarding chronic lateral instability of the foot resulted in a dissertation (PhD) in 1996. From 1993 he worked at the Central Military Hospital as medical officer in the Royal Dutch Air Force and at the Orthopaedic Department of the University Medical Centre in Utrecht where he sub-specialised in foot and ankle surgery. This included a Visiting Fellowship to 'Harborview Medical Centre' (ST Hansen jr.) in Seattle, USA, in 1995.

From 1998 he works at the St Maartenskliniek in Nijmegen, Centre of Orthopaedics. He chairs the Foot and Ankle Reconstruction Unit. Fellows and registrars are trained in foot and ankle surgery. More than 1000 procedures are performed yearly, with special focus on the more complex cases including neuromuscular diseases, degenerative flatfoot, total ankle replacement, the rheumatoid foot and post-traumatic conditions. Research on these topics is done in close collaboration with the Research Department of the St Maartenskliniek.



Andy Molloy

Andy Molloy is a Consultant Orthopaedic Foot and Ankle surgeon at University Hospital Aintree. He graduated from the University of Leeds in 1996 and completed his higher surgical training in the Mersey Region, including an eminent international fellowship.

He is an Honorary Clinical Senior Lecturer at the University of Liverpool. He has a keen research interest, with many peer-reviewed publications and presentations. Research has led to him winning the AO UK trauma prize as well as the Roger Mann award. He is on the teaching faculty for national and international foot and ankle courses and co-chairs a cadaveric operative course.

Having served a term on the Scientific Committee of BOFAS, he is now chair of the Outcomes Committee.





Mark Myerson

Dr. Mark Myerson is the Medical Director of The Foot and Ankle Association Inc. a philanthropic organization which coordinates the delivery of foot and ankle care globally to underprivileged individuals and communities. Dr Myerson is an internationally recognized leader in reconstructive foot and ankle surgery and is Past President of the American Orthopaedic Foot and Ankle Society (AOFAS). He is a consultant to the orthopaedic industry, an honorary member of many international orthopaedic societies and plays an active role in defining national standards for orthopaedic foot and ankle practice. Dr. Myerson has authored more than 300 research publications as well as five text books covering various treatments of foot and ankle conditions, and is a frequently invited guest speaker, giving professional talks around the world as consultant and educator. He has trained hundreds of orthopaedic surgeons both in the United States and abroad, and education continues to be integral to the vitality and function of his vision and mission. Dr. Myerson has developed numerous procedures for treating various foot and ankle injuries and deformities and his contributions to the field of orthopaedic surgery have revolutionized the diagnosis, treatment, and recovery of foot and ankle disorders.



Steve Parsons

Stephen Parsons is a West Country man, born and bred in Clevedon in North Somerset. He qualified in the Middlesex Hospital University of London in 1979. His Higher Surgical Training in Orthopaedics was at Sheffield and Southampton, before being appointed Consultant Orthopaedic & Trauma Surgeon to the Royal Cornwall Hospital in 1991.

Mr Parsons developed adult and paediatric foot and ankle surgery, as a distinct specialty in Cornwall by introducing and developing “state of the art” techniques, such as ankle replacement and arthroscopic ankle and foot surgery, he was able to establish national recognition for Cornwall in foot and ankle surgery.

Mr Parsons is a past President of the British Orthopaedic Foot & Ankle Society. He was a member of the Society’s Council for 10 years and the inaugural Chairman of the Education Committee. Mr Parsons is a member of the European Foot & Ankle Society and has served on the Council of that Society for a full term of 4 years.

Mr Parsons research interests have to led to international and national publications on new forefoot procedures , arthroscopic surgery in the ankle, hindfoot and midfoot and assessment at surgery for the painful flat foot.

Mr Parsons has maintained a keen interest in teaching and training throughout his consultant career and has been invited to lecture both nationally and internationally at both scientific congresses and instructional courses.



Stefan Rammelt

Stefan Rammelt qualified at the University of Leipzig in Germany in 1996 and carried out fellowships in Colombia, Boliva, Virginia and Yale University between 1993 and 1995. He completed a Doctoral Thesis at the University of Leipzig in 1997 and in 2006 a PhD in Traumatology at the University of Technology in Dresden.

Between 2003 and 2013 Dr Rammelt worked in trauma and orthopaedics in the department of reconstructive surgery at Dresden Hospital Germany. In 2005 he received the AE Scientific Award and in 2005 the Outstanding Paper Award at the 12th International Conference on Biomedical Engineering (ICBME), Singapore. From 2007 to the present day, he has been leader of the trauma research laboratory and research group and in 2013 became head of the foot & ankle section at the university centre for orthopaedics and traumatology, Dresden.

He has been a member of the AO Foot & Ankle Expert Group since 2011, a member of the AO Foot & Ankle Education Task Force since 2015, 3rd Vice President of the German Foot and Ankle Society since 2008, Hon. Secretary between 2008 and 2010, Vice President between 2010 and 2013, and President of the German Society of Biomaterials (DGBM) since 2013.

Fred Robinson

Having trained in the UK, United States and France, Andrew ‘Fred’ Robinson took up a post at Addenbrooke’s Hospital, Cambridge as a Consultant in Orthopaedics and Trauma.

Fred has run the foot and ankle service at Addenbrooke’s since 1999. He served as President of the British Orthopaedic Foot & Ankle Surgical Society in the year 2010/2011. He has published over 30 articles referenced on PubMed. Fred’s clinical practice covers the full range of foot and ankle surgery. He treats both trauma and orthopaedic conditions of the foot. He has a special interest in forefoot surgery, diabetic foot care and ankle replacement.



Bob Sharp

Orthopaedic & Specialist Training in Cambridge and Oxford, completing his training with the prestigious Brisbane foot & ankle fellowship.Royal College of Surgeons of England 2000: Gold Medal for outstanding achievement in FRCS Orthopaedics and Trauma mom Awarded the Presidents Traveling Scholarship in 2001, Medical advisor to the jockey Association, Medical Advisory Committee to the Horse Racing Authority, Director of Foot and Ankle Research, Nuffield Orthopaedic Centre. On many international and national teaching faculties.



Chris Walker

Chris Walker is a Consultant Orthopaedic Surgeon at The Royal Liverpool and Broadgreen University Hospitals NHS Trust and at the Bone and Joint Centre at Spire Liverpool Hospital. He is also Associate Medical Director implementing evidence based healthcare into his Trust. He was President of the British Orthopaedic Foot and Ankle Society from 2007-8, Chairman of its Scientific Committee prior to this and was appointed Director of the Society from 2009 to 2013. He has achieved wide recognition in the world of foot and ankle surgery, teaching and lecturing at national and international meetings. He is Co-Director of the Liverpool Foot & Ankle Cadaver Course and has set up a regional North West Orthopaedic Diabetic Foot group.



Martin Williams (Radiologist)

Dr Martin Williams is a Consultant Radiologist and Honorary Senior Lecturer at North Bristol NHS Trust who was appointed in 2004 following a Musculoskeletal Fellowship in Radiology, at the University of Alberta Hospital, Edmonton Canada from 2003-2004.

Dr Williams works as a Consultant Radiologist involved in all aspects of Orthopaedic radiology and spinal imaging, including applications of magnetic resonance imaging, computed tomography and ultrasound. Musculoskeletal interventional radiology including Joint, Soft tissue and Spinal Injections. His specialist interests include Imaging of Spondyloarthritis and Sports Imaging. He is an author of several peer reviewed publications in these areas.

Member of several professional societies, including the British Society of Skeletal Radiology and European Society of Skeletal Radiology.



Ian Winson





Ian Winson is a NHS Consultant and Honorary Senior Lecturer in Trauma and Orthopaedic Surgery, Southmead Hospital, Bristol. Ian Winson’s practice has been pretty much specialist foot and ankle for 20 plus years. He is now President of the British Orthopaedic Association, Editor JTO and a Review Editor European Journal Foot and Ankle Surgery. He has been President European Foot and Ankle Society and BOFAS. He is part of the Bristol Foot and Ankle Group which is a support group for surgeons who dream about feet!

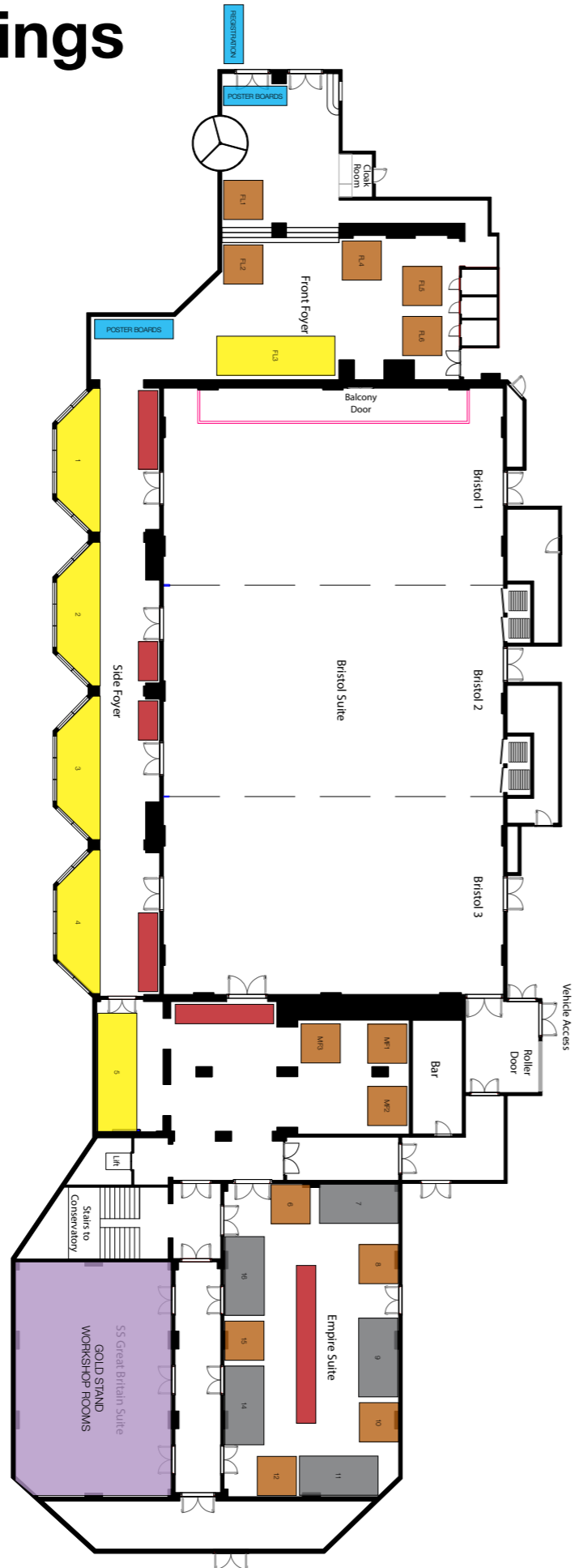


Exhibitor Listings

Stand	Company
FL1	OrthoFix
FL2	Biocomposites
FL3	Stryker
FL4	Echo Orthopaedics Ltd
FL5	Curve Beam
FL6	NJR
1	OrthoSolutions
2	Biovation UK Ltd
3	Arthrex
4	Bonesupport
5	Wright Medical
MF1	BOA
MF2	The Foot
MF3	Implants International
6	Freelance Surgical
7	EMS SA
8	Vertec Scientific Ltd
9	Lavender Medical
10	Arthrodax
11	Integralife
12	Corin Ltd
14	Bioventus Global
15	Medartis Ltd
16	Zimmer Biomet

Key to stands





Gold stand 6m x 2m	
Silver stand 4m x 2m	
Bronze stand 2m x 2m	
Catering area	

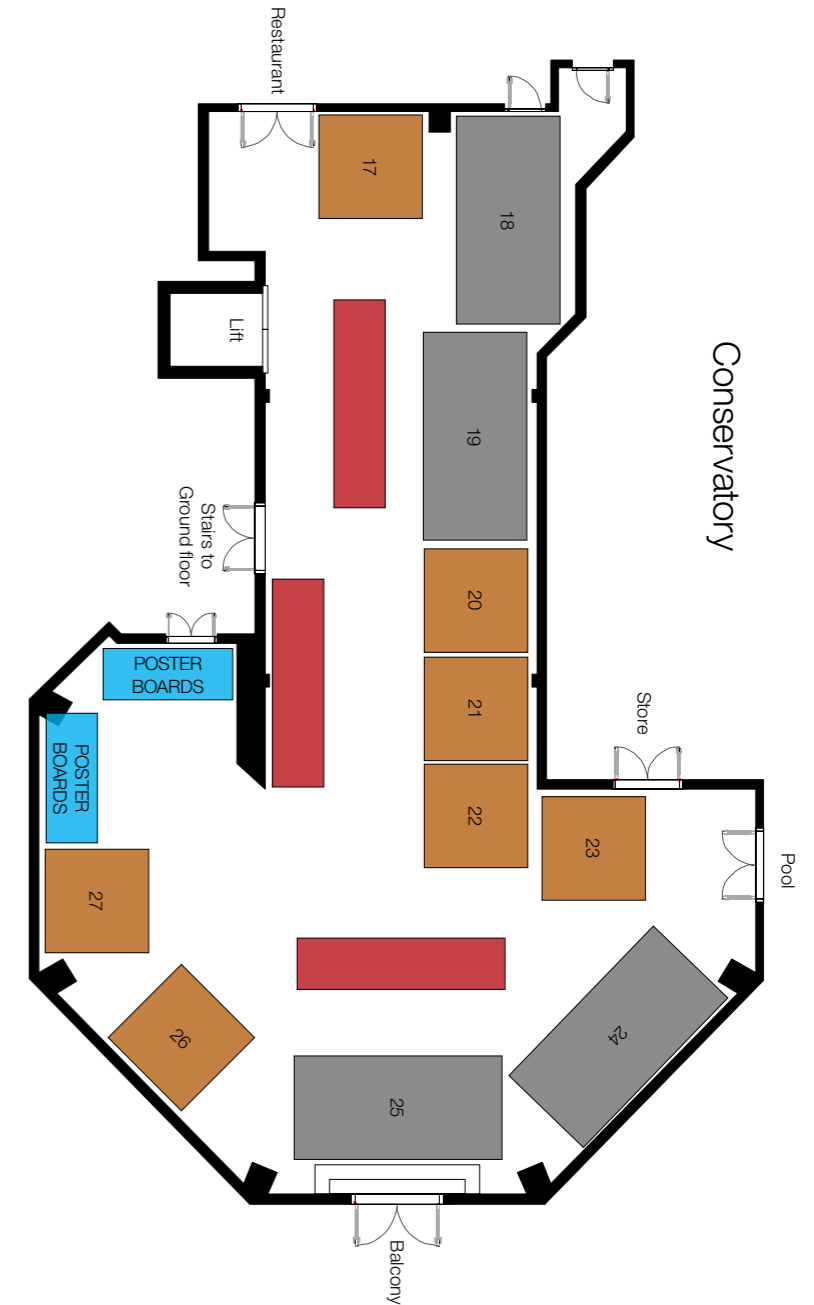


Exhibitor Listings

Stand	Company
17	Ortholink
18	Venn Healthcare
19	Smith & Nephew
20	MatOrtho
21	OPED UK Ltd
22	Int2Med
23	FH Orthopaedics
24	DePuy Synthes
25	Acumed
26	Hospital Innovations
27	TRB Chemedica

Key to stands

Gold stand 6m x 2m	
Silver stand 4m x 2m	
Bronze stand 2m x 2m	
Catering area	



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Programme 2016

Day 1 Wednesday 2nd November

08.00 - 08.50	Registration and coffee	
08.50 - 09.00	Welcome	Bill Harries
09.00 - 10.30	Adult Flat foot	
	<i>Chairs: Anthony Sakellariou, Nick Cullen</i>	
09.00 - 09.20	Overview	Ian Winson
09.20 - 09.30	Osteotomies - Scarf	P H Ågren
09.30 - 09.40	Osteotomies - Translational (Open/MIS)	Kartik Hariharan
09.40 - 09.50	Osteotomies - Column lengths/balance	Chris Walker
09.50 - 10.00	Place of the arthroereisis screw	Les Grujic
10.00 - 10.10	Acquired - Split tib ant/FDL	Bob Sharp
10.10 - 10.20	Acquired - Triple – Considerations (when arthroscopic)	Steve Parsons
10.20 - 10.30	Discussion	
10.30 - 11.00	Coffee	
11.00 - 12.35	Free Papers 1	
	<i>Chairs: Matt Solan, Robert Clayton</i>	
12.35 - 12.45	Discussion	
12.45 - 13.45	Lunch	
13.45 - 15.15	Cavus foot	
	<i>Chairs: Patricia Allen, P H Ågren</i>	
13.45 - 14.05	Overview - (Conservative ? when Surgery)	Jan Willem Louwerens
14.05 - 14.20	Neurology of cavovarus deformity	David Cottrell
14.20 - 14.35	Surgical options - Joint preserving	Fred Robinson
14.35 - 14.50	Surgical options - Joint sacrificing	Paul Cooke
14.50 - 15.05	Toe/Forefoot surgery	Chris Blundell
15.05 - 15.15	Questions	
15.15 - 15.45	Coffee	
15.45 - 17.15	Imaging/Plantar plate	
	<i>Chairs: Jan Willem Louwerens, Kartik Hariharan</i>	
15.45 - 16.05	What's new in foot and ankle imaging	Mike Bradley
16.05 - 16.15	Imaging of the plantar plate	Martin Williams
16.15 - 16.30	Mechanism of plantar plate injury & Conservative management	Steve Lines
16.30 - 17.00	Plantar plate repairs vs Toe repositioning	P H Ågren
17.00 - 17.15	Discussion	
17.15 - 18.30	Poster viewing/reception	
17.45 - 18.45	Arthrex Live Cadaveric Demonstration	

Day 1 Feedback form



Day 2 Thursday 3rd November

09.00 - 10.30	AHP meeting (Bristol Suite Door 1)	
	<i>Chairs: Jitendra Mangwani, Mark Myerson</i>	
09.00 - 09.20	Current concepts in midfoot biomechanics	Ian Griffiths
09.20 - 09.40	Assessment and Management of Lisfranc injuries in athletes	Mark Myerson
09.40 - 09.55	Discussion	
09.55 - 10.30	Panel led foot and ankle trauma cases	
10.30 - 11.00	Coffee	
11.00 - 12.00	AHP meeting continued (Bristol Suite Door 1)	
	<i>Chairs: Les Grujic, Noelene Davey</i>	
11.00 - 11.20	A sports physicians perspective on sports ankle	Rod Jaques
11.20 - 11.40	Peroneal tendon injuries	Les Grujic
11.40 - 12.00	Discussion	
09.00 - 10.30	Difficult cases (Bristol Suite Door 2)	
	<i>Chair: Anthony Sakellariou</i>	
10.00 - 13.00	Workshops (See page 3)	
12.15 - 13.00	Research Update 1	Matt Costa
13.00 - 14.00	Lunch	
14.00 - 14.25	Free Papers 2	
	<i>Chairs: Roland Russell, Anthony Perera</i>	
14.30 - 15.15	Research Update 2	Matt Costa
15.15 - 15.45	Coffee	
15.45 - 17.15	Calcaneal fractures	
	<i>Chairs: Mike Butler, Andy Riddick</i>	
15.45 - 16.15	Conservative Vs Surgical debate	Jim Barrie
	Conservative	Stefan Rammelt
	Surgical	
16.15 - 16.25	Discussion/vote	
16.25 - 16.45	Shape vs Reduction	Mark Jackson
	Anatomical reduction	Mike Kelly
	Shape	
16.45 - 16.55	Discussion/vote	
16.55 - 17.05	Percutaneous options	Les Grujic
17.05 - 17.15	Discussion	
19.30 for 20.00	Annual dinner	

Day 2 Feedback form



Day 3 Friday 4th November



08.30 - 09.30 **Business Issues**

Chairs: James Davis, Robert Clayton

08.30 - 08.45	Consent issues	Paul Cooke
08.45 - 08.50	Principles of Foot & Ankle Surgery Overseas course	Rick Brown
08.50 - 09.00	BOFAS Registry - Where are we at - TORUS - Outliers	Andy Molloy Paul Halliwell Patricia Allen
09.00 - 09.10	NJR Update	Andy Goldberg
09.10 - 09.20	GIRFT	Mike Kimmons
09.20 - 09.30	Questions	

09.30 - 10.45 **Free Papers 3**

Chairs: Tim Clough, Jit Mangwani

10.45 - 11.15	Coffee	
11.15 - 11.30	BOA presidential address	Ian Winson

11.30 - 12.30 **Ankle Arthritis - Where Are We Now?**

Chairs: P H Ågren, Ian Winson

11.30 - 11.40	Soft tissue injuries	Bill Harries
11.40 - 11.50	OCD	Steve Hepple
11.50 - 12.05	Bone injury - Does fracture pattern dictate outcome?	Les Grujic
12.05 - 12.20	Do we understand the consequences of ankle arthritis?	Jan Willem Louwerens
12.20 - 12.30	Questions	

12.30 - 12.40 **Best paper presentations**

12.40 - 14.00 **BOFAS AGM (working lunch)**

12.40 - 12.50	President Report
12.50 - 13.00	Ed Comm Report
13.00 - 13.10	Sci Comm Report
13.10 - 13.20	Out Comm Report
13.20 - 13.30	EFAS Report
13.30 - 13.40	Coding Report
13.40 - 13.50	Webmaster Report
13.50 - 14.00	Treasurer Report
14.00 - 14.10	Accountant
14.10 - 14.20	Soap Box – time for floor to bring matters to attention AGM
14.20 - 14.30	New Members Vote/Council and President Elect Appointments

14.30 - 14.45 **Presidential Handover to Chris Blundell**

14.45	Close
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FREE PAPERS SUMMARY

Day 3 Feedback form



FREE PAPERS

Wednesday, 2nd November 2016

CHAIRS: Matt Solan, Robert Clayton

FP1: 11.00 - 11.05

Outcomes of spring ligament reconstruction for idiopathic flexible flatfoot deformity

G. Williams¹, A. Kadakia², P. Ellison¹, L. Mason¹, A. Molloy¹

¹University Hospitals Aintree, Trauma Orthopaedics, Liverpool, United Kingdom,

²Northwestern University, Chicago, Illinois, Orthopaedics, Chicago, United States

FP2: 11.06 – 11.11

Foot and ankle injections - are they worth it?

D. Marsland¹, J. Grice¹, J. Calder¹

¹Fortius Clinic, London, United Kingdom

FP3: 11.12 – 11.17

The indications and management of Müller Weiss disease with valgus calcaneus osteotomy

S. Li¹, M. Myerson², M. Monteagudo³

¹Mercy Medical Center, Baltimore, United States,

²Institute for Foot and Ankle Reconstruction, Baltimore, United States,

³Universidad Europea, Madrid, Spain

Discussion: 11.18

FP4: 11.23 – 11.28

Functional outcomes and sporting ability after cheilectomy and first metatarsophalangeal joint

arthrodesis for hallux rigidus: a comparative study

E. Poh¹, N. Vasukutty², A. Pillai²

¹University of Manchester, Manchester, United Kingdom,

²University Hospital of South Manchester, Manchester, United Kingdom

FP5: 11.29 – 11.34

Mid-term implant survival, clinical and patient reported outcomes following silastic arthroplasty for the treatment of end stage Hallux rigidus

E. Drampalos¹, T. Karim, T Clough.

¹Wrightington Hospital, Foot and Ankle Unit, Wrightington, United Kingdom

FP6: 11.35 – 11.40

Adjuvant antibiotic calcium sulphate bio composites for implant related bone sepsis in foot and ankle - a single stage approach

H. Mohammad¹, T. Tabain¹, A. Pillai¹

¹University Hospital South Manchester, Manchester, United Kingdom

FP7: 11.41 – 11.46

Correction of ankle and hind foot deformity in Charcot neuroarthropathy using a retrograde hind foot nail

N. Vasukutty¹, H. Jawalkar¹, A. Anugraha², R. Chekuri², R. Ahluwalia¹, V. Kavarthapu¹

¹Kings College Hospital, London, London, United Kingdom,

²Kings College Hospital, London, Orthopaedics, London, United Kingdom

FP8: 11.47 – 11.52

Corrective mid foot fusion for Charcot neuroarthropathy - the Kings' experience

N. Vasukutty¹, A. Anugraha², E. Girgis¹, A. Vris¹, V. Kavarthapu¹

¹Kings College Hospital, London, London, United Kingdom,

²Kings College Hospital, London, Orthopaedics, London, United Kingdom

Discussion: 11.53

FP9: 12.00 – 12.05

Functional outcomes of conservatively managed acute tendo Achilles ruptures

J.E. Lawrence¹, P. Nasr¹, D. Fountain², L. Berman³, A. Robinson¹

¹Addenbrooke's Hospital, Trauma and Orthopaedics, Cambridge, United Kingdom,

²Cambridge University, School for Clinical Medicine, Cambridge, United Kingdom,

³Addenbrooke's Hospital, Clinical Radiology, Cambridge, United Kingdom

FP10: 12.06 – 12.11

Early protected weight-bearing for acute ruptures of the Achilles tendon: do commonly used orthoses produce the required equinus?

P. Ellison¹, L.W. Mason¹, G. Williams¹, A. Molloy¹

¹University Hospital Aintree, Liverpool, United Kingdom

FP11: 12.12 – 12.17

A large single centre series assessing the Achillon® suture system for repair of acute midsubstance achilles tendon ruptures

L. Clarke¹, N. Bali¹, M. Czipri¹, N. Talbot¹, I. Sharpe¹, A. Hughes¹

¹Princess Royal Devon & Exeter Hospital, Exeter, United Kingdom

FP12: 12.18 – 12.23

Percutaneous repair versus conservative management of Tendo-Achilles rupture. Outcomes following a functional rehabilitation programme

N. Grocott¹, C. Heaver¹, R. Rees¹

¹University Hospital of North Midlands, Stoke-on-Trent, United Kingdom

FP13: 12.24 – 12.29

The influence of gap distance on clinical outcome in acute tendo Achilles rupture treated with accelerated functional rehabilitation

A. Qureshi¹, A. Gulati¹, A. Shah¹, J. Mangwani¹

¹University Hospitals of Leicester, Musculoskeletal, Leicester, United Kingdom

FP14: 12.30 – 12.35

Outcomes of a transtendinous flexor hallucis longus transfer for reconstruction of chronic Achilles tendon ruptures

C. Lever¹, H. Bosman², A. Robinson¹

¹Addenbrooke's Hospital, Cambridge, United Kingdom, ²Broomfield Hospital, Chelmsford, United Kingdom

Discussion: 12.36

FREE PAPERS

Thursday, 3rd November 2016

CHAIRS: Roland Russell, Anthony Perera

FP15: 14.00 – 14.05

Ankle fractures; getting it right first time

V. Sinclair¹, A. Walsh², P. Watmough², A. Henderson²

¹North Bristol NHS Trust, Trauma and Orthopaedics, Manchester, United Kingdom,

²Royal Bolton Foundation Trust, Manchester, United Kingdom

FP16: 14.06 – 14.11

Mid term functional outcomes of reduced and malreduced fractures in two university teaching hospitals

V. Roberts¹, L. Mason², E. Harrison², A. Molloy², J. Mangwani¹

¹University Hospitals of Leicester, Department of Trauma and Orthopaedics, Leicester, United Kingdom,

²University Hospitals Aintree, Liverpool, United Kingdom

FP17: 14.12 – 14.17

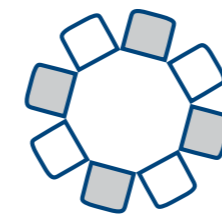
Fixation of Haraguchi type 2 posterior malleolar fractures using a two window posteromedial approach

N. Bali¹, A. Ramasamy¹, S. Mitchell², P. Fenton¹

¹Queen Elizabeth Hospital, Birmingham, United Kingdom,

²Bristol Royal Infirmary, Bristol, United Kingdom

Discussion: 14.18



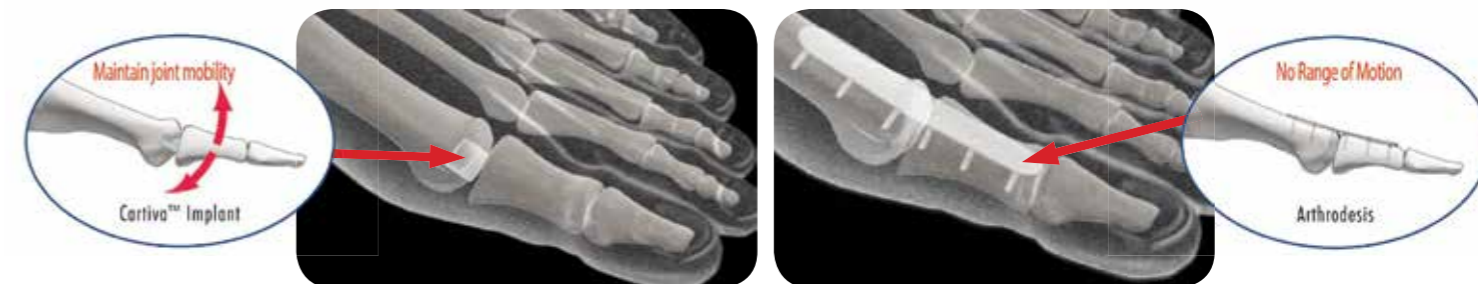
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CARTIVA[®] WET LAB WORKSHOP

Thursday 3rd November 2016

Presented by Chris Blundell and Mark Davies

10.00am - 10.30am

Chris Blundell & Mark Davies present Cartiva[®] Synthetic Cartilage Implant and 2 year motion study results.

10.30am - 11.30am / 12.00pm - 1.00pm

Chris Blundell & Mark Davies lead the wet lab Cartiva[®] Synthetic Cartilage Implant Workshop - a hands on practical experience for attendees and Q&A opportunity.

Certificate of attendance given upon request.

FREE PAPERS

Friday, 4th November 2016

CHAIRS: Tim Clough, Jit Mangwani

FP18: 09.30 – 09.35

The use of weight-bearing CT scan in the evaluation of hindfoot alignment

M. Myerson¹, T. Tracey², J. Kaplan³, S. Li⁴

¹Mercy Medical Center, Institute for Foot and Ankle Reconstruction, Baltimore, United States,

²Mercy Medical Center, Baltimore, United States,

³Orthopedic Specialty Institute, Orange, California, United States, ⁴Tongren University Hospital, Beijing, China

FP19: 09.36 – 09.41

The long term outcomes of arthroscopic ankle arthrodesis and the prevalence of adjacent degenerative joint disease

V. Sinclair¹, E. O'Leary¹, A. Pentlow¹, S. Hepple¹, B. Harries¹, I. Winson¹

¹North Bristol NHS Trust, Bristol, United Kingdom

FP20: 09.42 – 09.47

Management of a failed total ankle replacement with a revision prosthesis. A multi center study of the indications, surgical challenges and short term outcomes of the Salto XT prosthesis

S. Li¹, M. Myerson², J.C. Coetzee³

¹Beijing Tongren Hospital Capital Medical University, Foot and Ankle Center Orthopedic Department, Beijing, China,

²Mercy Medical Center, Baltimore, United States,

³Twin Cities Orthopedic Specialists, Minneapolis, United States

FP21: 09.48 – 09.53

Management of nonunion following subtalar arthrodesis. An analysis of the methods of revision surgery, and the risk factors in achieving arthrodesis

M. Myerson¹, S. Li², C. Taghavi¹, T. Tracey¹

¹Mercy Medical Center, Baltimore, United States,

²Beijing Tongren Hospital, Capital Medical University, Foot & Ankle Centre, Orthopaedic Department, Beijing, China

Discussion: 09.54

FP22: 10.02 - 10.07

Extracorporeal shockwave therapy for refractory heel pain: a prospective study

J. Humphrey¹, L. Hussain¹, A. Latif¹, R. Walker¹, A. Abbasian¹, S. Singh¹

¹Guy's and St Thomas' NHS Trust, London, United Kingdom

FP23: 10.08 – 10.13

Pilot randomised controlled trial of platelet rich plasma versus normal saline for plantar fasciitis

S. Johnson-Lynn¹, A. Cooney², D. Ferguson¹, D. Bunn¹, W. Gray¹, J. Coorsh¹, R. Kakwani¹, D. Townshend¹

¹Northumbria Healthcare NHS Foundation Trust, Orthopaedics, North Shields, United Kingdom,

²South Tyneside General Hospital, Orthopaedics, South Shields, United Kingdom

FP24: 10.14 – 10.19

Hallux valgus: the main risk factor for non union in first MTPJ fusion treated with a dorsal plate

G. Williams¹, C. Butcher¹, A. Molloy¹, L. Mason¹

¹University Hospitals Aintree, Trauma Orthopaedics, Liverpool, United Kingdom

FP25: 10.20 – 10.25

Successful treatment of advanced Freiberg's disease with a dorsal closing wedge osteotomy: 5 year follow up

M. Halai¹, B. Jamal¹, K. David-West¹, NHS Ayrshire & Arran

¹NHS AA, Kilmarnock, United Kingdom

FP26: 10.26 – 10.31

Management of hallux valgus deformity in patients with severe metatarsus adductus. A proposed treatment algorithm

A. Aiyer¹, M. Myerson, M.D.²

¹University Miami, Miami, United States,

²Mercy Medical Center, Baltimore, United States

Discussion: 10.32

Management of Complex Hindfoot and Ankle Deformities with Bone Loss



Mark Myerson MD

Medical Director - Foot and Ankle Association

Workshop

11.00am to 12.30pm

Thursday 3rd November 2016

SS Great Britain Suite

Ground Floor, Marriott Hotel. Bristol

Dr Mark Myerson will discuss his rationale for utilising innovative 3D printed devices in his treatment options for complex hindfoot and ankle deformities with bone defects.

Treating patients with significant bone loss can be an exacting challenge. Even though techniques have evolved and a number of treatment options are now available that may utilise some form of bone graft they are not without potential complications.

The recent introduction of additive manufacturing techniques, also known as '3D printing', into the production of medical devices has opened up the possibility of designing and manufacturing implants which closely match a patient's anatomy. In clinical situations where significant osseous deficits are present patient specific implants can be designed to include the areas of bone loss to restore natural anatomy.

FREE PAPERS ABSTRACTS

FREE PAPERS

Wednesday, 2nd November 2016

FP1

Outcomes of spring ligament reconstruction for idiopathic flexible flatfoot deformity

G. Williams¹, A. Kadakia², P. Ellison¹, L. Mason¹, A. Molloy¹

¹University Hospitals Aintree, Trauma Orthopaedics, Liverpool, United Kingdom, ²Northwestern University, Chicago, Illinois, Orthopaedics, Chicago, United States

Introduction: Traditional treatment of idiopathic flatfoot in the adult population include calcaneal neck lengthening or fusions. These surgical methods result in abnormal function with significant complication rates. Our prospective study aimed to quantify the functional and radiological outcome of a new technique for spring ligament reconstruction using a hamstring graft, calcaneal osteotomy and medial head of gastrocnemius recession if appropriate.

Methods: 22 feet were identified from the senior authors flatfoot reconstructions over a 3 year period (Jan 2013 to Dec 2015). 9 feet underwent a spring ligament reconstruction. The control group were 13 feet treated with standard tibialis posterior reconstruction surgery. Follow up ranged from 8 to 49 months. Functional assessment comprised VAS heath and pain scales, EQ-5D and MOXFQ scores. Radiographic analysis was performed for standardised parameters.

Results: Each group contained two bilateral procedures. The spring ligament patients had a mean age of 43, BMI of 29 and a male to female ratio of 4:1. There were no statistical differences between groups starting point functional scores or pre-operative radiological deformity. Post-operatively there was a statistically significant improvement of all domains and overall MOXFQ, EQ5d and VAS in the spring ligament patients. There was a statistically significant improvement in all radiological parameters with all patients being returned to normal. Functional scores were not significantly better than the control group [MOXFQ components, Control vs spring ligament group, Pain: 42 vs 45 (p=0.71), Walking: 50 vs 56 (p=0.43), Social: 35 vs 39 (p=0.72), EQ-5D: 0.64 vs 0.70 (p=0.72)]. Spring ligament reconstruction produced statistically better deformity correction for 4 of 5 measured radiological parameters (p< 0.05).

Conclusion: Our new method of spring ligament reconstruction restores normal anatomy. In comparison to traditional procedures our method provides equivalent functional results and improved deformity correction.

FP2

Foot and ankle injections - are they worth it?

D. Marsland¹, J. Grice¹, J. Calder¹

¹Fortius Clinic, London, United Kingdom

Introduction: Injections are used to treat a wide variety of pathologies. Our aim was to evaluate the efficacy and safety of foot and ankle injections in our clinic.

Materials and methods: We performed a retrospective review of notes and a telephone questionnaire audit into the clinical outcome of all patients who underwent an injection of the foot or ankle in a year. All procedures were performed in an out-patient setting by a consultant musculoskeletal radiologist using either ultrasound or X-ray guidance, with a minimum of two year follow-up. According to the pathology treated, the type of injection included depomedrone, hyaluronic acid and high volume saline injections.

Results: Overall 410/446 (92%) patients reported a significant improvement in symptoms and 227 (62%) reported complete resolution of their pain, with 127 (28%) remaining asymptomatic at two year follow-up. The mode time of recurrence of pain was three months. 59 (13%) underwent a further injection and 102 (23%) underwent operative intervention within the follow-up period. There were no reported infections. Complications occurred in two percent of patients, including steroid flare, pain and plantar plate ruptures.

Conclusion: Injections are a safe and effective option for treating a variety of foot and ankle conditions and reduce the need for surgery. They are particularly effective for the treatment of ankle soft tissue impingement. They appear ineffective in providing significant improvement in pain for longer than three months in conditions such as plantar fasciitis and hallux rigidus.

FP3

The indications and management of Müller Weiss disease with valgus calcaneus osteotomy

S. Li¹, M. Myerson², M. Monteagudo³

¹Mercy Medical Center, Baltimore, United States, ²Institute for Foot and Ankle Reconstruction, Baltimore, United States, ³Universidad Europea, Madrid, Spain

Müller Weiss disease (MWD) is characterized by lateral navicular necrosis which is associated with a varus alignment of the subtalar joint, varying degrees of arthritis of the talonavicular-cuneiform joints and a paradoxical flatfoot deformity in advanced cases. Although arthrodesis of the hindfoot is commonly used, we present the results of a previously unreported method of treatment using a calcaneus osteotomy incorporating a wedge and lateral translation.

Fourteen patients with MWD who were treated with a calcaneus osteotomy were retrospectively reviewed. There were seven females and seven males with an average age of 56 years (range 33-79), and included one grade 5, five grade 4, four grade 3 and four grade 2 patients. Patients had been symptomatic for an average of eleven years (range 1-14), and all underwent initial conservative treatment with an orthotic support that posted the heel into valgus. The primary indication for surgery was a limited but positive response to the use of the orthotic support, and a desire to avoid an arthrodesis of the hindfoot.

Results: Patients were followed for an average of three years following the procedure (range 1 - 7 years). Patients rated their pain on a visual analogue pain scale as an average of 8 (range 6-9) prior to surgery and an average of 2 postoperatively (range 0-4). The AOFAS scores improved from a mean of 29 (range 25 - 35) preoperatively to a mean of 79 (range 75-88) postoperatively. Hindfoot range of motion remained and the extent of arthritis of the navicular complex was unchanged. No patient has since required an arthrodesis.

Since the majority of MWD patients respond to an orthotic support which changes the load of the hindfoot and forefoot, we believed that patients would respond positively to a calcaneal osteotomy as an alternative treatment.

FP4

Functional outcomes and sporting ability after cheilectomy and first metatarsophalangeal joint arthrodesis for hallux rigidus: a comparative study

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Background: Cheilectomy and arthrodesis are accepted procedures for symptomatic hallux rigidus. Although good functional outcomes have been reported, there is little data available on post-operative sporting ability for these patients.

Aims: We investigated sporting ability and functional outcomes of two cohorts of patients, the first underwent dorsal cheilectomy and the second arthrodesis.

Methods: Physical and sporting ability was assessed using the Foot & Ankle Ability Measure (FAAM) sports questionnaire. Functional outcomes were assessed using MOXFQ. Radiological assessment was done according to Hattrup and Johnson classification. (HJ)

Results: Group A (cheilectomy) consisted of 38 feet (35 patients) with a mean age of 57.2 (31-84) and mean follow-up 21.4 months (6-43). 21.6% were HJ1, 43.2% HJ2 and 35.1% HJ3. Group B (arthrodesis) consisted of 49 feet (47 patients) with a mean age of 64.1 (41-81) and mean follow-up 18.5 months (5-41). 6.8% were HJ1, 40.9% HJ2 and 52.3% HJ3. Mean FAAM score for group A was 78.89% (28.1%-100%). Mean FAAM score for group B was 81.55% (28.1%-100%). Mean MOXFQ score for group A was 14.89/64 (0-41). Mean MOXFQ score for group B was 10.43/64 (0-50). Pain, walking/standing and social domains were 29.74 (0-70), 21.8 (0-96.4) and 17.76 (0-68.8) in group A respectively. In group B, it was 14.79 (0-75), 16.54 (0-78.6), and 17.76 (0-100) respectively. FAAM was higher for group B in comparison to group A, but not statistically significant (P=0.425). Mean MOXFQ score was better in group B compared to group A (P< 0.05). Pain domain in particular was better in group B (P< 0.05).

Conclusion: Our results suggest that both cheilectomy and arthrodesis for hallux rigidus result in similar post-operative sporting ability. Arthrodesis is superior to cheilectomy in overall functional outcomes, particularly in the pain domain.

FP5

Mid-term implant survival, clinical and patient reported outcomes following silastic arthroplasty for the treatment of end stage Hallux rigidus

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Aim: To examine the mid-term survival, clinical and patient reported outcomes of the silastic 1st metatarsophalangeal joint replacement for the treatment of end stage hallux rigidus.

Methods: We reviewed 83 consecutive silastic arthroplasties performed in 79 patients for end stage hallux rigidus. There were 3 men and 76 women; mean age 63 years (range 45-78 years). No patient was lost to follow up. Average follow-up was 5.3 years (1.1-11.3 years). The EQ 5D-5L Health index, Manchester-Oxford Foot Questionnaire (MOXFQ), visual analogue scale (VAS) of pain and overall satisfaction rate (Likert scale) were collected for patient reported outcomes.

Results: 2 patients required revision; 1 for early infection (2 months) and 1 for stem breakage (10 years 1 month). 5 patients reported lateral metatarsalgia, 2 patients reported neuropathic pain, 6 patients developed superficial infection which fully responded to oral antibiotics, and 1 patient developed interphalangeal joint pain. 2 patients died in the cohort. Pre-operative mean MOXFQ was 44, mean EQ5D Index was 0.564 and VAS was 6.97. At mean follow-up of 5.3 years, the mean MOXFQ was 12.7 (0-57), the mean EQ5D Index was 0.851 (-0.02-1) and the mean VAS was 1.67 (0-8). The mean range of motion was 35° (30° dorsiflexion and 5° plantarflexion). The overall satisfaction rate was 90.2%. The implant survival rate was 97.6%.

Conclusions: The silastic big toe arthroplasty offers excellent clinical mid term survival and functional outcomes and could be considered as an attractive alternative to traditional fusion for end stage hallux rigidus.

FP6

Adjuvant antibiotic calcium sulphate bio composites for implant related bone sepsis in foot and ankle - a single stage approach

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Aim: We describe a case series using adjuvant calcium sulphate bio composites with antibiotics in treating infected metalwork in the foot and ankle.

Method: 11 patients aged 22-81 (9 males, 2 females) were treated with clinical evidence of infected limb metal work from previous orthopaedic surgery. Metal work removal with intra osseous application of either cerement in 8 cases (10-20ml including 175mg- 350mg gentamycin) or stimulan in 3 cases (5-12ml including 1g vancomycin) into the site was performed. Supplemental systemic antibiotic therapy (oral/intravenous) was instituted based on intraoperative tissue culture and sensitivity.

Results: 7 patients had infected ankle metalwork, 2 had infected foot metalwork and 2 had infected external fixators. Metal work was removed in all cases. Mean pre operative CRP was 25.4 mg/l (range 1-137mg/l). Mean postoperative CRP at 1 week was 15.4mg/l (range 2-36mg/l) and at 1 month was 16.1mg/l (range 2-63mg/l). Mean pre op WCC was 8.5x10⁹ (range 6.2-10.6x10⁹). Mean post op WCC at 1 week was 8.8x10⁹ (range 5.1-12.7 x10⁹) and 1 month was 7.1x10⁹ (range 3.7-10.4 x10⁹). Organisms cultured included enterobacter, staphylococcus species, stenotrophomonas, acinetobacter, group B streptococcus, enterococcus, escherichia coli, pseudomonas, morganelia morganii and fingoldia magna. Infection eradication as a single stage procedure with primary wound closure and healing was achieved in 10 out of 11 cases (90.9 %). No additional procedures were required in these cases.

Conclusions: Our results support the use of a calcium sulphate bio composite with antibiotic as an adjuvant for effective local infection control in cases with implant related bone sepsis. The technique is well tolerated with no systemic or local side effects. Our results show that a single stage implant removal, debridement and local antibiotic delivery can achieve over 90% success rates. We theorise that it could minimise the need for prolonged systemic antibiotic therapy in such cases.

FP7

Correction of ankle and hind foot deformity in Charcot neuroarthropathy using a retrograde hind foot nail

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Introduction: Corrective fusion for the unstable deformed hind foot in Charcot Neuroarthropathy (CN) is quite challenging and is best done in tertiary centres under the supervision of multidisciplinary teams.

Patients and methods: We present our results with a series of 42 hind foot deformity corrections in 40 patients from a tertiary level teaching hospital in the United Kingdom. The mean patient age was 59 (33-82). 16 patients had type 1 diabetes mellitus, 20 had type 2 diabetes and 4 were non-diabetic. 18 patients had chronic ulceration. 17 patients were ASA 2 and 23 were ASA grade 3. All patients had acute single stage correction and Trigen hind foot nail fusion performed through a standard technique by the senior author and managed peri-operatively by the multidisciplinary team. Our outcome measures were limb salvage, deformity correction, ulcer healing, weight bearing in surgical shoes and return to activities of daily living (ADL).

Results: At a mean follow up of 37 months (7-79) we achieved 100% limb salvage initially and 97% healing of arthrodesis. One patient with persisting non-union has been offered amputation. Deformity correction was achieved in 100% and ulcer healing in 89%. 72.5% patients are able to mobilize and manage independent ADL. There were 11 patients with one or more complications including metal failure, infection and ulcer reactivation. We performed nine repeat procedures including one revision fusion and one vascular procedure.

Conclusion: Single stage corrective fusion for hind foot deformity in CN is an effective procedure when delivered by a skilled multidisciplinary team.

FP8

Corrective mid foot fusion for Charcot neuroarthropathy - the Kings' experience

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Introduction: The mid foot joints are usually the first to be affected in Charcot neuroarthropathy (CN). Reconstruction is technically demanding and fraught with complications.

Patients and methods: We present our experience of mid foot fusion in CN from a tertiary diabetic foot centre. We undertook mid foot corrective fusion in 27 feet (25 patients). Twelve of these had concurrent hind foot fusion. Eleven patients had type 1 diabetes, 12 had type 2 and 2 were non-diabetics. 23 patients were ASA grade 3 and 2 were ASA 2. 21 feet had ulcers preoperatively and mean HbA1c was 8.2. 13 patients had diabetic retinopathy and 6 had nephropathy.

Results: Average patient age was 59 (43 to 80) and our mean follow up was 35 months (7 to 67). One patient was lost to follow up and 2 patients died. Complete follow up data was available for 26 feet in 24 patients. Satisfactory correction of deformity was achieved in all patients. The mean correction of calcaneal pitch was from 0.6 preoperatively to 10.6 degrees postoperatively, mean Meary angle from 22 to 9 degrees, talo- metatarsal angle on AP view from 33 to 13 degree. Bony union was achieved in 21 out of 26 feet and at least one joint failed to fuse in 5. 19 out of 24 patients were able to mobilize fully or partially weight bearing. We had 6 patients with persisting and 3 with recurrent ulceration. Seven repeat procedures were carried out which included 2 revision fixations.

Conclusion: With our technique and a strict protocol 100% limb salvage and 81% union was achieved. 80% patients were mobile and ulcer healing was achieved in 72%. Corrective mid foot fusion is an effective procedure in these complex cases but require the input of a multidisciplinary team for perioperative care.

FP9

Functional outcomes of conservatively managed acute tendo Achillis ruptures

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Aims: This prospective cohort study aimed to determine if the size of the tendon gap following acute tendo Achillis rupture influences the functional outcome following non-operative treatment.

Patients and methods: All patients presenting with acute unilateral tendo Achillis rupture were considered for the study. Dynamic ultrasound examination was performed to confirm the diagnosis and measure the gap between ruptured tendon ends. Outcome was assessed using dynamometric testing of plantarflexion and the Achilles tendon rupture score (ATRS) six months after the completion of a rehabilitation programme.

Results: 38 patients (mean age 52 years, range 29-78 years) completed the study. Patients with a gap ≥ 10 mm with the ankle in the neutral position had significantly greater peak torque deficit than those with gaps < 10 mm (mean 23.3% vs 14.3%, $P=0.023$). However, there was no overall correlation between gap size and torque deficit ($r=0.103$), suggesting a non-linear relationship. There was also weak correlation between ATRS and peak torque deficit ($r=-0.305$), with no difference in ATRS between the two groups (mean score 87.2 vs 87.4, $P=0.467$).

Conclusion: This is the first study to identify tendon gap size as a predictor of functional outcome in acute tendo Achillis rupture, although the precise relationship between gap size and plantarflexion strength remains unclear. Large, multi-centre studies will be needed to clarify this relationship and identify population subgroups in whom deficits in peak torque are reflected in patient-reported outcome measures.

FP10

Early protected weight-bearing for acute ruptures of the Achilles tendon: do commonly used orthoses produce the required equinus?

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Introduction: The dichotomy between surgical repair and conservative management of acute Achilles tendon ruptures has been eliminated through appropriate functional management. The orthoses used within functional management however, remains variable. Functional treatment works on the premise that the ankle/hindfoot is positioned in sufficient equinus to allow for early weight-bearing on a 'shortened' Achilles tendon. Our aim in this study was to test if 2 common walking orthoses achieved a satisfactory equinus position of the hindfoot.

Methods: 10 sequentially treated patients with 11 Achilles tendon injuries were assigned either a fixed angle walking boot with wedges (FAWW) or an adjustable external equinus corrected vacuum brace system (EEB). Weight bearing lateral radiographs were obtained in plaster and the orthosis, which were subsequently analysed using a Carestream PACS system. The Mann-Whitney test was used to compare means.

Results: Initial radiographs of all patients in cast immobilization showed a mean tibio-talar angle (TTA) of 55.67° (SD1.21) and a mean 1st metatarsal-tibia angle (1MTA) of 73.83° (SD9.45). There were 6 Achilles tendons treated in the FAWW. Their measurements showed a mean TTA of 27.67°(SD7.71) and 1MTA 37.00 (5.22). 5 tendons were treated using an EEB; there was a statistically significant ($p < .05$) increase in both the TTA 47.6° (SD5.90) and 1MTA 53.67 (SD5.77) compared to the FAWW group.

Discussion: Plantar-flexion at the ankle was significantly greater in the EEB comparative to the FAWW, and very similar to the initial equinus cast. The use of wedges produced an equinus appearance through the midfoot, without producing equinus in the hindfoot as the heel pad rests on the top wedge. We express caution in the use of wedges for Achilles treatment as they do not shorten the Achilles tendon and may result in a lengthened tendon and reduced plantar-flexion power in the long-term.

FP11

A large single centre series assessing the Achillon® suture system for repair of acute midsubstance achilles tendon ruptures

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Introduction: Active patients may benefit from surgical repair of the achilles tendon with the aim of preserving functional length and optimising push-off power. A mini-open device assisted technique has the potential to reduce wound complications, but risks nerve injury. We present the largest published series of midsubstance achilles tendon repairs using the Achillon® device.

Methods: A prospective cohort study was run at the Princess Royal Devon & Exeter Hospital between 2008 and 2015. We included all patients who presented with a midsubstance Achilles tendon rupture within 2 weeks of injury, and device assisted mini-open repair was offered to a young active adult population. All patients in the conservative and surgical treatment pathway had the same functional rehabilitation protocol with a plaster for 2 weeks, and a VACOPed boot in reducing equinus for a further 8 weeks.

Results: 354 patients presented with a midsubstance achilles tendon rupture over a 7-year period, of which 204 had conservative treatment and 150 patients had surgical repair with the Achillon device. Patients were assessed clinically for a minimum of 10 weeks, with long-term notes surveillance for late complications. The rerupture rate for conservative treatment was 1.5%, with no reruptures in the Achillon group. Infections in the surgical group were superficial in 2 cases (1.3%) and deep in 3 cases (2%). Pulmonary embolus occurred in 2 Achillon cases (1.3%), and 1 conservatively managed case (0.5%). There was 1 case of temporary sural nerve irritation in each group.

Discussion: Our series show encouraging results for the Achillon® repair with no reruptures and a low complication profile. Functional rehabilitation is likely to have contributed to the low rerupture rate. Studies are emerging that show earlier and improved calf muscle strength in those having surgical repair, suggesting a role for device assisted mini open repair in a selected population.

FP12

Percutaneous repair versus conservative management of Tendo-Achilles rupture. Outcomes following a functional rehabilitation programme

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Background: Patients presenting with an acute tendoachilles (TA) rupture are managed in a dedicated clinic led by a Foot & Ankle Consultant and specialist physiotherapist. The diagnosis is made clinically and no ultrasound scan is performed. All management, rehabilitation and follow-up is undertaken within this clinic by the specialist physiotherapist, with Consultant support as required. Patients are offered a choice of conservative or surgical management (percutaneous TA repair). Both groups undergo a standardised functional rehabilitation regimen.

Methods: All patients treated through our dedicated clinic between May 2010 and April 2016 were identified. Patient outcomes were reported using the validated Achilles Tendon Repair Score (ATRS). ATRS scores were collected at 3, 6 and 12 months post-injury. Re-rupture and complication rates were also documented.

Results: 167 patients were identified. 79 patients underwent a percutaneous repair and 88 patients opted for conservative management.

Mean age of patients undergoing percutaneous repair was 46 years (21-77 years) and 52 years (19-88 years) in the conservatively managed group. Male to female ratios were equal between both groups. Mean ATRS scores at 3, 6 and 12 months were 41.6, 69.5 and 85.3 respectively for the percutaneous repairs and 45.4, 69.0 and 77.1 respectively for the conservatively managed group.

The re-rupture rate was 4.2% (3 patients) in the conservative group and 0% in our surgical group. In the surgical group, 1 patient developed a PE and 1 had a wound complication.

Discussion: Our dedicated clinic for managing TA ruptures has proved popular with patients, with a patient satisfaction score of 98.7%. By standardising our rehabilitation regimen we believe our outcomes have improved. Our percutaneous repair group has an improved ATRS score compared to our conservative group at 12 months post injury. We believe that any fit active individual should be offered a percutaneous repair irrespective of age.

FP13

The influence of gap distance on clinical outcome in acute tendo Achilles rupture treated with accelerated functional rehabilitation

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Aim: To determine the influence of tendo achilles (TA) rupture gap distance and location on clinical outcome managed with accelerated functional rehabilitation.

Methods: Twenty six patients with acute complete TA ruptures underwent ultrasound (US) within a week of injury. Measurements included the distance of the rupture from the enthesis and the gap distance between the tendon edges in three positions -

- (1) foot plantigrade,
- (2) maximum equinus and
- (3) maximum equinus with 90° knee flexion.

All patients were managed non-operatively in functional weightbearing orthoses. Nineteen patients were followed up at a mean of 6.1 years (range 5.8-6.5). Outcomes included ultrasound confirmation of healing, Achilles Tendon Rupture Score (ATRS) and Modified Lepilahti score (MLS).

Results: The mean distance of the rupture from the enthesis was 52mm (range: 40-76mm). The mean gap distance with the foot plantigrade was 11.4mm (95%CI: 9.9, 12.9) which reduced to 4.8mm (95%CI: 3.3, 6.4) in equinus and 1.5mm (95% CI: 0.8, 2.2) with 90° knee flexion. At follow up, no re-ruptures had occurred. US demonstrated continuity in all healed tendons. Mean ATRS was 86 (95%CI: 78.8, 93.9). There was a significant correlation between the distance of the rupture with the MLS ($p=0.015$) and the ATRS domains of strength ($p=0.037$) and fatigue ($p=0.017$). There was no significant correlation between the measured gap distance in the three positions with respect to the MTLs, ATRS or individual ATRS domain scores. There was no significant difference when comparing outcomes between left and right TAs or comparing gaps less than 1cm with those greater than 1 cm.

Discussion: The distance of the gap from the enthesis may be more predictive of mid term clinical outcome in patients with TA rupture managed with accelerated functional rehabilitation compared with the magnitude of the gap and extent of closure with equinus and knee flexion.

FP14

Outcomes of a transtendinous flexor hallucis longus transfer for reconstruction of chronic Achilles tendon ruptures

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Introduction: Patients with neglected rupture of the Achilles tendon typically present with weakness and reduced function rather than pain. Shortening of the musculotendinous unit and atrophy of the muscle belly in chronic rupture potentially leads to poorer recovery following tendon transfer. Few papers have looked at the outcomes of FHL reconstruction specifically in neglected TA rupture. Of those that have none report functional outcomes following a transtendinous repair.

Methods: Twenty patients with irreparable unilateral tendoachilles ruptures treated with transtendinous FHL reconstruction between 2003 and 2011 were reviewed. Achilles Tendon Rupture Score (ATRS), AOFAS hindfoot score, Tegner score and SF12 were recorded. Standard isokinetic assessment of ankle plantarflexion was performed with a Cybex dynamometer. Great toe flexion strength was tested clinically.

Results: The mean age at surgery was 53 years (22-83 years). Mean time from rupture to surgery was 7 months (1-36 months). Follow up ranged from 29-120 months (mean 73 months).

Sixteen patients were completely satisfied and four moderately satisfied. The mean ATRS was 80 (range 25-100) and AOFAS 94 (range 82-100). Postoperative Tegner score showed a reduction by one level from pre-injury (mean 5.1 pre injury to 4.3 post surgery). No cases of re-rupture were encountered. Six patients had wound issues.

The mean maximal strength of ankle plantar flexion on the operated leg 95Nm (41-163) was less than the non-operated leg 123 Nm (50-190Nm). The average difference in strength was 24%.

The operated hallux had only 40% of strength in flexion of the contralateral toe. There were no floating toes.

Conclusion: Transtendinous FHL transfer for late presenting Achilles tendon ruptures provides reliable long term function and reasonable ankle plantar flexion strength. Long FHL harvest has little morbidity and lack of a distal tenodesis did not result in any notable functional loss or alignment issues to the great toe.

FREE PAPERS

Thursday, 3rd November 2016

FP15

Ankle fractures; getting it right first time

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Introduction: Ankle fractures are common injuries presenting to trauma departments and ankle open reduction and internal fixation (ORIF) is one of the first procedures targeted in early orthopaedic training. Failure to address the fracture pattern with the appropriate surgical technique and hardware may lead to early failure resulting in revision procedures or premature degenerative change. Patients undergoing revision ORIF are known to be at much greater risk of complications, and many of these secondary procedures may be preventable.

Method: A retrospective analysis of all patients attending our unit for ankle ORIF over a two year period was undertaken. Patients were identified from our Bluespier database and a review of X rays was undertaken. All patients undergoing re-operation within eight weeks of the primary procedure were studied. The cause of primary failure was established and potential contributing patient and surgical factors were recorded.

Results: 236 patients undergoing ankle ORIF were identified. 13 patients (5.5%) returned to theatre for a secondary procedure within eight weeks. Within this group, 7 (54%) patients returned for treatment of a neglected or under treated syndesmotom injury, 3 (23%) for complete failure of fixation, 2 (15%) with wound problems and 1 (8%) for medial malleolus mal-reduction. Of the patient group, 5 (38%) were known type 2 diabetics. Consultants performed 2 (15%) of procedures, supervised registrars 5 (39%) and unsupervised registrars 6 (46%) operations.

Conclusion: Errors are being made at all levels of training in applying basic principles such as restoring fibula length and screening the syndesmosis intra-operatively. Appropriate placement and selection of hardware is not always being deployed in osteopenic bone resulting in premature failure of fixation and fracture patterns are not being fully appreciated. Patients are undergoing preventable secondary procedures in the operative treatment of ankle fractures.

FP16

Mid term functional outcomes of reduced and malreduced fractures in two university teaching hospitals

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Introduction: We performed a longitudinal outcome study involving the operative management of ankle fractures at two university teaching hospitals. This was a retrospective review of the quality of reduction and a prospective study into the functional outcome.

Methods: All patients undergoing open reduction internal fixation of the ankle between November 2006 and November 2007 at one centre, and January to December 2009 at the other were included. Adequacy of reduction was assessed on the initial post-operative radiographs using Pettrone's criterion. The post-operative functional outcome was recorded using the Lower Extremity Functional Scale (LEFS), completed by postal or telephone follow-up at 64 months post injury (60-74 months).

Results: There were 261 patients in the cohort, with a mean age of 47 years (17-91). Weber B fractures were sustained in 193 patients compared to 68 Weber C fractures. The medial malleolus was fractured in 43 cases, and a large posterior malleolar fragment (>20%) was found in 13 cases. Malreduction of the Weber B cohort was identified in 61 ankles (31%): Malreduction of the Weber C cohort was identified in 25 cases (37%): At time of follow-up 26 patients were not traceable or had died. Of the surviving 235 patients, 139 responded to the LEFS questionnaire (60%). The mean LEFS was 58 (out of 80) in the Weber B cohort and 61 in the Weber C cohort. Significantly lower LEFS were found in patients who had a malreduction in 2 or more criteria.

Conclusion: Our study shows that there is high incidence of malreduction in the operative treatment of ankle fractures which leads to a significantly poorer functional outcome. We strongly recommend that adequate care and supervision are used in theatre together with post-operative independent review of intra-operative fluoroscopy images.

Fixation of Haraguchi type 2 posterior malleolar fractures using a two window posteromedial approachN. Bali¹, A. Ramasamy¹, S. Mitchell², P. Fenton¹¹Queen Elizabeth Hospital, Birmingham, United Kingdom,²Bristol Royal Infirmary, Bristol, United Kingdom

Introduction: Fixation of posterior malleolar fragments associated with ankle fractures aims to stabilise the syndesmosis and prevent posterior subluxation. Haraguchi described 3 types of posterior malleolar fractures, with type 2 being a medial extension injury, these fractures often involve medial and posterior fragments. We describe the techniques and outcomes for a double window posteromedial approach allowing optimal reduction and stabilisation.

Methods: A retrospective review was performed at 2 units, Bristol Royal Infirmary and QE Hospitals Birmingham, between August 2014 and April 2016. Inclusion criteria were all patients having this posteromedial approach for closed ankle fracture fixation. Patients were assessed for complications and postoperative ankle function with the Olerud and Molander scoring system.

Results: We identified 9 patients treated over an 18 months with average follow up 9 months (range 4-18 months). All had an ankle dislocation reduced on scene or in ED, with 5 having posterior subluxation of the talus on the original films. None were open injuries. All had fixation of a posteromedial malleolar fragment, with 7 requiring a further direct lateral incision. Olerud and Molander ankle function score averaged at 72 (range 60-85) at short term follow up.

Discussion: Approaches to the posteromedial fragments have been previously described in 2 ways. One utilises a window just medial to the Achilles tendon taking the neurovascular bundle medially, while the other approaches between tibialis posterior and FDL taking the neurovascular bundle laterally. Neither delivers complete access to an injury that often has sagittal and coronal splits needing individual reduction and fixation. Our approach over the neurovascular bundle allows 2 safe corridors through a single incision facilitating fragment specific fixation of both the medial and posterior components of the injury. Early results suggest this to be a safe and reliable technique to reduce and stabilise complex posteromedial ankle fractures.

FREE PAPERS

Friday, 4th November 2016

The use of weight-bearing CT scan in the evaluation of hindfoot alignmentM. Myerson¹, T. Tracey², J. Kaplan³, S. Li⁴¹Mercy Medical Center, Institute for Foot and Ankle Reconstruction, Baltimore, United States,²Mercy Medical Center, Baltimore, United States,³Orthopedic Specialty Institute, Orange, California, United States,⁴Tongren University Hospital, Beijing, China

Background: There have been multiple techniques described to determine hindfoot alignment radiographically. The 2-dimensional nature of radiographs fails to take into account the contribution of the remainder of the foot to overall alignment. A new radiographic technique has been published in which the hindfoot alignment is calculated using the Ground Reaction Force Calcaneal Offset. This technique accounts for the individual forefoot contribution to alignment, but is still limited by its 2-dimensional nature. The purpose of this study was to compare the hindfoot moment arm (HMA) described by Saltzman and the hindfoot alignment angle (HAA) described by Williamson, with a technique determining the ground reaction force calcaneal offset (GRF-CT) using 3-dimensional weight bearing CT Scans.

Methods: The HMA, HAA, and GRF-CT 3-D weight bearing CT scans were measured by three different investigators. Each of these measurements were calculated twice on separate occasions by each investigator to determine the intra- and inter-observer reliability.

Results: 104 patients underwent weight bearing hindfoot alignment radiographs and 3-dimensional weight bearing CT scans including 33 patients with varus and 71 patients with valgus hindfoot deformities. There was excellent intra- and inter-observer reliability with all three measurement techniques ($P < 0.01$), however the GRF-CT showed the best intra- and inter-observer reliability with the lowest standard deviation ($P < 0.001$).

Conclusions: The GRF-CT technique is more reliable than traditional radiographic techniques for measuring the hindfoot alignment. While the intra- and inter-observer reliability is good for all three techniques, the GRF-CT technique resulted in the best intra- and inter-observer reliability with the lowest standard deviation. This technique provides the most accurate hindfoot alignment as it takes into account the effect of forefoot on overall alignment, preventing inaccuracies of projection and foot orientation in contrast to traditional radiographic techniques, which may be valuable in surgical decision making.

FP19

The long term outcomes of arthroscopic ankle arthrodesis and the prevalence of adjacent degenerative joint disease

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Introduction: Arthroscopic ankle fusion is an effective treatment for end stage ankle arthritis. It reliably improves pain but at the expense of ankle motion. Development of adjacent degenerative joint disease in the foot is thought to be a consequence of ankle fusion due to altered biomechanics. However, it has been reported to be present on pre-operative radiographs in many patients. There is very little evidence reporting the long-term outcomes of patients undergoing arthroscopic ankle fusion and particularly those requiring secondary procedures for adjacent joint disease.

Material and methods: We reviewed the operative records of 149 patients who had undergone arthroscopic ankle fusion under the care of two consultant foot and ankle surgeons between 2002 and 2006. We contacted patients by telephone to determine whether they had required further investigation or surgery on the same foot after their index procedure. Secondary outcome measures included a Manchester Oxford Foot Questionnaire (MOQFQ) score and a patient satisfaction score.

Results: 149 patients underwent 151 arthroscopic ankle fusions. Nine had died or developed dementia and 30 patients had incomplete hospital records leaving 111 available for follow-up with a response rate of 55% (65 ankles). The average time to follow-up was 12.0 years (9.5-16.6 years). 14 patients (22%) had undergone a secondary procedure including injections on the foot or ankle of the same side as the index procedure. Four of these procedures were arthrodeses and three of these were of the subtalar joint. Mean MOQFQ score was 18.0 (0-55). Overall 83% (54) patients were very satisfied or satisfied with their ankle fusion.

Conclusions: Arthroscopic ankle arthrodesis results in high patient satisfaction rates at long-term follow-up. The number of patients requiring a secondary procedure due to ongoing pain and adjacent degenerative joint disease in their foot following ankle arthrodesis is low.

FP20

Management of a failed total ankle replacement with a revision prosthesis. A multi center study of the indications, surgical challenges and short term outcomes of the Salto XT prosthesis

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Background: Revision total ankle arthroplasty (TAA) can be extremely challenging due to bone loss and deformity. We present the results examining the preliminary indications and short term outcomes for the use of the Salto XT revision prosthesis.

Material and methods: We conducted an IRB approved prospective review revision TAA performed in two institutions using the Salto XT. There were 40 patients (24 females and 16 males with an average age of 65 years (45-83), who had undergone previous TAA (Agility 27, Salto 4, STAR 4, Buechal Pappas 1), and 4 patients who underwent staged procedures for infection. The primary indications for the revision were loosening and subsidence (34), malalignment (17), cyst formation (8), infection (4).

Results: Severe bone loss of the talus (30) and distal tibia (5) caused by erosion or cysts (8) were treated with cancellous bone graft (33), cement (7), or a combination (12). A press fit of the tibial component was obtained in 25 cases, and of the talus in 17. The talar component was seated directly onto the calcaneus in 4 cases supplemented anteriorly by cancellous bone graft. Patients were followed up for an average of 24.2 months (range 12-36 months). The overall complication rate was 25%. An 85% survivorship of the revision TAA was achieved (4 cases of postoperative infection and 2 cases of implant loosening). At the last follow-up visit, the remaining 34 implants were stable and none had loosened nor failed.

Conclusion: Revision ankle replacement with bone loss is a technically challenging procedure with acceptable outcomes for the patient but an 85% survivorship even in the short term. We noted the complexity yet feasibility of performing revision TAA, and determined that the stability of the prosthesis was important. The short term survivorship indicates a likely higher rate of failure in the longer term.

FP21

Management of nonunion following subtalar arthrodesis. An analysis of the methods of revision surgery, and the risk factors in achieving arthrodesis

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Background: Subtalar nonunion has a detrimental effect on patients' function, and pose a significant challenge for surgeons particularly in the setting of higher risk factors.

Methods: We retrospectively analyzed a consecutive series of 49 subtalar nonunions between October 2001 and July 2013. Patient records and radiographs were reviewed for specific patient demographics and comorbidities, subsequent treatments, revision fusion rate, use of bone graft, complications, and clinical outcome.

Results: Forty-nine patients with a mean age of 49 years (range 23-80) were included. Sixteen (32%) were heavy smokers (>1 pack per day) and five (10%) had diabetes. Forty one (84%) of the nonunions were symptomatic and underwent a revision procedure at a mean of 16 months (range 2.8 to 57) from the time of the primary arthrodesis. Four of these patients required a triple arthrodesis at the time of revision. Bone graft was used in all cases, and in 25 cases (61%) additional adjuvant orthobiologics. Thirty-two (78%) of the patients achieved a solid arthrodesis at a mean of 3.4 months (range 1.4 to 7.6). Patients who were diabetic and smokers as a group had a 68% rate of union. Of the nine nonunions following a revision arthrodesis, five were in the setting of a prior ankle arthrodesis, three were complicated by a deep infection, and one had no obvious risk factors. Four of the repeat nonunions elected to not undergo an additional procedure, two had a successful third attempt at arthrodesis, one had an additional nonunion followed by a successful fourth attempt at arthrodesis, one had a successful tibiototalcaneal arthrodesis, and one ultimately required a below-knee amputation.

Discussion: Management of subtalar nonunions pose a significant challenge with a low rate of arthrodesis at 78% fusion rate, but which can be achieved with rigid fixation and utilization of bone graft and orthobiologics.

FP22

Extracorporeal shockwave therapy for refractory heel pain: a prospective study

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Background: Previous studies have individually shown extracorporeal shockwave therapy (ESWT) to be beneficial for mid-substance Achilles tendinopathy, insertional Achilles tendinopathy or plantar fasciitis. The purpose of this pragmatic study was to determine the efficacy of ESWT in managing the three main causes of refractory heel pain in our routine clinical practice.

Methods: 236 patients (261 feet) aged between 25 - 81 years (mean age 50.4) were treated in our NHS institute with ESWT between April 2014 and May 2016. They all underwent a clinical and radiological assessment (ultrasonography +/- magnetic resonance imaging) to determine the primary cause of heel pain. Patients were subsequently categorized into three groups, mid-substance Achilles tendinopathy (55 cases), insertional Achilles tendinopathy (55 cases) or plantar fasciitis (151 cases). If their symptoms were recalcitrant to compliant first line management for 6 months, they were prescribed three consecutive ESWT sessions at weekly intervals. All outcome measures (foot & ankle pain score, EQ-5D) were recorded at baseline and 3-month follow-up (mean 18.3 weeks, range 11.4 to 41).

Results: Complete data sets were obtained for 41% of the ESWT treatments (107/261). EQ-5D scores showed a statistically significant improvement between baseline and follow-up in all three-treatment groups; mid-substance Achilles tendinopathy 0.681 to 0.734, insertional Achilles tendinopathy 0.687 to 0.742 and plantar fasciitis 0.684 to 0.731 (p< 0.05). The foot & ankle pain scores grouped for all causes of heel pain also showed a statistically significant reduction from 6.78 at baseline to 5.36 at follow-up (p< 0.05).

Conclusion: Overall our results showed that ESWT is an effective tool for the management of all refractory heel pain in an NHS foot & ankle clinical practice.

FP23

Pilot randomised controlled trial of platelet rich plasma versus normal saline for plantar fasciitis

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Platelet rich plasma has been advocated for the treatment of plantar fasciitis but there are few good quality clinical trials to support its use. We report a pilot double blind randomised controlled trial of platelet rich plasma versus normal saline.

Methods: Patients with more than 6 months of MRI proven plantar fasciitis who had failed conservative management were invited to participate in this study. Patients were block randomised to either platelet rich plasma injection (intervention) or equivalent volume of normal saline (control). The techniques used for the injection and rehabilitation were standardised for both groups. The patient and independent assessor were blinded. Visual analogue scale for pain (VAS) and painDETECT were recorded pre-op and at 6 months.

Results: Twenty-eight patients (19 females, mean age 50 years) were recruited, with 14 randomised to each arm. At 6 month follow-up, 8 patients (28.6%) were lost to follow-up. There was a significant change in VAS score from baseline to follow-up in both intervention (mean change 37.2, $p = 0.008$) and control (mean change 42.2, $p = 0.003$) groups. However there was no difference between the arms in terms of the change in VAS score from baseline to follow-up ($p = 0.183$). There was no correlation between pre-op PainDETECT score and change in VAS.

Conclusion: This pilot study has failed to show a significant benefit of platelet rich plasma compared to saline injection, although both treatments have shown a significant improvement in symptoms. This may be due to the needling effect of injections. A larger study is required to demonstrate a meaningful change. Loss to follow in this patient group should be considered.

FP24

Hallux valgus: the main risk factor for non union in first MTPJ fusion treated with a dorsal plate

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Introduction: We aimed to retrospectively identify risk factors for delayed / non-union for first metatarsophalangeal joint fusion.

Methods: Case notes and radiograph analysis was performed for operations between April 2014 and April 2016 with at least 3 months post-operative follow up. Union was defined as bridging bone across the fusion site on AP and lateral radiographic views with no movement or pain at the MTPJ on examination. If union was not certain, CT scans were performed. All patients operations were performed/supervised by one of three consultant foot surgeons. Surgery was performed through a dorsal approach using the Anchorage compression plate. Blinded pre-operative AP radiographs were analysed for the presence of a severe hallux valgus angle equal or above 40 degrees. Measurement intra-observer reliability was acceptable (95% CI:1.6-2.3 degrees). Smoking and medical conditions associated with non-union underwent univariate analysis for significance.

Results: 73 patients, 9 male, 64 female with a mean age of 61 years (range, 29 to 81) comprised the patient group. Mean follow up time was 13 months for both union vs non-union groups (range 3 to 24 months). 7 patients were identified as non / delayed union (9.6%). All smokers healed ($n = 17$), age, diabetes, COPD and rheumatoid arthritis did not show significant associations with non-union. Pre-operative hypothyroidism (relative risk 6.9, $p = 0.05$) and severe hallux valgus (relative risk 9.9, $p = 0.002$) were significantly associated with non / delayed union.

Conclusion: Although overall bone mineral density is unaffected, studies have demonstrated abnormal bone remodelling in patients with hypothyroidism which may account for this unexpected finding. A dorsally placed locking plate with a dorsal to plantar placed compression screw is at a biomechanical disadvantage to resist lateral force when trying to hold a corrected severe hallux valgus. These patient groups may benefit from supplementary fixation techniques.

FP25

Successful treatment of advanced Freiberg's disease with a dorsal closing wedge osteotomy: 5 year follow up

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Treatment for Freiberg's disease is largely conservative. For severe disease and refractory cases, there are various surgical options. Most studies are from the Far-Eastern population and have short follow-up. The purpose of this study was to report the 5 year clinical outcomes of a dorsal closing wedge osteotomy in the treatment of advanced Freiberg's disease in a Caucasian population.

Twelve patients (12 feet), with a mean age of 30.7 years (range 17-55), were treated with a synovectomy and a dorsal closing wedge osteotomy of the affected distal metatarsal. There were 10 females and 2 males. All patients were born in the United Kingdom. Clinical outcomes were independently evaluated pre and postoperatively using the American Orthopaedic Foot and Ankle Society (AOFAS) scoring system and a subjective satisfaction score. Nine (75%) feet involved the 2nd metatarsal and 3 feet (25%) involved the 3rd metatarsal. According to the Smillie classification, 6 feet were Grade IV and 6 feet were grade V. Radiological union was evaluated postoperatively.

No patients were lost to follow up and the mean follow-up time was 5.2 years (4-7). AOFAS scores improved from 48.1 +/- 7.4 to 88.9 +/- 10.1 postoperatively ($p < 0.001$) giving a mean improvement of 40.8. 92% of patients were satisfied with their operation at latest follow-up, reporting excellent or good results. All patients had postoperative radiological union. One patient had a superficial postoperative infection that was successfully treated with oral antibiotics.

A dorsal closing wedge osteotomy is an effective treatment of advanced Freiberg's disease in a Caucasian population, with good outcomes and few complications.

FP26

Management of hallux valgus deformity in patients with severe metatarsus adductus. A proposed treatment algorithm

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Introduction: Metatarsus adductus (MA) increases the risk of recurrence following surgery for hallux valgus (HV). The goal of this study was to analyze patients with severe MA and identify clinical/surgical factors that are associated with a lower rate of recurrent deformity.

Methods: 587 patients underwent correction of HV deformity. The rate of recurrence of HV was 15% (63 out of 414 patients) in patients without MA (MA angle $< 20^\circ$) and 29.6% (50 out of 173 patients) in patients with MA. 19 patients with severe MA ($> 31^\circ$) were identified; 8 of 19 had associated tarsometatarsal arthritis, and two patients had a skew foot deformity. Ten patients had severe valgus lesser toe deformities. Clinical information collected included associated diagnoses, the presence of arthritis of the tarsometatarsal joints, the presence and degree of lesser toe valgus deformities and surgical procedures performed. Radiographic recurrence was defined as a postoperative HVA $> 20^\circ$.

Results: 9/19 patients were treated with a modified Lapidus procedure and 10 patients underwent a distal first metatarsal osteotomy. Of the 9 patients who were treated with a modified Lapidus procedure, 6 patients underwent simultaneous realignment lesser metatarsal osteotomy or arthrodesis of the 2nd/3rd TMT joints. 1/9 of these patients had radiographic recurrence of deformity. Of the 10 patients who underwent a distal first metatarsal osteotomy without realignment proximal osteotomy or arthrodesis, 5 had recurrence of deformity. Of the 11 patients with severe valgus lesser toe deformity, those who were treated with simultaneous additional distal lesser metatarsal osteotomies, did not have recurrence of hallux valgus.

Conclusion: The use of a modified Lapidus procedure led to a lower rate of HV deformity recurrence in comparison to isolated distal first metatarsal osteotomies. Treatment of lesser toe deformity with distal osteotomy should be included as part of the treatment algorithm.

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POSTERS SUMMARY

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Does urinary cotinine level correlate with post-operative complications in elective foot and ankle surgical patients?

A. Salandy¹, K. Malhotra¹, A. Goldberg¹, N. Cullen¹, D. Singh¹
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Silastic arthroplasty versus 1st metatarsophalangeal joint arthrodesis: a prospective comparative series

S.E. Eastwood¹, A. Kingman¹, S. Asaad¹, J. Coorsh¹, R. Kakwani¹, A.N. Murty¹, D. Townshend¹
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D. Gibson¹, A. Tucker¹, D. O'Longhain¹, J. Wong¹
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POSTERS ABSTRACTS

P1

Does urinary cotinine level correlate with post-operative complications in elective foot and ankle surgical patients?

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Introduction: Smoking is associated with adverse post-surgical outcomes. Cotinine is a nicotine metabolite and raised levels have been associated with increased complications in head and neck surgery. However, to date no clinical study has investigated the link between cotinine levels and complications following orthopaedic surgery.

Method: A single centre prospective study was conducted between September 2013 and July 2014 on 127 patients undergoing an osteotomy or fusion of the foot or ankle. Patients were followed up post operatively at weeks two, six, twelve, twenty-four, fifty-two or until union. Non-unions, delayed unions, deep surgical site infections and wound complications were recorded. Urinary cotinine level was measured on the day of admission using the Concateno Urine Cotinine enzyme-linked immunosorbent assay (ELISA).

Results: 20 (15.8%) patients reported being a current smoker. 26 (20.5%) of 127 patients had a complication. The mean cotinine value for patients with complications was 353.8 +/- 1035.6. This was not statistically different from those without complications, 1168.3 +/- 4953 (p=0.41). Spearman rank order correlation demonstrated no statistical significance between assay level and complication rate at weeks 2, 6, 24 or overall. There was a statistically significant but negligible correlation at weeks 12 (r=0.194, p=0.29) and 52 (r=0.237, p=0.007).

Conclusion: Our results did not demonstrate a correlation between cotinine level and post-operative complications following elective foot and ankle surgery.

P2

Silastic arthroplasty versus 1st metatarsophalangeal joint arthrodesis: a prospective comparative series

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Both 1st MTPJ arthrodesis and silastic arthroplasty have been shown to provide good long-term outcomes for end-stage hallux rigidus. Novel implants are compared against arthrodesis as a historical gold standard. Although there is good evidence to demonstrate long term survival from the established Swanson silastic arthroplasty there are no published studies comparing this to arthrodesis. We present a comparison of outcomes in patients who had these procedures performed after a shared decision-making process.

Consecutive patients who received 1st MTPJ arthrodesis or silastic arthroplasty for hallux rigidus between June 2014 and November 2015 were included. Demographics, complications and prospectively collected pre-operative and 6-months post-operative PROMS (MOXFQ and VAS) were reviewed.

61 patients received silastic arthroplasty (52 female, mean age 63 years) and 61 patients received arthrodesis (25 female, mean age 60 years). Complete PROMS data was available for 53% of patients. There was a significant improvement in MOXFQ and VAS following both silastic arthroplasty (MOXFQ mean change 18, p=0.005; VAS mean change 24, p=0.0004) and arthrodesis (MOXFQ mean change 38, p< 0.0001; VAS mean change 44, p< 0.0001). There was a significant difference in mean improvement of both MOXFQ and VAS in favour of arthrodesis (MOXFQ p=0.0004, VAS p=0.002). There was 1 post-operative infection and 1 reoperation (conversion to fusion) in the silastic arthroplasty group, and 1 post-operative infection and 6 reoperations (4 removal of prominent metalwork, 2 revision fusions) in the arthrodesis group.

Both silastic arthroplasty and arthrodesis have shown a significant improvement in pain and function with low complication rates. Patients may choose arthroplasty over arthrodesis to maintain motion. In these cohorts, arthrodesis showed a greater improvement over silastic arthroplasty in patient reported outcomes but a higher reoperation rate and this should be considered in the shared decision-making process.

P3

Peroneal tendon dislocation - is the fleck sign being overlooked?

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Introduction: Peroneal tendon dislocation (PTD) is frequently overlooked and missed. The presence of a lateral malleolar bony fleck is a pathognomonic sign. Classification systems only describe the presence of small bony flecks, and we aimed to see if a new classification with a large bony fragment should be included.

Method: All calcaneal fracture admissions were retrospectively identified from a prospectively collated Fracture Outcomes Research Database (FORD) between (insert dates). CT scans were reviewed by two of the authors, to identify PTD, and the presence of a fleck sign. Radiographs, multiplanar reconstructed (MPR) CT images were reviewed and the fleck sizes measured, as well as using an integrated software programme (Vitrea, Toshiba, Holland). Interobserver agreement by way of Cohens Kappa was calculated.

Results: A total of 79 patients were identified. PTD was present in 20/79. Plain radiographs identified 14/20 (70%), the remaining 6 were seen on CT imaging. All flecks were appreciated on CT. Mean fleck size was 3420mm³ (range 2-19,152 mm³). Cohens Kappa for coronal, axial and sagittal measurements demonstrated statistically significant (p< 0.001) interobserver agreement (0.721, 0.764, 0.706 respectively). Use of the Vitrea software to perform volumetric analysis demonstrated a fleck size < 100 - 21,000mm³, with significant interobserver agreement (k=0.688, p< 0.01).

Conclusions: Our results demonstrate that the fleck sign is pathognomonic of PTD. The presence of a large fragment, as opposed to a "fleck", would direct the surgeon to have to repair ORIF of the distal fibula and anatomical restoration of the ankle joint in managing these injuries.

P4

Experience from a dedicated physiotherapist led Achilles rupture service

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Introduction: Conservative management is preferred for the majority of acute Achilles tendon ruptures. Implementing specific treatment regimes is difficult in traditional fracture clinic settings. We established a dedicated service with the key objective of improving patient care.

Methods: Eligible patients were treated in dedicated clinics led by a specialist physiotherapist. Functional VACOPed orthoses (weight-bearing) regimes were initiated from day 1 (all patients). Movements were permitted within the boot from 4 weeks, with a total treatment time of 8 weeks followed by accelerated rehabilitation. Six months after treatment ATRS and FOAS scores, calf muscle girth, heel raise height, heel raise repetitions and satisfaction scores were collected for all patients. Conversion to surgery, re-rupture and DVT rates was recorded.

Results: Between January 2014 and November 2015, 245 patients were treated, 164 having completed 6 months follow-up. There were 134 men (81.2%). Mean age was 51 years (26-86). Mean interval between injury and treatment was 6 days (0-33). Mean ATRS score 6 months following treatment was 69 (SD = 21), which compared to the Swansea Morrision Achilles Rupture Treatment programme (mean=67.8; t= 0.96; p= 0.83). Mean 6 month FOAS score was 81 (48-100). Difference in mean calf girth was 1.18cm (t=7.89; df=40; p< 0.001). Mean heel raise height was 6.8 vs. 10.6cm on the contra-lateral side (t=10.34; df=39; p< 0.001), and mean heel raise repetitions were 13.1 vs. 14.5 (t=2.44; df=40; p=0.02). Three cases were converted to surgery due to failure to heal (3/164; 0.02%). There was 1 case of re-rupture (1/245; 0.004%), and 9 DVTs (9/245; 0.04%) diagnosed during treatment. Overall patient satisfaction scores were 93.5%.

Discussion: A dedicated service for the treatment of acute Achilles tendon ruptures using a functional orthoses regime provides excellent outcomes. Early physiotherapist involvement enhances continuity of care that is not seen in standard fracture clinic management.

P5

Scarf osteotomy or Lapidus procedure in the treatment of severe Hallux valgus. Does the patient have a choice?

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Background: There are a variety of accepted surgical techniques to treat severe Hallux Valgus. This study looked at separate case series between two surgeons preferring different techniques. The correction of hallux valgus angle (HVA), intermetatarsal angle (IMA) and scores of the validate Manchester-Oxford foot questionnaire (MOxFAQ) were compared between the scarf osteotomy (Group A) and the Lapidus procedure (Group B).

Methods: A retrospective cohort study was conducted between September 2013 and August 2015. Patients were identified through the hospital database who had a Scarf osteotomy (n=21) and Lapidus procedure (n=17). We defined severe HV as having HVA >40° and IMA >17°. Only patients meeting this criteria were included. In Group A the surgeon adopted a more extreme osteotomy by shifting the first metatarsal head by greater than the 50% of its width. In Group B the method of fixation was with a medially placed plate plus an additional compression screw. Post-operative radiological measurements were taken six weeks after surgery. MOxFAQ scores were collected prior and at six months after surgery.

Results: The mean correction for HVA in Groups A and B were 29.68° (25.94°-33.42°) and 29.78° (25.12°-34.43°) respectively. For IMA the values were 10.38° (8.63°-12.13°) and 11.25° (9.91°-12.59°). There was no significant difference in HVA (p=0.98, CI=-6.20-6.01) or IMA (p=0.46, CI=-3.24-1.49) correction between the groups. There was an overall improvement in MOxFAQ scores six months after surgery for both groups and the difference between them was not significant (p=0.08).

Conclusion: The post-operative correction of HVA and IMA was similar between the two surgical techniques. At six months after surgery both groups reported an improvement in symptoms based the MOxFAQ scores which was no different between the two groups. Our study showed that performing a more extreme scarf osteotomy can produce similar results to the Lapidus procedure in correction of severe HV.

P6

Which factors influence the decision to perform computed tomography for primary ankle fractures?

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Background: Plain radiographs can underestimate and misrepresent the morphology and severity of primary ankle fractures, whilst the role of CT scanning in the investigation of ankle fractures is poorly defined. The study aimed to identify clinical factors and features of ankle fractures presenting to our unit resulting in investigation with a CT scan.

Methods: A retrospective analysis of primary ankle fractures presenting to a University Teaching Hospital between January 2012 and December 2014 was performed. Following retrieval of demographic and injury data through case notes, the association of high mechanism of injury, ankle joint dislocation on admission, lateral malleolar fracture configuration, and presence of a posterior malleolar fracture with a decision to CT scan was examined. Statistical analysis was performed using chi-square tests.

Results: 366 cases were identified of which 104 received a CT scan. Of patients receiving a CT scan 27 (26%) had a high mechanism of injury (P< 0.05), and 81 (78%) were dislocated on admission (P< 0.05), compared to 41 (16%) and 105 (40%) in patients who did not. Lateral malleolar fracture pattern had no correlation with decision to perform CT. Patients who had a posterior malleolar fracture were likely to receive a CT scan (P< 0.05) versus those without. Overall 67 (74%) of those with a tri-malleolar fracture investigated.

Conclusions: In comparison to existing literature our centre was more proactive in performing CT for malleolar ankle fractures. The presence of a posterior malleolar fracture was strongly associated with decision to perform a CT. High mechanism of injury and ankle joint dislocation were also associated with further CT investigation.

Implications: This study provides an insight into the injury and fracture patterns which can influence a clinician's decision to perform a CT scan in primary ankle fractures.

P7

The role of the virtual fracture clinic in the management of foot and ankle fractures: a review of patient outcomes and satisfaction

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Background: Most patients presenting to the emergency department with foot and ankle injuries can be managed as outpatients. Virtual fracture clinics (VFC) are becoming increasingly popular and help reduce the workload on outpatient clinics. Our study aimed to assess patient outcomes and satisfaction after discharge from a virtual fracture clinic without a face-to-face follow up.

Patients and methods: 200 patients with foot and ankle injuries referred to the virtual fracture clinic over a period of 4 months from October 2015 to January 2016 were reviewed. Data regarding the number of subsequent clinic appointments was collected for both patients discharged from the VFC and those that were referred for follow up. Radiographs for both these groups of patients were reviewed. A telephone survey was conducted on 33 patients to assess their satisfaction.

Results: 82 (41%) patients were discharged from the virtual fracture clinic without follow up. Of these, 4 (4.87%) patients needed to return to the clinic for further appointments and 6 (7.32%) required repeat imaging. Out of the 33 patients surveyed 94% rated the service as good or excellent and 97% said they would be likely or extremely likely to recommend the service to a family member or friend.

Conclusions: The virtual fracture clinic in our institution is safe and effective with high patient satisfaction. Discharged patients have good outcomes with a very low percentage returning to clinic for further review or needing subsequent x-rays. VFC s will help bring down costs and improve the efficiency of our fracture clinics without compromising quality of care and maintaining high patient satisfaction rates.

P8

Identification of the medial column line collapse variation is crucial in flat foot management

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Introduction: It is clear that injury to both dynamic and static structures in the foot are responsible for acquired pes planus deformity. The aim of this study was identify the anatomical location of the midfoot break in symptomatic pes planus deformity, and its relationship with other pes planus radiographic foot measurements.

Methods: We completed radiographic evaluation of 75 feet diagnosed with symptomatic pes planus. The break in the medial column line (Meary's line) was measured on the lateral radiograph at the intersection of the anatomical axis of the talus and 1st metatarsal. Pes planus measurements were performed on each the weight-bearing AP and lateral radiographs, including talonavicular coverage angle, talar 1&2 metatarsal angle, talar uncoverage, talocalcaneal angle, Meary's angle, line break, calcaneal and talar inclination, talocalcaneal angle, C1MT, tarsal joints angles and distances. Due to Gaussian distribution, unpaired t-test and ANOVA tests were used.

Results: The medial column line collapse was at talonavicular in 77.3% naviculocuneiform in 20%, and cuneiformmetatarsal in 2.6%. The line angle severity was proportional to the talonavicular coverage angle and talar uncoverage (p 0.001, R2 0.4915 and P 0.003, R2 0.223). On comparison of the 3 line-break groups, the talocalcaneal angle was significantly higher when the line break was at talonavicular joint (P 0.001) although Meary's angle was not significantly more severe.

Conclusion: The apex of the medial column collapse occurs not only at the talonavicular joint but also distal to the spring ligament and tibialis posterior insertion. Foot abduction increases with the increase in the line collapse regardless of the breaking point. Talus flexion is worse if the arch collapse is at the talonavicular joint, suggesting incompetency of the spring ligament. Assessing the apex of deformity is essential to decide the correct operative strategy.

P9

Does ankle arthritis cause more disability than other pathologies of the foot and ankle?

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Introduction: Ankle arthritis is been extensively studied for disease severity and outcomes of surgery. It is a condition resulting in significant pain and disability. There is a lack of literature on pain and disability in ankle arthritis compared to other pathologies of the foot and ankle. We aimed to study the level of disability caused due to ankle arthritis and how it compares to other commonly reported conditions of the foot and ankle.

Methods: We collected PROMs using MOX-FQ questionnaire from newly diagnosed patients under the care of 1 consultant from May 2014 to July 2014. Data was collected for 13 commonly reported conditions for forefoot (3), midfoot (3), hindfoot (5) and ankle arthritis. We grouped patients as Group A, B, C and D for forefoot, midfoot, hindfoot disorders and ankle arthritis respectively. The responses to each of the 3 domains of MOX-FQ were analysed using statistical tests for analysis of variance.

Results: 136 patients took part in this study. This included 52 patients with ankle arthritis, 56 patients with forefoot conditions; 22 patients with midfoot and 31 patients with hindfoot disorders. Group D patients reported highest scores for difficulty with walking/standing ($p=0.008$) and similar levels of pain to other foot conditions ($p>0.05$). For Social interaction domain, all 4 groups reported similar level of restrictions in social activity, ($p=0.679$).

Conclusion: Patients with ankle arthritis experienced higher levels of difficulty with walking/standing and similar levels of pain and restriction with social activities to patients with other foot and ankle pathologies. Further research is required to explore general health and functional limitations in lines with ICF for ankle arthritis.

(We aim to present a breakdown of domains by each foot condition in comparison to ankle arthritis in the event of this abstract being accepted)

Evidence: Level III

P10

Access to talar dome surface with different ankle approaches

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Introduction: Access to the talar dome for treatment of osteochondral lesions (OCLs) can be achieved by different approaches to the ankle joint. Osteotomies are used in cases where the area to treat is not fully accessible. The recent description of an anatomical nine-grid scheme of the talus has proven useful to localize OCLs but no studies have demonstrated what approaches are indicated to access each of these zones.

Methods: Four standard soft tissue ankle approaches were performed simultaneously in ten fresh-frozen cadavers (anterolateral - AL, anteromedial - AM, posterolateral - PL, posteromedial - PM). The area of the talus that was accessible with an instrument perpendicular to the surface was documented for each of the approaches. Using ImageJ software the surface area exposed with each approach was calculated. The talar dome was divided in a nine-grid scheme and exposure to each zone was documented.

Results: The AL, AM, PL and PM approaches allow for exposure of 24%, 25%, 5%, 7% of the talar dome respectively. The AL gives access to zones 3 (completely) and 2, 5, 6 (partially); the AM to zones 1 (completely) and 2, 4, 5 (partially); the PL to zones 9 and 8 (partially); and the PM to zones 7 and 8 (partially).

Conclusions: A large area of the talar dome cannot be easily accessed with the use of standard soft tissue approaches (39%). Minimal or no access is achieved for grid zones 4, 5, 6 and 8. Extended exposure can be achieved with the use of osteotomies, section of the ATFL or through modified approaches. Careful preoperative planning is necessary when attempting techniques that require full exposure of a particular area of the talar dome like OATs, ACI, or MACI.

P11

Randomised control trial of the effectiveness of metatarsal block versus ultrasound-guided ankle block in osseous first ray surgery

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Introduction: Osseous first ray surgery is a common day case procedure. Patients are often given regional blocks as an adjunct to general anaesthesia. We sought to find if there is a difference between ultrasound guided ankle block and metatarsal block in this group of patients, in providing effective post-operative analgesia.

Methods: After ethical approval was granted and power analysis performed, 25 patients were recruited into each arm of the study. These patients were having either an osteotomy or arthrodesis. All patients had standardised general anaesthesia and received 20mls of 0.5% chirocaine for the blockade. The cohort having the ankle block had infiltration under ultrasound guidance in the anaesthetic room; and the cohort receiving the metatarsal block had infiltration at the end of the procedure. The timings of both the anaesthesia and the operation were recorded for each patient. Patients scored their pain level at 2, 6 and 24 hours. The amount of post-operative analgesia used in the first 24 hours was also recorded by the research nurse. All patients were discharged home with a standardised prescription of analgesia.

Results: Analysis of the pain scores showed that there was no difference between the two blocks at any measured time period. Nor was there a difference in the analgesic requirement in the first 24 hours. There was, however, a difference in the time taken for the whole procedure: with the ankle block taking an average of ten minutes more.

Conclusion: We conclude that metatarsal blocks are as effective as ultrasound guided ankle blocks in providing analgesia after osseous first ray surgery with a smaller potential for morbidity. Metatarsal blocks may also be a more efficient use of time.

P12

Investigating how the degree of radiological correction corresponds to patient reported outcomes in scarf osteotomy

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Background: Patient-reported outcome measures (PROMs) are important in modern healthcare systems. Previous studies on PROMs in hallux-valgus (HV) surgery show links with age/gender. We investigated the relationship between pre-/post-op radiological appearance and PROMs in hallux-valgus surgery.

Patients and methods: Prospective study of 40 patients with hallux-valgus undergoing scarf-osteotomy. Data collection performed using EQ-5D VAS, EQ-5D Health-Index, and the Manchester-Oxford Foot Questionnaire (MOxFAQ). All radiological measurements (HVA- hallux-valgus angle and IMA- Intermetatarsal angle) calculated by two independent blinded foot and ankle surgeons on PACS. Comparative analysis done between degree of radiological correction and pre-/post-op PROMs. Statistical tests carried out using IBM-SPSS Statistics (V19).

Results: Patient demographics- 40 patients included in the study with female predominance, equal side distribution and no bilateral procedures. Average age at time of surgery- 60.7 years (Range 29-88). Mean pre-op MOxFAQ=50.6 (10.0-98.7), mean post-op MOxFAQ=23.6 (0-91.3) and mean improvement in MOxFAQ=27.1 (-81.3-73.3). All MOxFAQ scores showed statistically significant improvement post-operatively. Greatest improvement in over 65s and female subgroups. $p < 0.05$.

For HVA- average pre-op angle=34.6° (13.2°-57.0), average post-op angle=14.9° (2.0-39.1). Mean HVA correction angle= 20.0 (3.2- 47.5). There was statistically significant correlation between pre-op/post-op HVA measurements and pre-op/post-op PROMS values respectively ($p < 0.05$). There was direct correlation between HVA correction and improvement in PROMS.

For IMT, average Pre-op angle=17.3° (10.4-27.6), average Post-op angle=12.1° (6.0-21.1). Mean IMA Correction=5.29 (0.2-15.8). There was statistically significant correlation between pre-op/post-op IMA measurements and pre-op/post-op PROMS values respectively ($p < 0.05$). There was direct correlation between IMA correction and improvement in PROMS.

Conclusion: Hallux-valgus surgery is an effective procedure with high PROMS. Maximal improvement is seen in over 65s and female subgroups. There is a positive correlation between PROMS and degree of deformity. As HVA/IMA increase, PROMS decrease. As HVA and IMA correction increases, PROMS improves. Better surgical correction leads to better PROMS.

P13

Surgical fixation of type 2 navicular fractures - evolution of a technique

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Fractures of the Navicular are both rare and potentially devastating injuries. The type 2 or medial displacement fracture pattern is particularly associated with bony comminution. Various techniques for surgical fixation have been proposed in an attempt to restore and maintain reduction with variable results.

The senior surgeon has developed a reduction manoeuvre which greatly simplifies the process of reduction and fixation. We report on six patients with a Type 2 injury managed in this way and the one-year follow-up.

All patients underwent dual anteromedial and anterolateral incisions. The key to the technique is the constant large medial fragment. Upon relocation and temporary fixation of this fragment the medial column length is restored. This allows excellent access to the comminuted lateral half of the navicular for appropriate reduction and fixation. All cases were held with a navicular specific plate and an additional bridge-plate from the talus to the cuneiforms. The bridge-plate was removed at approximately nine months.

All six patients were successfully treated with the technique. The mean age was 22 years. Five patients sustained the injury in high-energy motorcycle or road traffic accidents. Post operatively all remained non-weight bearing for 6-8 weeks then protected weight bearing in a walker boot for a further 4-6 weeks. At six months post-surgery all patients had no or minimal symptoms and all had returned to their previous occupation. Twelve month radiographic follow up confirmed maintenance of the reduction and no loss of either the medial arch or medial column length.

P14

Hindfoot nail for acute management of the elderly ankle and distal tibia fragility fractures - a safe and effective treatment

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Introduction: Fragility ankle fractures in the elderly are usually of complex pattern, intra-articular, unstable and the surrounding soft tissues are compromised. In this study, we looked at our cohort of the ankle fragility fractures that were managed acutely with a hindfoot nail to assess the outcomes and efficacy of this method of fixation.

Methods: We retrospectively reviewed the surgical logbooks of ankle fracture fixation performed in our department from February 2015- July 2016. Inclusion criteria were elderly patients who underwent a hindfoot nail for an ankle or distal tibia metaphyseal fracture, with poor soft tissue condition or open fractures, poor pre-injury mobility and multiple co-morbidities. Outcomes were analysed with emphasis on post-operative wound complications, post-operative infection, peri-prosthetic fractures, fracture healing and mal-union, metal ware failure and functional outcomes.

Results: We identified 18 patients who matched the inclusion criteria, 5 men and 13 women. Age ranged between 65 and 93. Follow up 2 to 17 months. Five patients had open ankle fractures, of which one was complicated with wound infection post-operatively. 17 patients had a VALOR® hindfoot nail implant. One was managed with a short femoral nail, as a hindfoot nail, due to the limitation of available VALOR® nail lengths. All patients returned to pre-injury functional status within 3 weeks. One patient had malunion. One patient died 6 months post-operatively due to cardiac disease. No patients had peri-prosthetic fractures or metal-ware failure.

Conclusion: Our cohort of patients had good short term outcomes with early return to pre-injury functional status, reducing the risk of prolonged hospitalisation and complications. Malunion and non-union, stress proximal fractures and late infection are all long-term potential risks. We conclude that hindfoot nail is a safe and effective method of treatment of complex ankle and distal tibia metaphyseal fractures in this age group.

P15

The role of pre-operative computed tomography in operative planning for ankle fractures involving the posterior malleolus

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Background: CT scans are increasing being utilised in preoperative planning to delineate the exact morphology of posterior malleolar fractures. We examined the influence of CT scans on patient positioning, surgical approach and method of fixation in posterior malleolar ankle fractures.

Methods: A retrospective analysis of 121 primary ankle fractures involving the posterior malleolus presenting to a University Teaching Hospital were identified between January 2012 and December 2014. Fracture morphology was assessed with the Haraguchi classification for all cases undergoing CT. Differences in patient positioning, surgical approach and method of fixation were compared between posterolateral oblique and medial extension type posterior malleolar fractures. Statistical analysis was performed with the chi-square test.

Results: 88 ankle fractures involving the posterior malleolus received a CT scan. 51 (58%) had a type I: posterolateral oblique injury, 32 (36%) a type II: medial extension injury, and 5 (6%) a type III: shell type injury. A lateral or sloppy lateral position was favoured in 21 of the 36 (58%) posterolateral oblique fractures managed surgically, compared to 11 of the 31 (35%) medial extension fractures ($P < 0.05$). Posterolateral oblique injuries were treated exclusively through posterolateral approaches whilst 16 (52%) medial extension injuries were approached through a posteromedial incision ($P < 0.05$). Medial extension fractures with a 'two part' appearance readily required fixation with a posteromedial plate (48%) which was not clinically necessary in the posterolateral group ($P < 0.05$). Shell type injuries were managed conservatively.

Conclusions: Pre-operative CT scans can provide essential clinical information which may influence the patient position, surgical approach and method of fixation in patients with a posterior malleolar fractures, in particular the presence of a medial extension injury.

Implications: We advocate CT scans for all posterior malleolar ankle fractures to distinguish between posterolateral oblique and posteromedial injuries to aid pre-operative surgical planning.

P16

Adult flat foot reconstruction using arthroereisis

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Introduction: The use of an arthroereisis screw is well described in the paediatric population for the correction of flexible flat feet. In this study, we aimed to evaluate the functional and radiographic results when a subtalar arthroereisis screw was used to augment reconstruction in adult patients with Posterior Tibialis Tendon insufficiency (PTTI).

Materials and methods: We included 23 feet with stage 2 PTTI that underwent flexor digitorum longus transfer, reefing of the spring ligament, translational medialising calcanaeal osteotomy and augmentation with arthroereisis screw (Kalix, Integra). In all cases the screw was removed 6 months later. Functional and radiographic values were assessed pre- and post-operatively at a minimum of 1 year follow-up.

Results: The mean age of patients at operation was 58 years. The calcaneal pitch was raised, Meary's angle decreased, the medial cuneiform height increased and the talonavicular coverage angle improved post-operatively compared to pre-operative measurements ($p < 0.05$). The Manchester Oxford Foot Questionnaire, EQ-5D and VAS scores for pain improved in all cases post-operatively when compared to pre-operatively ($p < 0.05$).

Conclusion: We conclude that the use of an arthroereisis screw is a promising adjunct to conventional reconstruction in adult PTTI that protects the corrective surgery during the initial healing time of the soft tissues. Excellent radiological and functional results were obtained in our series.

P17

Failed hindfoot fusion with intra-medullary nails - outcomes following limb salvage with circular frames for infected nonunions

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Introduction: Ankle and hindfoot salvage following infected nonunions is challenging. Revision with a two-stage procedure using internal stabilisation risks retention of bacteria on any implanted metalwork. A circular frame minimises this risk, and we present our experience at a tertiary referral limb reconstruction unit.

Methods: A prospective database was interrogated from 2009 to 2016 to identify patients who presented with infected hindfoot nonunions following hindfoot nails. One patient elected for a primary amputation, and the remainder were treated with open debridement, sampling, dead space management, soft tissue cover, and application of a circular frame using the Ilizarov technique. Outcome scores were collected using the Olerud and Molander score and EQ5D-5L.

Results: 9 patients were treated over a 7-year period. Demographics were 7 male: 2 female, average age 58 years (range 46-73 years). Follow up to latest outcome scorings was 47 months (Range 18-76 months), with one patient deceased. One patient required a local flap, and the rest were primarily closed. All patients achieved fusion across the prepared joints. Olerud and Molander score averaged 52.9 (Range 5-80), EQ5D-5L VAS 59.3 (5-95). Complications included 1 valgus malunion, 1 chronic pain syndrome, and 1 patient who eventually required an amputation secondary to vascular compromise.

Discussion: Revision fixation with a circular frame produced fusion in all cases and is useful for infective cases when internal fixation methods are limited. However clinical outcomes were varied, with chronic pain and vascular compromise leading to a poor result for now, with one considering amputation and the other needing stump revision. With acceptable results in the medium term, salvage with a circular frame should be considered for complex infected hindfoot revision fusion.

P18

The use of tranexamic acid in foot and ankle surgery

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The role of tranexamic acid in foot and ankle surgery has yet to be established. Its use in elective hip and knee arthroplasty and trauma is well documented. The safety and efficacy of the drug in these applications has been proven thanks to large scale high quality feasibility studies. We present a study demonstrating the safe use of tranexamic acid in setting of foot and ankle surgery.

Methods: Over an 18 month period all patients undergoing major foot and ankle reconstructions received an intraoperative dose of tranexamic acid (1g IV infused over 2 minutes). All patients deemed at significant risk of developing a haematoma or wound dehiscence received the drug. These cases were a mix reflected a tertiary UK foot and ankle practice. Case notes were interrogated for patient demographics, thrombosis history, anticoagulation history and wound related complications.

Results: 81 patients were identified as having received 1 g of tranexamic acid intraoperatively. Of these patients the primary pathology in 55% was degenerative (n= 45), 2.5% Diabetes related reconstruction (n=3), 17% were traumatic (n=14) and 23% for deformity (n=19). Five patients (6%) experienced a wound complication, all of which were minor. No patient required a return to theatre and no clinically significant post-operative thrombo-occlusive events were recorded.

Discussion: The use role of tranexamic acid is not yet routine during surgery about the foot and ankle. Its role has been clearly established in trauma and large joint arthroplasty. Similar beneficial effects can be seen in this series of trauma and elective foot and ankle patients. No adverse events occurred.

Conclusion: Tranexamic acid can be safely administered to patients undergoing the full spectrum foot and ankle surgery with minimal risk of adverse events. Further work is required to determine a positive relationship on wound healing complications.

P19

Medial soft-tissue release for a lateralizing calcaneal osteotomy - a cadaveric study

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Introduction: A lateralizing calcaneal osteotomy (LCO) for pes cavus is generally regarded to be harder to shift than a medializing calcaneal osteotomy for pes planus. LCO can also cause a significant reduction of tarsal tunnel volume and some surgeons recommend releasing the tarsal tunnel routinely.

Aim: Determine all the structures which restrain a lateral shift in lateralising calcaneal osteotomies using a cadaveric study.

Method: Permissions were obtained to dissect 8 embalmed below-knee cadavers. LCO was performed on 4 cadavers using a standard lateral approach, and the lateral shift was measured before and after the release of tarsal tunnel. However, our approach changed due to our findings after the first 4 cadavers.

Results: We found no significant change in lateral shift before and after tarsal tunnel release. We performed further dissection around the osteotomy and found the Abductor hallucis muscle to be the main restraint to a lateral shift. We changed the method in the subsequent 4 cadavers to LCO with abductor hallucis fascia and plantar fascia release, instead of tarsal tunnel release. By releasing the fascia over Abductor hallucis muscle as well as the plantar fascia, it was possible to increase the lateral shift in LCO by at least another 5mm on average.

Discussion: Limitation of lateral shift with LCO is generally considered to be due to tight soft-tissues in pes cavus, and several variations of LCO are practiced to overcome this limitation. However, no attempt has been made so far to identify any particular structure contributing to the limitation of lateral shift.

Conclusion: Our study suggests that the Abductor hallucis muscle the main structure limiting lateral shift in LCO, and release of the fascia over the abductor hallucis as well as the plantar fascia should be an essential part of the lateralizing calcaneal osteotomy.

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FH Ortho Ltd. is the UK subsidiary of GROUP FH ORTHO. GROUP FH ORTHO is an orthopaedic implant manufacturer based in Mulhouse France which provides a range of arthroplasty and ligament solutions, including:
 Foot : BePod foot screws and burrs / Calcanail for calcaneal fracture and subtalar arthrodesis / Tylos for ankle fusion
 Ligament : Tenolig Achilles tendon rupture repair device / TLS for ACL and PCL reconstruction
 Knee : FHK primary knee replacement system
 Hip : Hip 'n Go primary hip replacement range
 Shoulder : Arrow total shoulder replacement system / Telegraph nail for humeral fractures
 For more information : <http://www.fhorthopedics.com>



Freelance Surgical is dedicated to providing high quality products without the premium often associated. The company has been the sole UK distributor for VBM Germany for almost 25 years, and has established them as one of the leading surgical tourniquet brands in the UK. For medical ingenuity at sensible prices, visit Freelance Surgical on stand 6.



Since 2008, Hospital Innovations has been supplying a growing range of specialist products for use in orthopaedic and corrective surgery. We are extremely pleased to be exhibiting at BOFAS to present our range of products for foot and ankle. Our products range from single step treatments for cartilage defects, allograft bone blocks, wound care treatments and extracellular matrix scaffolds for rotator cuff tendon repair.



Implants International and Xtremity Solutions are delighted to offer our surgeons a one-stop-shop for all their arthroplasty, deformity correction and trauma requirements within the foot & ankle sector. These products are designed, developed and manufactured in the UK.



Int2Med, provide innovative products and great customer service in the Sports Medicine (Chondrotissue for Proven cartilage repair, Sports Allograft and Meniscus) , Deformity Correction (Smart Correction – the easiest to use hexapod frame and software full stop) and Small Bone Surgery (Step screws and staples, Bioretec ActivaNails – 4th generation resorbable PLGA copolymer pins and screws).



Integra LifeSciences, a world leader in medical technology, is dedicated to limiting uncertainty for surgeons, so they can concentrate on providing the best patient care. Integra offers innovative solutions in orthopedic extremity surgery, neurosurgery, and reconstructive and general surgery.



Lavender Medical specialise in supplying innovative osteosynthesis products to the orthopaedic community with a particular emphasis on the extremities market. The company represents a number of 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 we work with.



MatOrtho® is a UK manufacturer of internationally-recognised orthopaedic implant devices which includes the BOX® Total Ankle Replacement.

MatOrtho® is a global trendsetter in the field of orthopaedic implant devices, totally focused on improving the quality of life of all patients who receive one of its devices. The passion, knowledge and innovation which drives MatOrtho® is delivered and applied in a dynamic and ethical way.

We look forward to welcoming you to Stand 5 to demonstrate the BOX® and share its excellent survivorship and functional data results.



Medartis is one of the leading manufacturers of medical devices for orthopaedic extremity trauma and cranio-maxillofacial surgery. Medartis is committed to providing surgeons and operating theatre personnel with innovative titanium implants, instruments and a comprehensive service provision that represent advances in bone fixation and osteosynthesis and thus, patient's quality of life.

However, ambitious objectives can ultimately only be realized through the personal commitment and outstanding dedication of a highly qualified and motivated team.

For more information, please contact Mai Widdowson in Medartis Customer Services on mai.widdowson@medartis.com or 01924 476699



OPED UK was registered in 2011 bringing the Oped philosophy to the UK, products are used in many clinical areas - Orthopaedics, Trauma, Diabetes and Vascular. We also sell a range of products to help the patient during the treatment and recovery phases. Oped keeps you going.



Orthofix offers innovative and minimally invasive solutions for surgeons to help improve the quality of life for our patients. We boast a wide-ranging internal and external fixation portfolio, which treat numerous indications of the foot and ankle from initial trauma to reconstruction and salvage.



OrthoLink (Scotland) Ltd

OrthoLink is a young, dynamic distributor which specialises in lower extremity implants. Our portfolio includes screws, plates, compression staples and instrument kits in addition to a range of foot and ankle splints. Come chat to our experienced and enthusiastic staff to see how we can be "the link to all your orthopaedic needs".



Established in 2001 OrthoSolutions has evolved into a leading UK Foot and Ankle company. We believe that specialist customers deserve a specialist service and all at OrthoSolutions are driven by a desire to develop quality products that meet the specific needs of the Foot and Ankle customers, whom we serve.



Smith & Nephew is a global medical technology business dedicated to helping improve people's lives. We have leadership positions in Orthopaedic Reconstruction, Advanced Wound Management, Sports Medicine and Trauma

- Orthopaedics Reconstruction - joint replacement systems for knees, hips and shoulders
- Advanced Wound Management - wound care treatment and prevention products used to treat hard-to-heal wounds
- Sports Medicine - minimally invasive surgery of the joint
- Trauma - products that help repair broken bones



Stryker is one of the world's leading medical technology companies with the most broadly based range of products in orthopaedics and a significant presence in other medical specialties. Stryker works with medical professionals to help people lead more active and more satisfying lives. The Company's products include implants used in upper and lower limb surgery, extremities, trauma, craniomaxillofacial and spinal surgeries; biologics, surgical, neurologic, ENT, and interventional pain equipment; endoscopy and surgical navigation. Stryker offers a unique range of solutions and continues to improve this offering via meaningful innovation.



TRB Chemedica specialise in biosynthetic Sodium Hyaluronate products: OSTENIL®, OSTENIL® MINI, and OSTENIL® PLUS are intra-articular injectable preparations of Sodium Hyaluronate for the treatment of degenerative joint disease. OSTENIL® TENDON, a visco-elastic solution for peritendinous or intrasheath injection, is designed to restore tendon function by reducing pain and enhancing tendon gliding.



Established in the UK for over thirty years, Vertec Scientific is a leading distributor of world class imaging and radiotherapy systems and consumables. Our portfolio includes Hologic DXA and the Fluoroscan range of intraoperative x-ray mini c-arms, including the all digital Insight, now the best seller of its type in Britain.



Venn Healthcare have partnered with Storz Medical AG to supply the most advanced and progressive radial and focused shockwave therapy equipment for orthopedic indications. Not only do we supply class leading modular ESWT equipment and support, our sales and marketing team have over 20 years of combined experience in assisting clinics to develop successful ESWT clinics.



Wright Medical is a specialty orthopaedic company that provides extremity and biologic solutions which alleviate pain and restores lifestyles. We are a recognised leader of surgical solutions for foot and ankle procedures in one of the fastest growing segments in medical technology. Wright products are available in over 60 countries.



Founded in 1927 and headquartered in Warsaw, Indiana, USA, Zimmer Biomet is a global leader in musculoskeletal healthcare. We design, manufacture and market orthopaedic reconstructive products; sports medicine, biologics, extremities and trauma products; spine, bone healing, craniomaxillofacial and thoracic products; dental implants; and related surgical products. We collaborate with healthcare professionals around the globe to advance the pace of innovation. Our products and solutions help treat patients suffering from disorders of, or injuries to, bones, joints or supporting soft tissues. Together with healthcare professionals, we help millions of people live better lives.