
BOFAS
British Orthopaedic Foot & Ankle Society
EDINBURGH 2018
ANNUAL SCIENTIFIC MEETING
7-9 NOVEMBER 2018 • EDINBURGH EICC

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DEAR DELEGATE

Welcome to Edinburgh. This meeting is a significant break with tradition and an experiment at the same time. The scientific meeting has never before in its 40 + years been held quite so far from the Presidents base, but having been so recently in Bristol & Sheffield (which between them account for my home over the last 32 years) it seemed a change was in order. I'm pleased that having now come to Scotland we have visited all of the home countries at least once in the last 7 years. I hope you approve. Edinburgh has all the history and attributes of a popular, vibrant capital city and it should keep us well entertained for the three days.

Our venue at the EICC is, I hope, ideal for the meeting. There will be an excellent large trade exhibition immediately alongside the main meeting room which I would warmly encourage you to attend. As ever we are indebted to the trade who make this meeting possible at such reasonable costs. We also have excellent additional facilities within the EICC and nearby. Many hotels are within easy walking distance as are the main attractions of the city itself.

The educational content of the meeting I hope will appeal to all, much of it was suggested to me by members of the society at various times over the last few years as topics of interest. We have a great faculty of speakers including several world leaders in foot and ankle surgery. They should provide us with great insight and entertainment both on and off the podium.

I have retained the overall layout of the meeting that so successfully moved the AGM to lunchtime on Thursday and I hope that as many as possible feel able to attend and contribute to the society. It is imperative that we hear the voice of the general membership. The society is now over 500 members but we must strive to maintain the inclusive family nature of the Foot and Ankle Society. Having spent 6 years as treasurer I am certain I know most of your names but I certainly do not know all of the faces so please introduce yourselves to each other, make contacts and network. This is at least as important as the educational content of the meeting itself.

To assist with this we have a drinks reception in the EICC after close of play on Wednesday following which many of you will enjoy the pleasures of Edinburgh either with friends or as the guest of many of the trade exhibitors. On Thursday our traditional 'Gala' dinner will be held in the magnificent surroundings of the National Museum of Scotland. This is a 10-15 minute walk away from the EICC but buses will leave from outside the Doubletree Hilton hotel. The venue is truly beautiful and we have some spectacular and traditional entertainment planned.

BOFAS in many ways continues to innovate and this year the council and sub-committees have been striving hard to fulfill the aims of the society. At the AGM you will hear about all of the numerous activities that have been undertaken on your behalf and I certainly believe that BOFAS is at the forefront of supporting its members, trainees, and AHPs both at home and overseas in education, research and governance. I am extremely grateful to all of the committee members who have made my life so straightforward over the last year.

On the theme of innovation this meeting will be the first to include a conference app. Hopefully by the time you read this you will already have downloaded and explored the features. The ability to contact members directly through the app and to ask questions to the panel without having to stand at the microphone are two of my favourites but there are many others. Considerable work has gone into this and we would welcome your feedback as well as your tolerance if there are teething troubles.

There are so many people to thank in the organisation of this meeting. Choosing to do it 350 miles from home caused a few issues but everyone involved has been so helpful and accommodative. I am grateful to the venues, hotels, audiovisual team, caterers and particularly to all the colleagues who have coordinated sessions for me. I would also like to thank my wife Patricia for taking care of the partners attending the meeting. Of course the whole thing would not have come together so well without Jo Millard, who continues to offer unrivalled assistance to the society above and beyond her paid role. My heartfelt thanks to her, both as a colleague and friend of many years.

I look forward to meeting, learning and socialising with as many of you as possible in the next 3 days. Please enjoy yourselves.

Best Wishes

Steve Hepple

BOFAS
British Orthopaedic Foot & Ankle Society

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CONTENTS

GENERAL INFORMATION

Registration & Exhibition Timings

Day	Registration Open	Lunch	Meeting Close
Wednesday 7th Nov	08:00	13:00 - 13:45	18:00
Thursday 8th Nov	08:00	12:00 - 12:45	17:30
Friday 9th Nov	08:00	10:45	13:00

On registration you will receive a badge, a programme and a pen. If you opted for a conference bag at the time of registration you will also receive a delegate bag containing inserts from our Gold Sponsors this year.

Gala Dinner Tables

The gala dinner will be held at The National Museum of Scotland. Buses will pick-up from the DoubleTree by Hilton Hotel from 19:00hrs. Buses will leave the NMS from 23:30hrs.

Address: National Museum of Scotland, Chambers Street, Edinburgh EH1 1JF

Dinner tables can be pre-booked from Weds 7th 08:00hrs through until Thur 8th 13:00hrs. If you have not pre-booked your table you are free to choose a table as you arrive. If you are a vegetarian or have a food allergy, there will be a place card for you to collect before you enter the hall for dinner.

Cloakroom

The cloakroom will be open between 08.00hrs – 18.00hrs daily. It is located on -1 floor just at the bottom of the first stairway.

CPD Points

Wednesday 5 points, Thursday 6 points, Friday 3.5 points.
A certificate of attendance is issued by email following the Annual Meeting on completion of the evaluation form, which is emailed as a link to all delegates. The link will close 1 month following the meeting. No evaluation will be available after this time. Copy certificates will only be available up to 6 months following the meeting.

Badge Types

Faculty	Red	Allied Health Professional	Light Blue
BOFAS Full Member	Dark Blue	Trainees & Non members	Light Blue
BOFAS Retired Member	Dark Blue	Exhibitor	Green

Refreshments

Tea and coffee will be served daily in the exhibition areas shown as red blocks on the Exhibition Plan during the morning and afternoon break.

Lunch will be served on Wednesday and Thursday in the exhibition areas shown as red blocks on the Exhibition Plan. Brunch will be served on Friday during the midmorning break due to programme timings.

CITY CENTRE MAP

Train

Visit *http://www.nationalrail.co.uk/stations_destinations/174059.aspx* for further information and routes.

Local Public Transport

Edinburgh has a Tram, which is efficient, low cost, and often quicker than a taxi.
https://edinburghtrams.com

Local Taxis

Edinburgh City Taxis are recommended
https://www.citycabs.co.uk for more details.

Parking

Please follow the link below for parking details in the city.
http://www.edinburgh.gov.uk/info/20276/parking_spaces/282/multi_storey_car_parks

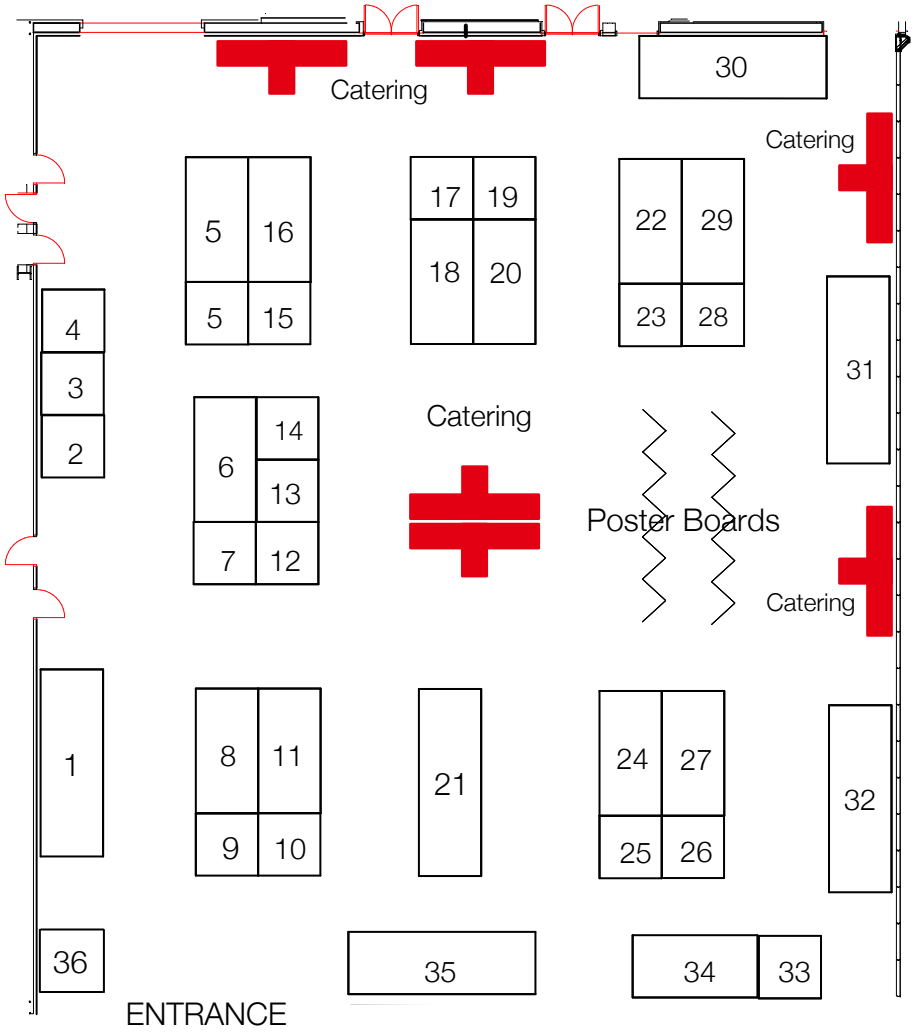
POSTER LOCATIONS

Poster presentations can be found on level -2 in the Exhibition Area.

Exhibition Area

1. Minimally invasive distal metaphyseal metatarsal osteotomy (DMMO) for symptomatic forefoot pathology - Short to medium term outcomes from a retrospective case series
2. New model foot and ankle service pathway - pilot results 2 years
3. MIS distal metatarsal metaphyseal osteotomy in the treatment of metatarsalgia: MOXFQ patient reported outcomes
4. The use of Percutaneous screw fixation without fracture site preparation in the treatment of 5th metatarsal base non-union
5. Evaluating the weight bearing status of stable Weber B ankle fractures
6. Stabilisation of the ankle syndesmosis using the internal brace (Arthrex) - early results
7. Are all Weber A ankle fractures benign?
8. Anatomy of the lateral plantar ligaments of the transverse metatarsal arch: The lateral lisfranc ligament
9. Calcaneal fracture epidemiology and fixation trends in England, 2000 to 2017
10. Clinical and patient reported outcomes following low intensity pulsed ultrasound (Exogen) for established post-traumatic and post-surgical non-union in the foot and ankle
11. Tibiotalar arthrodesis - Is union rate and time to union influenced by preoperative deformity, patient related factors or open/arthroscopic procedure and what do patients percieve?
12. FORFoot: Forefoot offloading shoes vs rigid flat shoes in patients undergoing surgery of the first ray: A randomised controlled trial of clinical and radiological outcomes
13. Early results of Complete Cartilage Regeneration (CCR) technique for Talar Osteo-Chondral defects (OCD)
14. Is operative treatment of delayed Achilles tendon rupture presentation essential? Mid and long-term follow-up of conservatively treated patients
15. Identification of stable supination external rotation ankle fractures - A consensus opinion
16. An investigation of the damage to flexor tendons incurred by different minimally invasive proximal phalangeal closing wedge osteotomy surgical techniques in cadaveric feet
17. A prospective study of 493 Ankle Fractures in a UK trauma unit: What lessons can be learnt?
18. The incidence of gissane angle impingement and accessory anterolateral facet of the talus in adult acquired flat foot: the need for an increased awareness of non-arthritic lateral hindfoot pain
19. Posterior approaches to the ankle - An analysis of 3 approaches for access to the posterior distal tibia
20. Prolotherapy as a treatment choice for ATFL injuries in elite athletes: A case series

EXHIBITION PLAN



Company	Stand Number
Actisound	24
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The Standing CT Company	8
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GOLD SPONSOR WORKSHOPS

WEDNESDAY 7TH NOV
IN THE LENNOX SUITE

ARTHREX
Live Demonstration workshop

Workshop times: 17.45 - 18.45

Arthrex's commitment to dynamic Medical Education will be showcased again at BOFAS 2018 with Live Cadaveric Demonstrations from the MobileLab™. The symposium on Wednesday commences immediately after the educational programme in the main auditorium and will be hosted by Mr Tim Clough (Wrightington). Utilising state of the art Synergy 4K camera systems delegates will observe demonstrations of innovative Arthrex procedures by Mr James Calder (Fortius UK), Mr John McKinley (Edinburgh UK) and special Guest Mr Chris Coetzee (Minneapolis, USA) with liquid refreshments provided throughout the session.

THURSDAY 8TH NOV
IN THE EICC

BIOVATION UK LTD
Cartiva® SCI Wet Lab Workshop introducing NEW SINGLE-USE CARTVA® INSTRUMENTATION

Presented by Chris Blundell & Mark Davies

Workshop Times: 8.30 – 10.00 or 10.30 – 12.00

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Certificate of Attendance given.

BONESUPPORT Symposium
CERAMENT - Concepts and Practice with antibiotic delivery and bone grafting in foot and ankle Surgery

Times: 10:00-11:00 & 11:30-12:30

Speakers include:
Prof Venu Kavarthapu, Consultant Orthopaedic Surgeon
Kings College Hospital NHS Foundation Trust, London
'CERAMENTTM in Complex Infected Diabetic Foot Reconstructions'

Mr Anand Pillai, Speciality Lead Foot and Ankle
Greater Manchester Single Hospital Service
'The Silo Technique for diabetic calcaneal osteomyelitis'
'Adjuvant local antibiotics in complex open fractures'

Please join us to hear these speakers and others. Stop by our stand, number 31, for further information.

STRYKER

The Next Step in Ankle Replacements (open forum)

Chair: Mr Senthil Kumar, Mr Malik Siddique
Guest: Tom Loring (Senior Director, Ankle, Stryker)

Session 1: 10:30am - 11.00am
Session 2: 11:30am - 12.00am

WRIGHT MEDICAL

Complex Primary and Revision Ankle Replacement

Faculty: Mr. Andy Goldberg, Mr. Ian Sharpe
Times: 09:00am – 12:00pm

Wright Medical leads the way with an impressive history of ground-breaking products for the foot and ankle community. This year we are introducing the INVISIONTM Total Ankle Revision System, a new addition to the Wright Medical continuum of Total Ankle Replacement Systems. INVISIONTM was designed with revision surgery in mind. Used as a standalone construct or in conjunction with INBONETM and INFINITYTM components, INVISIONTM adds a level of modularity never seen before in Total Ankle Arthroplasty.

We are pleased to invite you to join our interactive breakout presentations on Thursday 8th November from 9am – 12pm where our invited Faculty Ian Sharpe and Andy Goldberg will be talking through their early case series with INVISIONTM.

We will cover the following topics throughout the 3 hour session:

- Planning for the Complex Case: Preoperative Navigation with PROPHECYTM – Andy Goldberg
- Complex Primary Ankle Replacement with INFINITYTM and INBONETM – Ian Sharpe
- INVISIONTM Revision Ankle Replacement Case Series – Ian Sharpe
- The Ultimate Revision Planning Tool: INVISIONTMPROPHECYTM - Andy Goldberg

FACULTY BIOGRAPHIES

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 Honorary Secretary and is the current BOFAS President Elect.

Simon Barker

Simon Barker is a Children's Orthopaedic Surgeon based at Royal Aberdeen Children's Hospital in Aberdeen. His MD Thesis focussed on the genetics and epidemiology of ICTEV and has an ongoing research interest in clubfoot and is an active visiting trainer in the Bangladesh Walk for Life programme http://walkforlifeclubfoot.org. He runs the Ponseti service for Grampian and the Northern Isles alongside a paediatric complex foot clinic. He is Secretary of the Scottish Paediatric Orthopaedic Club and Treasurer of the British Society of Children's Orthopaedic Surgeons. He is also the Chair of BMA Scottish Consultant's Committee. He is married to Pam with 2 daughters who keep him busy.

Julian Benson

Julian is a personal injury barrister whose work is focused chiefly on a balance of complex and/or high value claimant and defendant work, typically involving brain injuries, catastrophic limb injuries (and amputations), chronic pain syndromes and disorders, and psychiatric injuries. He is frequently instructed in difficult fatal accident claims and has been instructed in cases against leading counsel on numerous occasions in recent years. Julian is a co-organiser, speaker and co-chair of the annual Cambridge Medico-Legal Conference.

He is also long time organiser of the highly regarded Guildhall Chambers Personal Injury seminars.

In 2014 Julian has co-authored of a series of articles, downloadable free of charge below, with three distinguished clinicians involved in the field of chronic pain. Similar to Julian's book, the articles provide neutral information to individuals involved in litigation involving chronic pain. They are peer-reviewed and published in the Journal of Observational Pain Medicine

In 2013 and 2014 Julian has also published articles on the role of expert witnesses in personal injury litigation, which can be downloaded below, and an article for the Solicitors Journal entitled 'Grumpy Reflections from the PI Bar'.

In 2012 Julian wrote "A Barrister's Guide to Your Personal Injury Claim", a not-for-profit book aiming to explain the content and procedure of personal injury litigation in an entirely neutral manner, to increase understanding among claimants and thereby reduce costs and promote settlements.

Rick Brown

Rick Brown graduated from the University of Cambridge and King's College Hospital, London, before completing orthopaedic training on the Middlesex & Stanmore Rotation, London and then Fellowships in Sydney and at Harvard, USA. After appointment as a Consultant Orthopaedic Surgeon in 2004, he established the new Foot and Ankle Service in Cheltenham and ran a Regional Paediatric Foot Clinic at Bristol Children's Hospital.

His interest in education led to serving two terms on the BOFAS Education committee, where he is now the Honorary Secretary. He is a Lead Examiner for the FRCS (Tr & Ortho).

In 2016 he was appointed as a Consultant in the Foot & Ankle Team at The Nuffield Orthopaedic Centre, Oxford, where his practice covers all areas of Foot & Ankle surgery including sports injuries, neurological conditions, complex forefoot pathology, arthritis and young adult problems.

James Calder

James Calder is a consultant orthopaedic surgeon at the Fortius Clinic London and Professor in the Department of Bioengineering, Imperial College where he directs the "FORCE" Sports Injury Research Group. He completed his Basic Surgical Training in London and the south coast of England where he cemented his enthusiasm for sailing. Following the award of a Research Scholarship from the Royal College of Surgeons he completed his MD thesis at Imperial College and then his PhD thesis on sports injuries of the foot and ankle. James spent a year as foot ankle Fellow to Dr Terry Saxby in Brisbane and was also awarded a travelling sports orthopaedic fellowship in the USA.

He is Chairman of ESSKA-AFAS and on the ICRS committee. He is Associate Editor for the Bone & Joint Journal and previous Associate Editor of KSSTA Journal until 2014 and has been Medical Adviser to Dance UK since 2012.

J. Chris Coetzee

Board-certified orthopedic surgeon, J. Chris Coetzee earned his medical degree from the University of Pretoria School of Medicine in South Africa. He completed his orthopedic residency at the University of Stellenbosch, located in Cape Town, South Africa, his trauma fellowship in Davos, Switzerland and a foot and ankle fellowship at the University of Washington and the Harborview Medical Center, in Seattle, WA, USA.

He is one of the Orthopedic Team Doctors for the Minnesota Vikings. He serves as a fellowship faculty member for the MOSMI/ Fairview Orthopedic Sports Medicine Fellowship program, and will be a Faculty member for the upcoming Foot and Ankle Fellowship program.

He serves as President of the American Orthopedic Foot & Ankle Society (AOFAS). He is an associate editor of the Foot and Ankle International Journal and also a member of the FAI Editorial Board, as well as reviewer to the Journal of Bone and Joint Surgery and several other orthopedic journals.

He is a member of the AAOS CME committee ensuring ongoing education for all orthopedic surgeons. He also chaired the Foot and Ankle Instructional Course committee of the AAOS.

Dr. Coetzee was named one of the top 23 Foot and Ankle surgeons in the US by Orthopedics Today in 2012, 2013, 2015 and has been nominated as a "Top Doc" by the Minneapolis St. Paul Magazine in 2013,2014, 2015, 2016, 2017 and 2018.

Matthew Costa

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.

Tim R. Daniels

Dr. Tim R. Daniels obtained is an alumnus of University of Saskatchewan who went on to complete a F&A fellowship with Drs. J. Smith and L. Fleming at Emory University and an additional 3 months at the Milwaukee County Medical Complex with Drs. J. Gould and G. Harris in their gait mechanics lab. In 1993 he began his F&A practice at Wellesley Hospital in Toronto and, in 1994, established a multi-disciplinary Foot Clinic. Presently, he is Full Professor, Head of the U of T F&A Program, and Head of Orthopaedic Division at St. Michael's Hospital. He serves as Associate Editor at Foot and Ankle International and Reviewer for JBJS (Am) and Journal of American Academy of Orthopedic Surgeons. Other notable positions held to date:

1993-pres.:	Co-founder/Coordinator of the Biennial COFAS Symposia
2002-04:	Co-Founder/Past President, COFAS
2004-07:	Canada's Representative, IFFAS
2010-13:	Research Chair, AOFAS
2011-pres.:	Chair, PI and Member, COFAS 5-Yr Ankle Arthritis Study Group
2012-17:	Term Chair in F&A Research, U of T/St. Michael's Foundation
2013:	Member at Large, AOFAS Board of Directors

He is the recipient of the following awards:

- U of T, Orthopaedic Chair's Teaching Award
- Jameel Ali Continuing Education Award (U of T, Department of Surgery)
- COA Award of Merit
- "Takakura Award" recipient in 2005, 2014, 2017 – for best clinical paper at IFFAS' Triennial meetings
- "Roger Mann Award" recipient in 2008, 2012, 2014, 2015, 2017 – for best clinical paper at the AOFAS Annual meetings.

As Canada's top Orthopaedic F&A surgeon, orthopaedists send their most complex and challenging foot and ankle cases to him and he trains students from all over the world. His surgical skills and research publications have placed him in the top 16 of World's best F&A surgeons by Orthopaedics This Week. .

Raman Dega

Raman Dega is a Consultant Orthopaedic Surgeon at Wexham Park and Heatherwood Hospitals NHS Trust (now part of Frimley Health NHS Foundation Trust). He trained on the Royal London Hospital Orthopaedic rotation which included working at the Royal National Orthopaedic Hospital Stanmore. During his training he worked for two past presidents of the British Orthopaedic Foot and Ankle society. This influenced Mr Dega to specialize in foot and ankle surgery when he was appointed as consultant in 1998. He is a reviewer for the Foot Journal and for the Journal of Bone and Joint. He is a Trainer for Orthopaedics and was a member of the Regional Oxford Orthopaedic Training Committee for ten years.

Chris DiGiovanni

An internationally recognized foot and ankle surgeon. He earned his BA from Dartmouth College and his MD from the Brown University-Dartmouth Medical School Program. Dr. DiGiovanni then completed his residency in orthopaedic surgery at Brown University before pursuing several subspecialty fellowships:

- Orthopaedic Trauma, Brown Medical School
- Joint Replacement/Reconstruction, Cornell University Medical College - Hospital for Special Surgery
- Sports Medicine and Arthroscopy of the Foot & Ankle, Harbor-UCLA and USC Affiliated Hospitals
- Foot & Ankle Trauma/Reconstructive Surgery, University of Washington School of Medicine - Harborview Medical Center
- Foot & Ankle Travelling Fellow, American Orthopaedic Foot and Ankle Society

Before coming to MGH, Dr. DiGiovanni served as Professor and Program Director of the Orthopaedic Residency in the Dept. of Orthopaedic Surgery at Brown University School of Medicine, and was also Chief of the Foot & Ankle Service, Foot & Ankle Fellowship Program Director, and Founder of the Joe DiMaggio Sports Foot & Ankle Center while at Brown.

Dr. DiGiovanni has been honoured numerous times as one of America's Best Doctors and Top Surgeons, and one of Boston's Top Docs, and he has received numerous Patients' Choice and Compassionate Doctor Awards by his patients, and has been honoured by the Excellence in Teaching Award by his orthopaedic residents. Dr. DiGiovanni has received the Order of Merit from the Orthopaedic Research and Education Foundation for distinguished philanthropy in orthopaedic care, has served on the surgical advisory boards of many US and international companies, has published over 150 peer review articles, edited 5 orthopaedic textbooks, and has helped patent a number of currently FDA approved foot and ankle devices to improve patient care. He continues to teach surgery and lecture across the world various foot and ankle topics, and was recently elected to serve on the Presidential Line of the American Orthopaedic Foot and Ankle Society.

In his current capacity as Associate Professor at Harvard Medical School and Vice Chair (Academic Affairs) of the Department of Orthopaedic Surgery at Massachusetts General Hospital in Boston, Dr. DiGiovanni now oversees the very active foot/ankle services and the foot/ankle fellowship at both Mass General and Newton Wellesley Hospitals, and he continues to enjoy active involvement as a consultant team physician for numerous athletes from regional, national, and international collegiate, professional, and Olympic programs.

Mark Gaston

Mark is a consultant orthopaedic surgeon based in Edinburgh. He has major interests in paediatric and neuromuscular orthopaedics and is the clinical lead of the Anderson Gait Lab, Edinburgh. He has expertise in the orthopaedic management of neuromuscular conditions and has a particular interest in congenital foot disorders and in foot and ankle deformity caused by other diseases (e.g. muscle and nerve disorders). He regularly performs gait improvement surgery for the improvement of walking disorders, particularly in the context of complex neurological disease. He completed a PhD during training and continues to publish regularly in the areas of gait and paediatric orthopaedics. He leads a successful national surveillance programme, the Cerebral Palsy Integrated Pathway Scotland (CPIPS), which was established in 2013 and is aimed at optimising musculoskeletal management and monitoring for hip dislocation in all children and adolescents with CP in Scotland.

Andy Goldberg

Andy Goldberg graduated from St Mary's Hospital Medical School (Imperial College) in 1994 before completing his specialist training in trauma and orthopaedics in London with a specialist fellowship in complex foot and ankle disorders in Oxford, as well as overseas in centres of excellence across the USA and Europe. In 2009 he was appointed as a Consultant Orthopaedic Surgeon in Northampton, and in 2010 he was appointed as an Honorary Consultant at the Royal National Orthopaedic Hospital NHS Trust in Stanmore and a Clinical Senior Lecturer at UCL where he helped raise more than £10m of research grants into health informatics; first in man studies into stem cell therapies (ASCAT); and NIHR HTA multicentre RCTs comparing ankle replacement against ankle fusion (TARVA); as well as examining and supervising PhD students. In 2011 he was awarded an OBE for services to medicine. He sits on the outcomes committee for BOFAS, the NJR Research & Editorial Subcommittees as well as the Medical Advisory Boards representing BOFAS on the Ankle Replacement Joint Registry. He sits on the AOFAS editorial board for Foot and Ankle Orthopaedics (FAO) as well as AOFAS OFAR Managerial Board.

Melanie Green

Melanie Green qualified as a Podiatrist in 1994 from Glasgow Caledonian University.

She commenced work at Glasgow Royal Infirmary Hospital in 1996 where she worked for a number of years with high risk feet within the Diabetic teams.

Melanie travelled to Connecticut USA for a residency with a surgical podiatry team where she experienced the surgical side of feet. On her return Melanie began her role as an Extended Scope practitioner in orthopaedics at Glasgow Royal Infirmary in 2002.

Melanie has seen the ESP role change dramatically over the years. From dealing with new patients, advising on surgical interventions, listing directly to surgical lists, and covering "on-call" to the hospital for acute orthopaedic foot ulcers. Charcot management and augmenting orthopaedic management with podiatry skills allows for a specialist one-stop service available to a very busy orthopaedic service. The ESP role additionally gives open access to other disciplines both acute and community for direct expert orthopaedic foot advice.

Joel Humphrey

Joel Humphrey is a Trauma and Orthopaedic Surgeon with a special interest in Foot and Ankle Surgery. He graduated from Barts and The London Medical School and has a Masters Degree in Sports and Exercise Medicine. His Orthopaedic higher surgical training was on the London South East Thames rotation. He is double fellowship trained. Initially undertaking the Foot and Ankle Reconstruction fellowship in Cambridge then a Complex Trauma fellowship in Oxford. He has recently commenced as a substantive Consultant at Milton Keynes University Hospital.

Rebecca Kearney

Associate Professor Rebecca Kearney is a clinical academic physiotherapist with a joint appointment between University Hospitals Coventry and Warwickshire and Warwick Clinical Trials Unit. Dr Kearney has completed an Arthritis Research UK Fellowship (2009-2012), NIHR Clinical Lectureship (2013-2016) and is currently undertaking an NIHR Career Development Fellowship (2017-2021). Her focus is leading the delivery of research programmes that evaluate the clinical and cost effectiveness of interventions in the area of trauma and orthopaedic rehabilitation. She is currently Chief Investigator and co-applicant for a portfolio of multi centre randomised controlled trials underpinned by NIHR and musculoskeletal charity funding and has a leadership position as Associate Director of Warwick Clinical Trials Unit.

Stephen Kearns

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

Research has always been a key area of interest and he has won a number of National and International prizes. No fewer than 60 of his research papers have been published in peer review journals, cited over 650 times. He has made over 120 presentations at National, European and International Meetings. His current research interests relate to the clinical application of basic sciences in the treatment of cartilage injury and also in adult reconstructive surgery.

He currently holds the position of Consultant Orthopaedic Surgeon in Galway University Hospital and is an Honorary Lecturer at the National University of Ireland, Galway. He is heavily involved with the advancement of Foot and Ankle surgery in Ireland and is using and researching innovative products and techniques. Recently has developed, patented and launched a hind foot fusion nail.

He has a special interest in osteochondral lesions of the ankle and their treatment. Other areas of expertise include lower limb joint replacement, tendon transplantation and lower limb reconstructive surgery.

Senthil Kumar

Senthil Kumar is a consultant orthopaedic surgeon at Glasgow Royal Infirmary, he specialises in foot & ankle related problems. His particular expertise is in ligament and tendon reconstruction, total ankle replacements and bunion corrective surgery. He has a number of teaching roles, he holds Honorary Lecturerships with the Universities of Glasgow, Dundee and Glasgow Caledonian teaching Sports Scientists, Physiotherapists, Podiatrists and orthopedic trainee doctors. He is also an examiner for the MRCS and FRCS examinations conducted by the Royal Colleges of Surgeons in the United Kingdom and Ireland.

Jitendra Mangwani

Jitendra Mangwani is a Consultant Orthopaedic Foot and Ankle Surgeon at University Hospitals of Leicester. He graduated in India and completed his higher surgical training in trauma and orthopaedics in London with a specialist fellowship in foot and ankle surgery. He has a keen research interest. He is committed to medical education and is regularly invited as a faculty to courses and conferences. He runs both national and international foot and ankle surgery courses.

Lorenzo Masci

As a consultant in Sports and Exercise Medicine, Dr Lorenzo Masci has undertaken extensive and vigorous specialist training. After completing orthopaedic residency in Australia, he completed a four-year full time specialist Sports Medicine training program with the Australasian College of Sports Physicians. He then moved to London in 2007 to work as a consultant in the elite and private setting. Dr Lorenzo Masci works as a specialist consultant in various elite sporting environments. He is currently the lead Sports Physician for London Wasps Rugby. He was a consultant for Australian Open Tennis Tournament from 2001 to 2007. He was the lead Sports Physician for the Melbourne Storm Rugby League from 2005 to 2007. He was also part of the Sports Physician team at Fulham Football Club from 2008 to 2010. He has also worked in elite Australian football, weightlifting, judo and swimming. He is currently involved in Achilles and Patella tendon research and has published scientific papers with Professor Hakan Alfredson, who is an eminent world expert in tendinopathy. He is one of only a handful of doctors to use UTC (Ultrasound Tissue Characterisation) as part of the management of tendon disease and tendinopathy.

Barry Parker

Barry graduated from Edinburgh University in 1985. On completion of GP vocational training in 1990 he became a full-time partner in an Edinburgh practice, where he remained for 19 years. He became a Fellow by Assessment of the RCGP in 2004, and completed an MSc in Primary Care at the University of Dundee in 2007. He also worked as a GP appraiser before joining the MDDUS as medical adviser in 2009. In 2012 Barry completed a Masters Degree in Medical Law. In his current role he assists doctors with a range of medicolegal matters including complaints, regulatory and disciplinary cases, claims, fatal accident inquiries and coroner's inquests. He is also the medical editor of 'Insight', the MDDUS quarterly publication for members.

Chris Pearce

Chris Pearce trained and worked in London before moving to Asia. He is the director of foot and ankle surgery at the National University Health System, Jurong Health Campus in Singapore.

He is also appointed as Assistant Professor at the National University of Singapore, Associate Program Director of NUHS residency program and director of research for Jurong Health.

Chris is the secretary of ESSKA-AFAS and a member of the Achilles tendon study group, the ankle cartilage repair society and the ankle instability group. His main clinical and research interest is in sporting conditions and minimally invasive surgery of the foot and ankle.

Martinus Richter

- Certified for Trauma Surgery
- Certified for General Surgery
- Certified for Orthopaedics and Traumatology
- Certified for Rescue / Emergency Medicine
- Certified for Sports Medicine
- MBA Business Management for Physicians with degree "Health Economist Oec. med"
- Head Department for Foot and Ankle Surgery Hospital Rummelsberg and Sana Hospital Nuremberg
- President International Federation of Foot and Ankle Societies (IFFAS)
- Past President European Foot and Ankle Society (EFAS)
- 2nd Vice President German Orthopaedic Foot and Ankle Society (DAF)
- President Weight-Bearing CT International Study Group (WBCT ISG)
- Certificate Foot Surgery German Orthopaedic Foot and Ankle Society (DAF)
- Honorary European Certification in Trauma and Orthopaedic Foot and Ankle Surgery of the European Foot and Ankle Society (EFAS)

James Ritchie

James qualified from Guy's & St Thomas' medical school in 1995 and moved to Tunbridge Wells for his basic surgical training rotation the following year. Finding the town and its chalybeate spring to his liking he never really left, although as a registrar on the South-East Thames rotation he was sent to such places as King's College Hospital and Hastings: harrowing experiences that haunt him to this day. James is a member of the BOFAS Scientific Committee and represents the society on the National Tariff Expert Working Group: a weighty honour that has led him to develop an interest in Excel spreadsheets that borders on the unnatural. He is a keen singer and enjoys all choral music except Mendelssohn's "Elijah", which he holds directly responsible for most of the musical crimes of the late 19th century. He is still practising as a Consultant Orthopaedic Foot and Ankle Surgeon in Tunbridge Wells, but aspires one day to stop practising and simply float along on a cloud of effortless superiority, as Consultants used to when he was a houseman.

Peter Rosenfield

Peter Rosenfeld was appointed as the Consultant Foot & Ankle surgeon to St Mary's Hospital, London in 2004. He trained at the Royal London Hospital, including one year at The Royal National Orthopaedic Hospital and attained the FRCS (Orth) in 2003.

He went on to sub-specialise in Foot & Ankle surgery with the internationally recognised Dr T Saxby in Brisbane, on the only Australian Orthopaedic Association approved Foot & Ankle fellowship.

Peter is the regional speciality trainer in foot & ankle orthopaedics and sports medicine and has a particular fields of research in ankle replacement and cartilage reconstruction. He is Head of the Foot & Ankle Unit at Imperial College Healthcare NHS Trust.

Major Semakula

Major Semakula qualified as a physiotherapist in 2003 and initially worked at Guys and St Thomas' Hospital, before leaving to join the Army as a Professionally Qualified Officer in 2008. During her time in the Army she has worked in primary care physio departments, intermediate care providing intensive rehabilitation courses, Royal Centre of Defence Medicine in the trauma and orthopaedic department and in the past 3 years managing a Regional Rehabilitation Unit providing Sports and Exercise Medicine Clinics, Biomechanical Assessments and a Regional Podiatry Service. Maj Semakula has been deployed in a number military operations and exercises providing both hospital and outpatient physio support in Afghanistan, Nijmegan Marches in Holland and UK Special Forces selection cadres. She has a particular interest in injection therapy and diagnostic musculoskeletal ultrasound and is currently the secretary of the Defence Working Group in this area.

Ian Sharpe

Ian Sharpe has been a consultant orthopaedic foot and ankle surgeon at the Princess Elizabeth Orthopaedic Centre, Exeter since 2003. He graduated from St Mary's HMS in 1991, and completed his orthopaedic training on the Far South West rotation, undertaking further clinical and research fellowships in Sydney and Seattle. He established the foot and ankle unit in Exeter and was Lead Clinician for Trauma from 2006-10, and was appointed Clinical Director of PEOC in 2014. He has a particular interest in ankle replacement surgery – primary and revision techniques.

Tim Theologis

Tim Theologis is a Consultant Orthopaedic Surgeon at Oxford University Hospitals NHS Foundation Trust. He is also a Senior Clinical Lecturer at Oxford University and a Research Professor at Oxford Brookes University. He has a strong clinical and research link with the Oxford Gait Laboratory. He looks after children with orthopaedic conditions, primarily developmental dysplasia of the hip and musculoskeletal tumours, as well as neuromuscular disorders, including cerebral palsy. He is involved in the teaching of medical students, the supervision of postgraduate degrees and the training of orthopaedic residents. He was Editor in Chief for Gait and Posture from 2005 to 2015. He has been a Board member of the British Society for Children's Orthopaedic Surgery since 2009 and is the current President. He chairs the medical committee of the charity STEPS.

Rhys Thomas

Rhys Thomas graduated from University College Hospital, London and completed orthopaedic training in South Wales. He undertook Foot & Ankle Fellowship training at St Michaels Hospital, Toronto with Dr Tim Daniels and has subsequently been awarded travelling Fellowships by both EFAS and AOFAS. He was appointed as a consultant orthopaedic surgeon at the University Hospital of Wales in 2003 and supervises the local foot and ankle fellowship. His interest in sports injuries has led to current care of national and international athletes. He is a member of the BOFAS Education Committee and has been the convenor of the inaugural Principles courses in India.

Mike Uglow

Mr Uglow has been a consultant for 18 years and is currently working on sabbatical in Abu Dhabi. He has been a consultant at The University Hospital Southampton for 15 years after an initial 2 year appointment in Portsmouth. He trained at St George's Hospital Medical School, London and moved to Southampton where he completed his basic and higher surgical training as part of the Wessex regional rotation. He finished his training with a one year specialist fellowship in Paediatric Orthopaedic surgery at the Children's Hospital at Westmead in Sydney, Australia. Mr Uglow has a special interest in children's orthopaedics & focusses on deformities of the lower limb especially the foot & ankle. He has extensive experience in managing a full range of congenital and developmental foot deformities with particular experience in clubfoot and its sequelae. Mr Uglow has considerable experience in managing foot and ankle trauma including sports injuries in children and adolescents.

Melanie Vandenberghe

Bitten at early age by sports, it was only natural that Melanie Vandenberghe went on from Medical school to do an Orthopaedic surgery training. She is made in Belgium, but has a great affinity with the UK and arranged a registrar year in London at the UCLH. In 2017 she graduated as an Orthopaedic surgeon en further specialised herself in foot an ankle surgery. Visiting London (Fortius clinic), Paris (Ambroise Paré Hospital), Lausanne (CHUV) and China (Qilu) among other countries as a fellow. This year she started her consultant position in Antwerp, working partly at the University college in Antwerp and partly in AZ Monica hospitals where Belgian top athletes frequent.

Matt Welck

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

Andrew Wines

Dr Andrew Wines was educated at Knox Grammar School and the University of Sydney. After obtaining his fellowship in orthopaedic surgery from the Royal Australasian College of Surgeons in 2002 he travelled to Dublin and Bristol for subspecialty training in paediatric and adult foot and ankle surgery. He holds appointments at several public and private hospitals in Sydney and is director of the Sydney Foot and Ankle Fellowship

He is a Churchill Fellow, Chair of the NSW Australian Orthopaedic Association and secretary of the Medical Benevolent Association of NSW. He is married to an anaesthetist and has 2 children.

Ian Winson

Ian Winson is a NHS Consultant and Honorary Senior Lecturer in Trauma and Orthopaedic Surgery, Southmead Hospital, Bristol. Mr Winson specialises in foot and ankle surgery and Sports Injuries. He is President of the British Orthopaedic Association, Editor JTO and Review Editor European Journal Foot and Ankle Surgery, Past President of the BOA.

Having gone to medical school in Sheffield he returned there for most of senior training. It was a fellowship in Sweden that introduced him to ankle arthroscopy. He championed arthroscopic ankle arthrodesis in the early 1990's and has been one of the advocates of the evolution of arthroscopic foot and ankle techniques in the European arena. He has been responsible for using arthroscopic techniques to treat patients from top class sportsman through to 90 year olds with arthritis!

James G. Wright

Currently Chief, Economics, Policy & Research at the Ontario Medical Association. Most recently he was Professor of Orthopaedic Surgery at the University of Oxford, United Kingdom. Previously, he was Chief of Perioperative Services, and Surgeon-in-Chief, Department of Surgery, and Vice President, Medical at The Hospital for Sick Children (SickKids).

At SickKids, Jim was responsible for the operation of six surgical and five Departments (Anaesthesia, Critical Care, Dentistry, Ophthalmology and Otolaryngology). In his role as Vice President, Medical, Dr. Wright was executive medical lead for the quality and risk teams, providing guidance and expertise on advancing the quality of clinical care and services

He was an ABC fellow. He is the recipient of numerous awards including the Kappa Delta Award of AAOS and the Arthur Huene Award of POSNA. Dr. Wright was Chair of the Paediatric Surgical Chiefs of Canada and lead for the Canadian Paediatric Surgical Wait Time Project. In 2016 he was awarded the Order of Canada, Canada's highest civilian order.

Jim completed his surgical training at the University of Toronto, a clinical fellowship in Melbourne, Australia, graduate work in clinical epidemiology and a fellowship in the Robert Wood Johnson Clinical Scholars Program at Yale University.

Alastair Younger

Dr. Alastair Younger grew up close to St. Andrew's in Scotland and attended medical school in Aberdeen, graduating in 1985. After working for three years in the National Health Service, Dr. Younger moved to Vancouver to study Kinesiology at Simon Fraser University. After finishing a Master's Degree, studying Limb Lengthening in Children, he did his residency in Orthopaedic Surgery at the University of British Columbia. He received a further degree from the University of Aberdeen for his work in Limb Lengthening. Dr. Younger moved to Boston in Massachusetts to study Arthritis Surgery. He trained in Foot and Ankle at the University of Washington in Seattle, finishing his training in 1997 and returning to be on staff at the University of British Columbia and begin his practice at St. Paul's Hospital.

Dr. Younger is the past president of the Canadian Orthopaedic Foot and Ankle Society and a founding member. He has been active on many committees of the Canadian Orthopaedic Association, the American Foot and Ankle Society, and the Arthroscopy Association of North America. He is the British Columbia Orthopaedic Association President. Dr. Younger has been recognized by the Canadian Orthopaedic Association, by being awarded the North American Traveling Fellowship in 1997 and the American/British/Canadian Traveling Fellowship in 2007.

He has been appointed to full Professor at the University of British Columbia in 2014 in recognition of his contribution towards the research and teaching of foot and ankle conditions. He is one of three full professors practicing foot and ankle in Canada. He has published 95 peer reviewed articles and 35 book chapters. He has been awarded the AOFAS Roger Mann award four times.

Dr. Younger presently enjoys the outdoors, cycling, and skiing. He also still tries to match his cultural heritage of being able to play golf, but still to a very poor level.

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References:

1. Includes world-wide implantations of all generations; newest generation has over 30,000 world-wide since 1998.
2. Gougoulias, N., Khanna, A., & Maffulli, N. (2008). History and evolution in total ankle arthroplasty. British Medical Bulletin, 111-151.
3. STAR Op Tech.
4. Jastifer, J, Coughlin, M, Long-Term Follow-Up of Mobile Bearing Total Ankle Arthroplasty in the United States, FAI, 2015, Feb;36(2): 143-50.
5. Only implant available in the US, Europe, Australia and China.

PROGRAMMES

DAY 1: WEDNESDAY 7TH NOVEMBER

Time	Event	Speaker
08:00-08:50	Registration	
08:50-09:00	Welcome	Steve Hepple
09:00-10:45	**INSTRUCTIONAL 1 – PAEDIATRIC MEETS ADULT FOOT** *Chairs: Paul Halliwell / Ian Sharpe*	
09:00-09:10	OCL in Children	Mike Uglow
09:10-09:20	Coalitions	Rick Brown
09:20-09:35	Do paediatric painless flexible feet become painful?	Tim Theologis
09:35-09:50	Long term outcome of CTEV after Ponsetti	Mark Gaston
09:50-10:05	Long term outcome after open treatment	Simon Barker
10:05-10:30	Professional overview – inheriting paediatric foot problems	James G. Wright
10:30-10:45	Discussion	
10:45-11:15	Coffee/Tea (Exhibition area)	
11:15-12:35	**FREE PAPERS 1** *Chairs: Roland Russell / Tim Clough* Please see page 42-45 for full abstract	
12:35-13:00	**KEYNOTE LECTURE**	
	VTE where are we now?	Chris DiGiovanni
13:00-13:45	Lunch (Exhibition area)	

Notes:

DAY 1: WEDNESDAY 7TH NOVEMBER

Time	Event	Speaker
13:45-15:15	**INSTRUCTIONAL 2 – RESEARCH IN ORTHOPAEDICS** *Chairs: Hiro Tanaka / Lyndon Mason*	
13:45-14:10	Canadian ankle database – What have we learnt?	Alastair Younger
14:10-14:40	UK F&A research update	Matt Costa/R.Russell
14:40-15:05	Evidence based Orthopaedics	James G. Wright
15:05-15:15	Discussion	
15:15-15:45	Coffee/Tea (Exhibition area)	
15:45-17:00	**INSTRUCTIONAL 3 – SOFT TISSUE ISSUES** *Chairs: Rhys Thomas / Bob Carter*	
15:45-15:55	Tendons through the keyhole	Ian Winson
15:55-16:05	Lisfranc – current thoughts	Chris DiGiovanni
16:05-16:15	Syndesmosis	James Calder
16:15-16:25	The medial ankle ligaments	Chris Coetzee
16:25-16:35	The lateral ligament repair – the case for arthroscopy	Chris Pearce
16:35-16:45	Turf Toe – how I deal with the pain.	Rhys Thomas
16:45-17:00	Discussion	
17:00-17:25	**ENLIGHTENED EDINBURGH:** Rogues, Reformers and Resurectionists	James Ritchie
19:00	Industry hospitality	

Notes:

DAY 2: THURSDAY 8TH NOVEMBER

Time	Event	Speaker
08:45-09:15	**NJR UPDATE/OUTCOMES (Main auditorium)** *Chairs: Paul Halliwell / Andy Goldberg*	
09:15-10:45	**DIFFICULT CASES (Main auditorium)** *Chairs: Rajesh Kakwani / Lyndon Mason*	
09:00-12:00	**AHP MEETING (Kilsyth)** See page 28 for programme	
08:30-12:00	**INDUSTRY WORKSHOPS** See page 10 & 11 for details and location	
10:00-11:00	Coffee/Tea (Exhibition area)	
12:00–13:00	Lunch (Exhibition area)	
12:45-14:30	**AGM - BOFAS MEMBERS ONLY (Main auditorium)**	
13:00-14:30	**AHP SESSION 2 (Kilsyth)** See page 28 for programme	
13:00-14:30	**FELLOWS FORUM (Lammermuir 2)** See page 29 for programme	
14:30-15:00	Coffee/Tea (Exhibition area)	
15:00-16:00	**FREE PAPERS 2** *Chairs: Jitendra Mangwani / Dave Townshend* Please see page 46-49 for full abstract	
16:00-16:30	**MEDICOLEGAL INTERLUDE 1** Causation: toilet roll holders, balconies, prosthetics and decision-making	Julian Benson
16:30-17:45	**INSTRUCTIONAL 4** **TREATMENT OF OSTEOCHONDRAL LESIONS** *Chairs: Anna Chapman / Nikki Kelsall*	
16:30-16:40	OCDs introduction	Ian Sharpe
16:40-16:50	Bone marrow stimulation – still the first option?	Patricia Allen
16:50-17:00	Cells and membranes	Martinus Richter
17:00-17:10	Mosaiocplasty technique and results	Pete Rosenfeld
17:10-17:20	Other options	Chris Coetzee
17:20-17:30	Overview/My algorithm	Stephen Kearns
17:30-17:45	Discussion	
19:30-23:30	Gala Dinner – National Museum of Scotland (Buses from DoubleTree Hilton, Bread Street, from 19:00)	

DAY 2: THURSDAY 8TH NOVEMBER
DETAILED AGM

Time	Item	Speaker
12:45-12:55	New Members Vote/Council and President Elect	Mark Davies | Heath Taylor
12:55-13:00	President Report	Steve Hepple
13:00-13:10	Education Committee Report	James Davis
13:10-13:20	Scientific Committee Report	Roland Russell
13:20-13:30	Outcome Committee Report	Paul Halliwell
13:30-13:40	European Foot & Ankle Society Report	Don McBride
13:40-13:50	Secretary Report	Mark Davies
13:50-14:00	Communicaitons Officer Report	Robert Clayton
14:00-14:10	Treasurer Report	Heath Taylor
14:10-14:15	Results of Vote/Council and President Elect Appointments	Mark Davies | Heath Taylor
14:15-14:30	Soap Box – time for floor to bring matters to attention of council	
14:30	President Handover	

The Annual General Meeting of the society will take place in Lennox 3 of the EICC Edinburgh from 12:45 - 14:30 under the chairmanship of Mr Stephen Hepple, BOFAS President.

Notes:

DAY 2: THURSDAY 8TH NOVEMBER
AHP PROGRAMME

Time	Event	Speaker
09:00-09:10	**INTRODUCTION**	Jitendra Mangwani and Noelene Davey
09:10-10:30	**SERVICE DEVELOPMENT & INNOVATIVE SERVICES** *Chairs: Robert Clayton / Tim Williams*	
09:10-09:30	Virtual fracture clinic: lessons learnt	Senthil Kumar
09:30-09:50	The 'Opt In' foot & ankle service in Glasgow	Melanie Green
09:50-10:00	Discussion	
10:00-10:30	Tea / coffee (Exhibition area)	
10:00-12:00	**INJURY & REHABILITATION** *Chairs: Maneesh Bhatia / Anna Chapman*	
10:30-10:50	High ankle sprain	Chris DiGiovanni
10:50-11:00	Discussion	
11:00-11:20	Ankle injury rehabilitation in the Armed Forces	Major Frances Semakula
11:20-11:30	Discussion	
11:30-12:00	Foot and ankle trauma cases with panel discussion	Jitendra Mangwani
12:00-13:00	Lunch (Exhibition area)	
13:00-14:30	**IMAGING AND CLINICAL CASES** *Chairs: Noelene Davey / Sylvia Wojciechowski*	
13:00-13:20	New modalities for imaging the Achilles tendon	Lorenzo Masci
13:20-13:30	Discussion	
13:30-14:00	Interesting cases	Martinus Richter
14:00-14:30	**RESEARCH QUESTIONS & METHODS FOR AHPS** *Chair: Alastair Younger*	David Keene, Rebecca Kearney
14:30	End of afternoon session	
14:30	Tea/Coffee (Exhibition area)	

DAY 2: THURSDAY 8TH NOVEMBER
FELLOWS PROGRAMME

Time	Event	Speaker
12:40	**INTRODUCTION**	Naveethan Siva, Shelain Patel & Melanie Vandenberghe
	ADVANCED FOOT & ANKLE TRAINING EXPERIENCES	
12:45	A Teaching Hospital Fellowship	Senthil Kumar
12:53	A Private Hospital & Professional Sports Fellowship	James Calder
13:01	A District General Hospital Fellowship	Raman Dega
13:09	The Australian and Overseas Fellowship	Andrew Wines
13:20	Questions	Panel
	PREPARING FOR A CONSULTANT POSITION	
13:30	The Essential Non-clinical Skills & Qualifications	Matt Welck
13:35	3 top tips in preparation for your interview	Joel Humphrey
13:40	The Highs & Lows of your 1st year as a consultant	Melanie Vandenberghe
13:50	Questions	Panel
	HOW CAN BOFAS HELP?	
14:05	Courses, Bursaries & Research Funds	Tim Williams
14:10	Questions	Panel
14:15	Close	

Notes:

DAY 3: FRIDAY 9TH NOVEMBER

Time	Event	Speaker
08:30-09:55	**FREE PAPERS 3** *Chairs: Maneesh Bhatia / Raman Dega* Please see page 50-54 for full abstract	
09:55-10:15	**KEYNOTE LECTURE 2**	
	Standing CT Scans – do we all need these?	Martinus Richter
10:15-10:45	**MEDICOLEGAL INTERLUDE 2**	
	Montgomery	Barry Parker
10:45-11:15	Brunch/Coffee (Exhibition area)	
11:15-12:45	**INSTRUCTIONAL 5 – 'BASIC' SCIENCE** *Chairs: Mike Butler / Francesc Malagelada*	
11:15-11:27	The gastrocnemius contracture- the root of all evil?	Chris DiGiovanni
11:27-11:39	Bone grafts, if, when and what	Alastair Younger
11:39-11:51	PRP – can we use it?	Andrew Wines
11:51-12:03	Wound Healing – importance of angiosomes	Timothy Daniels
12:03-12:15	Stem cells in foot & ankle	Andy Goldberg
12:15-12:27	Post-thrombotic syndrome – should we worry?	Jit Mangwani
12:27-12:45	Discussion	
12:45-13:00	Prizes	Steve Hepple
13:00	Meeting close	

Notes:

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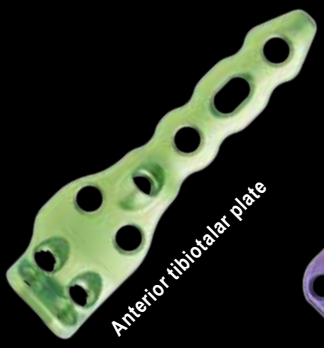

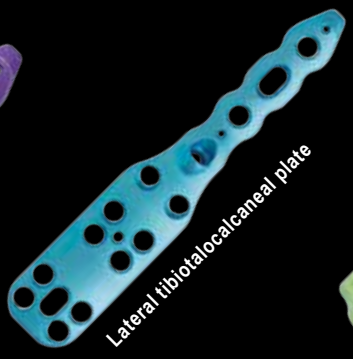

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FREE PAPERS
ABSTRACT SUMMARY

FREE PAPERS 1

Wednesday 7th November 2018

Chairs: Roland Russell I Tim Clough

FP1 - 11:15

Autologous matrix induced chondrogenesis (AMIC) aided reconstruction of osteochondral lesions of the talus - Five year follow-up

M. Wiewiorski[1], A. Barg[2], V. Valderrabano[3]
[1]Kantonsspital Winterthur, Wínterthur, Switzerland,
[2]University of Utah, Salt Lake City, United States,
[3]Swiss Ortho Center AG, Schmerzklinik Basel, Basel, Switzerland

FP2 - 11.21

Biopatch grafting of large or recalcatrant osteochondral defects of the talus

J. Cruickshank[1], J. Eyre[1]
[1]Mid Yorkshire Hospitals NHS Trust, Wakefield, United Kingdom

FP3 - 11:27

The arthroscopic management of talar body fractures

L. Cannon[1]
[1]Healthpoint Hospital, Abu Dhabi, United Arab Emirates

DISCUSSION - 11:33

FP4 - 11:37

Short term outcome of complex revision total ankle arthroplasty

T. Nurm[1], J. Ramaskandhan[1], A. Nicolas[1], M. Siddique[1]
[1]Freeman Hospital, Newcastle upon Tyne, United Kingdom

FP5 - 11:43

Outcomes of revision total ankle replacement- A minimum of 2 year follow up

A. Pujol Nicolas[1], J. Ramaskandhan[1], T. Nurm[1], M. Siddique[1]
[1]Freeman Hospital, The Newcastle upont Tyne NHS Foundation Trust, Foot and Ankle Department, Newcastle upon Tyne, United Kingdom

Notes:

FP6 - 11:49

Isolated ankle fusion for failed total ankle replacement using a spine cage and anterior plating construct

D. Miller[1], S. Senthi[1], I. Winson[1]
[1]AOC Southmead Hospital, Bristol, United Kingdom

FP7 - 11:55

All component revision for failed total ankle arthroplasty - Early results and complications

I.K.T. Cunningham[1], C.S. Kumar[2]
[1]Glasgow Royal infirmary, Trauma and Orthopaedics, Glasgow, United Kingdom,
[2]Glasgow Royal Infirmary, Trauma and Orthopaedics, Glasgow, United Kingdom

DISCUSSION - 12:01

FP8 - 12:05

Outcome of trans-metatarsal amputations in patients with diabetes mellitus. A multi-disciplinary foot care service approach

J.A. Humphrey[1], S. Kanthasamy[1], P. Coughlin[1], A. Coll[1], A.H.N. Robinson[1]
[1]Cambridge University Hospitals NHS Foundation Trust, Addenbrooke's Hospital, Cambridge, United Kingdom

FP9 - 12:11

Frequency of venous thrombo-embolism in patients with total contact cast

J. Widnall[1], X. Tonge[1], G. Jackson[1], S. Platt[2]
[1]Arrowe Park Hospital, Trauma & Orthopaedics, Wirral, United Kingdom,
[2]Gold Coast University Hospital, Department of Orthopaedic Surgery, Southport, Australia

DISCUSSION - 12:17

Notes:

FREE PAPERS 2

Thursday 8th November 2018

Chairs: Jitendra Mangwani | Dave Townshend

FP10 - 15:00

Classification of Freiberg´s disease - A guide for management

N. Nanavati[1], M. Davies[1], C. Blundell[1], M. Flowers[1], C. Chadwick[1], H. Davies[1]
[1]Sheffield Teaching Hospitals Trust, Foot and Ankle, Sheffield, United Kingdom

FP11 - 15:06

Five-year outcomes of a synthetic cartilage implant for the first metatarsophalangeal joint in advanced hallux rigidus

T. Daniels[1], Cartiva study group
[1]University of Toronto, Surgery - Orthopaedics, Toronto, Canada

DISCUSSION - 15:12

FP12 - 15:16

The role of the lateral ankle complex in controlling laxity of the ankle joint: A biomechanical investigation

D. Miller[1,2], J. Stephen[3], J. Calder[2,3], H. el Daou[3]
[1]AOC Southmead Hospital, Bristol, United Kingdom,
[2]Fortius Clinic, London, United Kingdom,
[3]Imperial College of London, London, United Kingdom

FP13 - 15:22

Do rugby boots with a bladed stud increase contact pressures through the fifth metatarsal compared to a rounded stud? A biomechanical study

D. Winson[1], O. Lawrence[2], D. Cazzola[3], I. Winson[4]
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Notes:

FP14 - 15:28

Simulated weight reduction with an anti-gravity treadmill: a pilot study to assess pain reduction in foot and ankle arthritis

W. Morley[1], E. Dawe[2], R. Boyd[1], J. Creasy[1], J. Grice[3], D. Marsland[4], H. Taylor[1]
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FP15 - 15:34

Multi-center, randomized, controlled study of subtalar arthrodesis using AlloStem versus autologous bone graft

C. Coetzee[1], M. Myerson[2], J. Anderson[3], R. Stone McGaver[1]
[1]Twin Cities Orthopedics, Edina, United States,
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[3]Orthopaedic Associates of Michigan, East Leonard Medical Complex, Grand Rapids, United States

FP16 - 15:40

High ankle sprains with syndesmosis instability: Time to MRI matters

D. Marsland[1], M. Randell[2], E. Ballard[3], B. Forster[4], M. Lutz[1]
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DISCUSSION - 15:46

Notes:

FREE PAPERS 3

Friday 9th November 2018

Chairs: Maneesh Bhatia I Raman Dega

FP17 - 08:20

Outcomes of peroneal tendoscopy: The Bristol experience

S. Senthi[1,2], D. Miller[1], S. Hepple[1], W. Harries[1], I. Winson[1]
[1]Southmead Hospital, North Bristol Trust, Bristol, United Kingdom,
[2]Universiity of Auckland, Middlemore Hospital, Auckalnd, New Zealand

FP18 - 08:36

Platelet rich plasma for acute achilles tendon rupture: Results of the PATH-2 study, a double-blind multicentre randomised placebo-controlled trial

D.J. Keene[1], J. Alsousou[2], P. Harrison[3], P. Hulley[1], S. Wagland[1], S. Parsons[1], J. Thompson[1], H. O'Connor[1], M.M. Schlüssel[1], S. Dutton[1], S.E. Lamb[1], K. Willett[1], for the PATH-2 collaborators
[1]University of Oxford, Nuffield Department of Orthopaedics, Rheumatology and Musculoskeletal Sciences, Oxford, United Kingdom,
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[3]University of Birmingham, Institute of Inflammation and Ageing, Birmingham, United Kingdom

FP19 - 08:42

Treatment of pediatric arthrogrypotic clubfoot. 20 years of clinical experience

D. Begkas[1], J. Michelarakis[1], H. Mirtsios[1], A. Kondylis[1], H. Apergis[1], L. Benakis[1], P. Pentazos[1]
[1]General Children's Hospital ' P.&A. Kyriakou', 2nd Orthopaedic Department, Athens, Greece

DISCUSSION - 08:48

FP20 - 08:52

Ankle fracture fixation in over 60's: Fibular-pro-tibia V's hindfoot nailing

A. Eyre-Brook[1], J. Ring[1], R. Gadd[1], H. Davies[1], C. Chadwick[1], M. Davies[1], C. Blundell[1]
[1]Sheffield Teaching Hospitals Trust, Sheffield, United Kingdom

FP21 - 08:58

The natural history of undisplaced Lisfranc-type injuries initially treated conservatively

P. Chen[1], N. Ng[1], S.P. Mackenzie[2], J.A. Nicholson[2], A.K. Amin[2]
[1]University of Edinburgh, Medical School, Edinburgh, United Kingdom,
[2]Royal Infirmary of Edinburgh, Department of Orthopaedic and Trauma Surgery, Edinburgh, United Kingdom

Notes:

FP22 - 09:04

Case comparison study of two surgical approaches for fixation of calcaneal fractures

M. Brookes[1,2], R. Kakwani[2], D. Townshend[2], A. Murty[2]
[1]Newcastle University, Newcastle upon Tyne, United Kingdom,
[2]Northumbria Healthcare Trust NHS Foundation Trust, Newcastle upon Tyne, United Kingdom

FP23 - 09:10

Anatomy of the insertion of the posterior inferior tibiofibular ligament and its relevance to posterior malleolar rotational pilon fractures

M.L. Jayatilaka[1], A. Fisher[2], L. Fisher[2], A. Molloy[1,2], L. Mason[1,2]
[1]Aintree University Hospital, Liverpool, United Kingdom,
[2]University of Liverpool, Liverpool, United Kingdom

DISCUSSION - 09:16

FP24 - 09:20

Muller-Weiss disease; proposed classification and treatment algorithm

R. McKenna[1], J. Wong[1], A. Tucker[1]
[1]Altnagelvin Hospital, Trauma and Orthopaedics, Londonderry, United Kingdom

FP25 - 09:26

Arthroscopic arthrodesis of the isolated talo-navicular joint

A. Parsons[1], S. Parsons[1,2]
[1]Royal Cornwall Hospital NHS Trust, Trauma and Orthopaedics, Truro, United Kingdom,
[2]The Duchy hospital, Trauma and Orthopaedics, Truro, United Kingdom

DISCUSSION - 09:32

Notes:

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1. Data on file at Cartiva, Inc. N=106 in post-approval study cohort.

FREE PAPERS
ABSTRACT DETAILED

FREE PAPERS 1
Wednesday 7th November 2018

FP1
Autologous matrix induced chondrogenesis (AMIC) aided reconstruction of osteochondral lesions of the talus - Five year follow-up

M. Wiewiorski[1], A. Barg[2], V. Valderrabano[3]
[1]Kantonsspital Winterthur, Winterthur, Switzerland,
[2]University of Utah, Salt Lake City, United States,
[3]Swiss Ortho Center AG, Schmerzklinik Basel, Basel, Switzerland

Introduction: Autologous Matrix Induced Chondrogenesis (AMIC) for surgical treatment of osteochondral lesions of the talus (OCLT) has shown excellent clinical and radiological results at short term follow up two years after surgery. However, no mid-term follow up data is available.

Aim:

1. To evaluate the clinical outcome after AMIC-aided reconstruction of osteochondral lesions of the talus at a minimum follow up time of five years.

2. To evaluate the morphology and quality of the regenerated cartilage by magnetic resonance imaging (MRI) at on at a minimum follow up time of five years.

Methods: Seventeen patients prospectively underwent surgery receiving a AMIC-aided repair of OCLT consisting of debridement, autologous grafting, and sealing of the defect with a collagen scaffold (Chondro-Gide, Geistlich Surgery, Wolhusen, Switzerland). Clinical and radiological assessment was performed before and after a minimum of 60 months after surgery (average 78 months, range, 60-120). Clinical examination included the American Orthopaedic Foot & Ankle Society (AOFAS) ankle score and the Visual Analogue Scale (VAS). Radiological imaging consisted of MRI. The Magnetic Resonance Observation of Cartilage Repair Tissue (MOCART) score was applied.

Results: The AOFAS ankle score improved significantly from a mean of 60 points preoperatively (range, 17-79) to 91 points (range, 70-100) postoperatively ($p< 0.01$). The preoperative pain score averaged a VAS of 5 (range, 2-8), improving to an average of 1.1 (range 0-8) ($p< 0.01$).

The MOCART score for cartilage repair tissue on postoperative MRI averaged 71 points (range, 50-90).

Conclusion: The AMIC-procedure is safe for the treatment of OCLT with overall good clinical and magnetic resonance imaging results at five years follow up.

FP2
Biopatch grafting of large or recalcatrant osteochondral defects of the talus

J. Cruickshank[1], J. Eyre[1]
[1]Mid Yorkshire Hospitals NHS Trust, Wakefield, United Kingdom

Introduction: Large osteochondral defects (OCD) of the talus present a difficult management conundrum. We present a series of Maioregen xenograft patches applied through an open approach, early lessons from the technique and good early outcomes, in patients who are otherwise looking at ankle salvage techniques.

Results: 16 patients underwent open patch procedures, performed by a single surgeon, over a 30 month period. 12 males, and 4 females with age at presentation from 21-48. The majority were young, male, in physical employment with active sporting interest.

MoxFQ, and E5QD were collected preop, 3, 6, 12 month postoperatively.

There were significant improvements in ROM, pain, and scores in the cohort.

3 cases returned to Theatre, 1 for a concern about late infection, which settled with good outcome, and a further 2 with metalwork / adhesions.

Conclusion: Early results suggest that this patch technique may be useful in prolonging the longevity of the TTJ, where micro fracture has failed, or the lesion is so large that it would likely be futile.

Patients rescoped demonstrated good integration of the patch material, with stability and functional improvement.

There may be a place for this technique in the management of large lesions, particularly in young patients where preservation is desired over joint salvage.

FP3

The arthroscopic management of talar body fractures

L. Cannon[1]
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Talar body fractures are high energy intraarticular injuries that are best management by anatomical reduction and secure fixation to improve outcomes. The talus is relatively inaccessible surgically and requires extensive soft tissue dissection and/or osteotomies to gain adequate open visualisation.There are a small number of case reports on arthroscopic assisted fixation in the literature. This case series reports on the technique and early outcomes of six patients all of whom presented with significant intraarticular displacement and who were managed entirely arthroscopically. The fractures were of the main body of the talus involving the ankle and subtalar joints and all had preoperative CT scans. All six patients underwent posterior ankle and subtalar arthroscopy with cannulated screws used to stabilise the fractures after reduction. Visualisation of the fracture reduction was excellent. After 10 days in a backslab, the patients were protected in a boot and encouraged to actively move their ankles. Weight bearing was permitted once union appeared complete. There were no early complications of infection, avascular necrosis or VTE. There was one patient that had a non-clinically significant migration of a screw. Two patients were lost to follow up early due to being visitors. The mean length of follow up was 12 months in the remainder. The remaining four patients all returned to their preoperative level of activity. All had demonstrable subtalar stiffness. There was no early post-traumatic arthritis. This series represents the largest so far published. The main flaw in this report is the lack of long term follow up. While this report cannot state superiority over open techniques it is a safe, effective and acceptable technique that has significant conceptual benefits.

FP4

Short term outcome of complex revision total ankle arthroplasty

T. Nurm[1], J. Ramaskandhan[1], A. Nicolas[1], M. Siddique[1]
[1]Freeman Hospital, Newcastle upon Tyne, United Kingdom

Introduction: Total ankle arthroplasty (TAA) is an increasingly popular treatment option for patients with end-stage ankle arthritis. However, for most implant systems, failure rates of 10-20% have been reported within the first 10 years after primary TAA. Pain is the primary symptom that indicates failure of TAA but cause of it can be difficult to establish.

Methods: All patients who underwent a primary TAA at our center were included in the study. The clinical outcomes were studied for patients requiring a further revision procedure following primary TAA. The reasons for revision surgery and outcomes of surgery were analyzed using appropriate inferential statistical tests.

Results: Between 2007 and 2018, 42 primary TAA required revisions in 40 patients. There were 25 men (59.5%) and 15 women (35.7%) with mean age of 57.5 years the time of primary TAA. All patients had undergone primary procedure at a mean duration of 3.5 years previously (range: 3 months to 10 years). Of the total revision procedures, 12/40 (30%) of revisions were carried out due to malalignment, 10/42 (23.8%) due to loosening of the implants or bone subsidence, 5/42 procedures (11.9%) following infection, 4/42 (9.5%) due to polyethylene migration, 1/42 (2.3%) due to fracture and 1/42 (2.3%) due to Charcot arthropathy. In 9/42 (21.4%) cases, imaging showed no objective reason for pain. 50% of patients who underwent revision TAA reported 78.5% satisfaction with results of surgery at 2 years follow up post-operatively.

Conclusion: Major reasons for revising primary TAR at our centre are mal-alignment, implant loosening / bone subsidence and suspicion of infection and pain. In-spite of undergoing a complex revision surgery, patients report 78.5% satisfaction from outcomes of surgery.

FP5

Outcomes of revision total ankle replacement- A minimum of 2 year follow up

A. Pujol Nicolas[1], J. Ramaskandhan[1], T. Nurm[1], M. Siddique[1]
[1]Freeman Hospital, The Newcastle upont Tyne NHS Foundation Trust, Foot and Ankle Department, Newcastle upon Tyne, United Kingdom

Introduction: Total ankle replacement as a valid treatment for end stage ankle arthritis, is gaining popularity and every year there is an increasing number of procedures. With revision rates as high as 21% at 5 years and 43% at 10 years there is a need for understanding and reporting the outcome of revision ankle replacement. Our aim was to study the patient reported outcomes following revision TAR with a minimum of 2 year follow up.

Methods: All patients that underwent a revision total ankle replacement between 2012 and 2016 were included in the study. All patients received a post-operative questionnaire comprising of MOX-FQ score, EQ-5D (UK) and Foot and Ankle outcomes scores (FAOS) and patients satisfaction questionnaire with a minimum of 2 years follow up.

Results: 33 patients had a revision total ankle replacement between 2012 and 2016. 2 patients were deceased therefore 31 patients were included in the study. 4 patients declined participation for completing questionnaires. We received 15/27 (55.5%) completed questionnaires. The mean MOX-FQ average domain score for pain was (50.6 ± 26.9), walking/standing (62.4 ± 36.5) and social function was (43.7± 31.0). The mean FAOS scores were (52.5 ± 30.6; pain) , (54.5 ± 29.2 ; symptoms), (62.1 ± 30.5; ADL) and (35.5 ± 28.2; for quality of life). The mean overall health score today for EQ-5D was 73.9/100. 50% of patients were satisfied with the pain relief and return to sports and recreation obtained following the operation, 57% were satisfied with the improved in daily activities. 78.5% were overall satisfied with the results from surgery.

Conclusion: Revision total ankle replacement gives overall satisfactory results demonstrated from patients reported outcomes at a minimum of 2 years following surgery.

FP6

Isolated ankle fusion for failed total ankle replacement using a spine cage and anterior plating construct

D. Miller[1], S. Senthi[1], I. Winson[1]
[1]AOC Southmead Hospital, Bristol, United Kingdom

Background: Total ankle replacements (TARs) are becoming increasingly more common in the treatment of end stage ankle arthritis. As a consequence, more patients are presenting with the complex situation of the failing TAR. The aim of this study was to present our case series of isolated ankle fusions post failed TAR using a spinal cage construct and anterior plating technique.

Methods: A retrospective review of prospectively collected data was performed for 6 patients that had isolated ankle fusions performed for failed TAR. These were performed by a single surgeon (IW) between March 2012 and October 2014. The procedure was performed using a Spinal Cage construct and grafting in the joint defect and anterior plating. Our primary outcome measure was clinical and radiographic union at 1 year. Union was defined as clinical union and no evidence of radiographic hardware loosening or persistent joint lucent line at 1 year.

Results: The mean follow-up was 37.3 months (SD 13.2). Union was achieved in 5 of the 6 patients (83%). One patient had a non-union that required revision fusion incorporating the talonavicular joint that successfully went on to unite across both joints. Another patient had radiographic features of non-union but was clinically united and asymptomatic and one required revision surgery for a bulky symptomatic lateral malleolus with fused ankle joint.

Conclusion: The failing TAR presents a complex clinical situation. After removal of the implant there is often a large defect which if compressed leads to a leg length discrepancy and if filled with augment can increase the risk of non-union. Multiple methods have been described for revision, with many advocating fusion of both the ankle joint and subtalar joint. We present our case series using a spinal cage and anterior plating that allows preservation of the subtalar joint and a high rate of union.

FP7

All component revision for failed total ankle arthroplasty - Early results and complications

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[2]Glasgow Royal Infirmary, Trauma and Orthopaedics, Glasgow, United Kingdom

Aim: Surgical options for management of a failed ankle arthroplasty are currently limited; typically conversion to fusion is recommended with only a few patients being considered for revision replacement surgery. This paper presents our experience of revision ankle replacements in a cohort of patients with failed primary replacements.

Method: A total of 18 revision TAR in 17 patients were performed in patients with aseptic loosening. The technique was performed by a single surgeon (CSK) over a 4 year period between July 2014 and August 2018 using the Inbone total ankle replacement system. Patient demographics and clinical outcomes were collected retrospectively using - MOXFQ, EQ5D, VAS pain score and patient satisfaction questionnaires.

Results: 12 right and 6 left ankle replacements were revised in 17 patients (11 male/ 6 female). The mean age at revision was 69.1 years (range 56-81 years) with a mean BMI of 31. The mean surgical time was 171 minutes with 22% of cases requiring bone grafting. 6 patients had early wound complications, all superficial and settled with dressings. There were no deep infections, 2 patients had further surgery for exploration for possible nerve injuries. At a mean follow up of 20.6 months, 4 patients had mild/moderate ongoing pain with the majority of patients being satisfied with the outcome of their surgery.

Conclusion: This study represents one of the largest group of patients reported to have undergone revision total ankle arthroplasty. Our experience shows that this results in acceptable level of complications and provides satisfactory function in most patients. We feel revision TAR is a viable option in patients with failed primary arthroplasty who wish to continue to maintain mobility at the ankle joint.

FP8

Outcome of trans-metatarsal amputations in patients with diabetes mellitus. A multi-disciplinary foot care service approach

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Aim: This retrospective case series reports the reoperation, major amputation, survival rates and mobility status in diabetic patients who underwent a trans-metatarsal amputation (TMA) managed within a multi-disciplinary diabetic foot care service.

Methods and patients: Forty-one consecutive patients (37 men, 4 women) underwent a TMA between January 2008 to December 2017. They were retrospectively reviewed. The mean age at the time of surgery was 63 years (range 39 - 92).

Results: Eighty-eight per cent (36/41) of the patients were followed-up. Four (11%) of the 36 patients required reoperation, including three major amputations (8%). All the patients requiring a reoperation were vasculopaths. The four-year patient survival rate following a TMA was 69% (25/36). Ninety-six per cent (21/22) of the surviving patients not requiring revision to a major amputation were fully mobile in bespoke orthoses, of whom a third required a stick.

Conclusion: This study shows that transmetatarsal amputation in patients with diabetes, managed in a multi-disciplinary diabetic foot care service, is effective for limb salvage.

FP9

Frequency of venous thrombo-embolism in patients with total contact cast

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[1]Arrowe Park Hospital, Trauma & Orthopaedics, Wirral, United Kingdom,
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Background: Venous Thrombo-Embolism is a recognized complication of lower limb immobilization. In the neuropathic patient total contact casting (TCC) is used in the management of acute charcot neuroathropathy and/or to off-load neuropathic ulcers, frequently for long time periods. To our knowledge there is no literature stating the prevalence of VTE in patients undergoing TCC. We perceive that neuropathic patients with active charcot have other risk factors for VTE which would predispose them to this condition and would mandate the use of prophylaxis. We report a retrospective case series assessing the prevalence of VTE in the patients being treated with TCCs.

Methods: Patients undergoing TCC between 2006 and 2018 were identified using plaster room records. These patients subsequently had clinical letters and radiological reports assessed for details around the TCC episode, past medical history and any VTE events.

Results: There were 143 TCC episodes in 104 patients. Average age at cast application was 55 years. Time in cast averaged 45 days (range 5 days - 8 months, median 35 days). 3 out of 4 patients had neuropathy as a consequence of diabetes. One TCC related VTE (0.7% of casting episodes) was documented. This was a proximal DVT confirmed on USS 9 days following cast removal. No patient received VTE prophylaxis while in TCC.

Conclusion: Despite these complex patients having a multitude of co-morbidities the prevalence of VTE in the TCC setting remains similar to that of the general population. This may be due to the fact that TCCs permit weight bearing. This case series suggests that, while all patients should be individually VTE risk assessed as for any lower limb immobilization, chemical thromboprophylaxis is not routinely indicated in the context of TCCs.

Free Papers 2
Thursday, 8th November 2018

FP10

Classification of Freiberg´s disease - A guide for management

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Introduction: The current treatment for Freiberg's osteochondrosis centres around either: simple debridement or debridement osteotomy. The main principle of the osteotomy is to rotate normal articular cartilage into the affected area. We recommend the use of CT scanning to delineate the amount of available, unaffected cartilage available to rotate into the affected space.

Methods: We retrospectively reviewed 32 CT scans of new Freiberg's diagnoses in Sheffield over a 10 year period using the PACS system. We identified the sagittal CT slice that displayed the widest portion of proximal articular margin of the proximal phalanx and measured the diseased segment of the corresponding metatarsal head as an arc (in degrees). This arc segment was divided by 360°. This gave a ratio of the affected arc in the sagittal plane.

Results: 28 out of 32 cases involved the 2nd metatarsal with the remaining 4 involving the 3rd metatarsal head. Of 32 cases, 18 had fragmentation. Surgically, 20 had debridement only, 5 also had an osteotomy and 1 had a fusion. 6 of the 32 cases were managed non-operatively. 11 cases out of 32 had an arc ratio of < 0.3. Of these, only 3 had an osteotomy, 3 had no procedure and 5 had a simple debridement. Of those that had osteotomies (5/32), 3 of the 5 cases had an arc ratio of < 0.3 with the other 2 being 0.42 and 0.38.

Discussion: We hypothesise that those cases with an arc ratio of less 0.3 would be amenable to a dorsal closing wedge osteotomy and those with a ratio of more than 0.4 would be better suited to a simple debridement. For those cases between 0.3-0.4, we feel either option is viable. Further work to prove or disprove outcomes related to our classification is required.

FP11

Five-year outcomes of a synthetic cartilage implant for the first metatarsophalangeal joint in advanced hallux rigidus

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Introduction/Purpose: A randomized clinical trial of first MTP joint hemiarthroplasty with a synthetic cartilage implant demonstrated equivalent pain, function and safety outcomes to first MTP joint arthrodesis at 2 years. Recognizing that many hemiarthroplasty and total toe implants have initially good results that deteriorate over time, the purpose of this study was to prospectively assess the safety and efficacy outcomes for the synthetic cartilage implant population and to determine if the excellent outcomes were maintained at >5 years.

Methods: One hundred nineteen patients were evaluated at 5+ years; 23 could not be reached for follow-up, but implant status was available for 7 of these subjects. Patients completed a pain visual analogue scale (VAS) and Foot and Ankle Ability Measure (FAAM) Sports and Activities of Daily Living (ADL) scores, preoperatively and at 2, 6, 12, 26, 52, 104 and 260 weeks postoperatively. Minimal clinically important differences are: ≥30% difference for pain VAS, 9 points for FAAM Sports, and 8 points for FAAM ADL. Great toe active dorsiflexion, weight-bearing radiographs, secondary procedures, and safety parameters were evaluated.

Results: Of 119 patients available at mean 5.8 years follow-up (SD ±0.7; range: 4.4-8.0), 9 underwent implant removal and conversion to fusion in years 2-5, leaving 106 patients. The implant survival rate was 92.4% at 5.8 years. Pain and function outcomes at 5.8 years were similar to those at 2 years. VAS Pain, FAAM Sports, ADL Scores were maintained or improved at 5.8 years. No evidence of avascular necrosis, device migration or fragmentation was observed. There were no unanticipated safety events through 5.8 years. Ninety-three (93%) percent would have the procedure again.

Conclusion: The synthetic cartilage hemiarthroplasty implant continues to demonstrate safety and efficacy for the treatment of advanced first MTP joint osteoarthritis with evidence of therapeutic effect and acceptable safety profile at 5.8 years.

FP12

The role of the lateral ankle complex in controlling laxity of the ankle joint: A biomechanical investigation

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Background: Lateral ankle instability is a common problem, but the precise role of the lateral ankle structures has not been accurately investigated. This study aimed to accurately investigate lateral ankle complex stability for the first time using a novel robotic testing platform.

Method: A six degrees of freedom robot manipulator and a universal force/torque sensor were used to test 10 foot and ankle specimens. The system automatically defined the path of unloaded plantar/dorsi flexion. At four flexion angles: 20° dorsiflexion, neutral flexion, 20° and 40° of plantarflexion; anterior-posterior (90N), internal-external (5Nm) and inversion-eversion (8Nm) laxity were tested. The motion of the intact ankle was recorded first and then replayed following transection of the lateral retinaculum, Anterior Talofibular Ligament (ATFL) and Calcaneofibular Ligament (CFL). The decrease in force/torque reflected the contribution of the structure to restraining laxity. Data were analysed using repeated measures of variance and paired t-tests.

Results: The ATFL was the primary restraint to anterior drawer ($P < 0.01$) and the CFL the primary restraint to inversion throughout range ($P < 0.04$), but with increased plantarflexion the ATFL's contribution increased. The ATFL had a significant role in resisting tibial external rotation, particularly at higher levels of plantarflexion, contributing 63% at 40° ($P < 0.01$). The CFL provided the greatest resistance to external tibial rotation, 22% at 40° plantarflexion ($P < 0.01$). The extensor retinaculum and skin did not offer significant restraint in any direction tested.

Conclusion: This study shows accurately for the first time the significant role the ATFL and CFL have in rotational ankle stability. This significant loss in rotational stability may have implications in the aetiology of osteophyte formation and early degenerative changes in patients with chronic ankle instability. This is the first time the role of the lateral ankle complex has been quantified using a robotic testing platform.

FP13

Do rugby boots with a bladed stud increase contact pressures through the fifth metatarsal compared to a rounded stud? A biomechanical study

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Fifth metatarsal fractures in sport are known to be associated with acceleration and cross cutting movements when running. It is also established that playing surface has an impact on the ground reaction forces through the foot, increasing the strain through the fifth metatarsal. But what impact does boot design have on these forces? Current thought is that boots that utilise a blade stud design resist sideways slipping of the planted foot more than boots with a rounded stud. This study aims to compare ground reaction forces through the fifth metatarsal in 2 two different designs of rugby boot to assess what impact stud design might have. The forces across the foot were measured using Tekscan in-shoe pressure plates in 24 rugby players. Each player was asked to complete an agility course to measure acceleration, cutting and cross-cutting in the two different designs of rugby boot, reproducing true playing conditions. The boots used were the Canterbury Phoenix Club 8 Stud boot and the Canterbury Speed Club Blade boot. The trial was conducted on an 4G artificial pitch at the Cardiff Arms Park rugby ground. Ethical approval was obtained from Bath University and a research grant was provided by British Orthopaedic Foot and Ankle Society. The blade boot had significantly higher contact pressures than the stud boot on the fifth metatarsal in the combined movements (17.909 ± 10.442 N/cm2 Blade Vs 16.888 ± 9.992 N/cm2 Boot; $P < .0125$; $n = 864$ steps in each boot group). The blade boot also produced higher pressure during cross-cutting (32.331 ± 13.568 N/cm2 Vs 27.651 ± 15.194 N/cm2 $p < 0.007$). Pressures were also higher in both acceleration and cutting, although not significantly so. These results will guide clinicians advising athletes in shoe design, especially those predisposed to or rehabilitating from a fifth metatarsal fracture.

FP14

Simulated weight reduction with an anti-gravity treadmill: a pilot study to assess pain reduction in foot and ankle arthritis

W. Morley[1], E. Dawe[2], R. Boyd[1], J. Creasy[1], J. Grice[3], D. Marsland[4], H. Taylor[1]
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Introduction: Osteoarthritis in the foot and ankle affects approximately 30,000 patients annually in the UK. Evidence has shown that excess weight exacerbates foot pain, with significant increases in joint forces. However, despite the current trend for Clinical Commissioning Groups to ration surgery for obese patients, studies have not yet determined the effect of weight loss in obese patients with foot and ankle arthritis.

Aim: Pilot study to investigate the effect of simulated weight loss on pain scores in obese patients with symptomatic foot and ankle arthritis.

Methods: Following ethical approval, a prospective study of 17 obese patients (mean BMI 39.2, range 31.2 - 50.3) with foot and ankle arthritis was undertaken (BOFAS funded). Under physiotherapist supervision, patients walked for one minute on an anti-gravity treadmill, which allowed simulated weight reduction. Following baseline assessment, reduced BMI was simulated, starting at 20, rising in increments of 5, until each patient's usual BMI was reached. Pain was assessed using a Visual Analogue Scale (VAS). Repeated measures ANOVA was used to assess for significant changes in pain, comparing baseline with each simulated BMI category (significance set at $p< 0.05$).

Results: Simulated weight loss caused a significant reduction in pain ($p=0.005$, power 0.91). Mean VAS pain scores improved by 24% ($p=0.003$) and 17% ($p=0.040$) for BMI categories 20 and 25, compared with baseline. Pain scores were not significantly different comparing BMI categories of 25 and 20.

Conclusion: Simulated weight loss to normal BMI significantly decreased pain in obese patients with foot and ankle arthritis. The use of the anti-gravity treadmill to demonstrate the feeling of normal BMI has also provided motivation to several patients to lose weight. The current study could be used to power future studies to investigate the effects of weight loss in foot and ankle patients.

FP15

Multi-center, randomized, controlled study of subtalar arthrodesis using AlloStem versus autologous bone graft

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Introduction: AlloStem/Cellular Bone Allograft and autologous bone graft are accepted methods for managing hindfoot degenerative arthritis. The purpose was to evaluate outcomes of AlloStem and autograft in subtalar arthrodesis and compare overall fusion rates.

Methods: This study was conducted in IRB compliance. Patients between 18-80 years who qualified for a subtalar fusion were randomized 1:1 to AlloStem or autologous graft. The AOFAS hindfoot ankle scale, FFI-R and SF-12 were collected pre-operatively, 6 weeks, 3 & 6 months, 1 and 2 year. Weight-bearing 3-view ankle X-rays were done at the same intervals. A CT scan was obtained at 6 months.

Results: 140 patients were enrolled; 124 patients had surgery(60-AlloStem and 64-Control). Withdrawals included 14 voluntarily before surgery and 2 intra-operative failures. 19 were lost to follow-up. Mean age for AlloStem was 56.69(20.3-79.6) and Autograft was 54.60(20.74-80.07).

59 AlloStem patients completed their 6 month visit and 45 completed 2 years. AOFAS score improved: 40.02 at pre-op to 72.16(6 mo) to 79.51 at 1 year and 80.38 at 2 year. SF-12 improved 58.29 at pre-op to 65.67 at 6 month and 71.59 at 2 year. FFI-R improved 236.88 at pre-op to 203.53 at 6 month 149.93 at 2 year.

60 Autograft patients completed their 6 month visit and 51 patients completed their 2 year. AOFAS score improved 42.89 at pre-op to 75.67 (6 mo) to 79.75 at 1 year and 78.62 at 2 year. Autograft SF-12 improved 60.55 at pre-op to 70.40 at 6 month and 75.26 at 2 year. Autograft FFI-R improved 217.16 at pre-op to 166.77 at 6 month and 145.43 at 2 year.

AlloStem patients had a mean posterior fusion rate of 28.9% at 6 months whereas the Autograft had 46.3%(p=.049). Non-union rates were AlloStem(9/57)(15.7%) whereas Autograft was 3/60(5%).

Conclusion: AlloStem trended to be inferior to Autologous graft.

FP16

High ankle sprains with syndesmosis instability: Time to MRI matters

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Introduction: Early clinical examination combined with MRI following a high ankle sprain allows accurate diagnosis of syndesmosis instability. However, patients often present late, and for chronic injuries clinical assessment is less reliable. Furthermore, in many centres MRI may be not be readily available. The aims of the current study were to define MRI characteristics associated with syndesmosis instability, and to determine whether MRI patterns differed according to time from injury.

Methods: Retrospectively, patients with an unstable ligamentous syndesmosis injury requiring fixation were identified from the logbooks of two fellowship trained foot and ankle surgeons over a five-year period. After exclusion criteria (fibula fracture or absence of an MRI report by a consultant radiologist), 164 patients (mean age 30.7) were available. Associations between MRI characteristics and time to MRI were examined using Pearson's chi-square tests or Fisher's exact tests (significance set at $p< 0.05$).

Results: Overall, 100% of scans detected a syndesmosis injury if performed acutely (within 6 weeks of injury), falling to 83% if performed after 12 weeks ($p=0.001$). In the acute group, 93.5% of patients had evidence of at least one of either PITFL injury (78.7%), posterior malleolus bone oedema (60.2%), or a posterior malleolus fracture (15.7%). In 20% of patients with a posterior malleolus bone bruise or fracture, the PITFL was reported as normal. The incidence of posterior malleolus bone bruising and fracture did not significantly differ according to time.

Conclusion: For unstable ligamentous syndesmosis injuries, MRI becomes less sensitive over time. Importantly, posterior malleolus bone oedema or fracture may be the only evidence of a posterior injury. Failure to recognise instability may lead to inappropriate management of the patient, long term pain and arthritis. We therefore advocate early MRI as it becomes more difficult to 'grade' the injury if delayed.

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FP17
Outcomes of peroneal tendoscopy: The Bristol experience
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Tendoscopy in the treatment of peroneal tendon disorders is becoming an increasingly safe, reliable, and reproducible technique. Peroneal tendoscopy can be used as both an isolated procedure and as an adjacent procedure with other surgical techniques. The aim of our study was to review all peroneal tendoscopy that was undertaken at the AOC, by the senior authors (IGW, SH), and to determine the safety and efficacy of this surgical technique.

Methods: From 2000 to 2017 a manual and electronic database search was undertaken of all procedures by the senior authors. Peroneal tendoscopy cases were identified and then prospectively analysed.

Results: 51 patients (23 male, 28 female) were identified from 2004-2017 using a manual and electronic database search. The mean age at time of surgery was 41.5 years (range 16-83) with a mean follow-up time post operatively of 11.8 months (range 9-64 months). The main indications for surgery were lateral and/or postero-lateral ankle pain and lateral ankle swelling. The majority of cases showed unstable peroneal tendon tears that were debrided safely using tendoscopy. Of the 51 patients, 23 required an adjacent foot and ankle operation at the same time, 5 open and 17 arthroscopic (12 ankle, 5 subtalar). Open procedures included 2 first ray osteotomies, 2 open debridements of accessory tissue, one PL to PB transfer. One patient also had an endoscopic FHL transfer. Complication rates to date have been low: 2 superficial wound infections (4%) and one repeat tendoscopy for ongoing pain. A small proportion of patients with ongoing pain were treated with USS guided steroid injections with good results.

Conclusion: Our series of peroneal tendoscopy has a low complication rate with high patient satisfaction at discharge. Results of tendoscopic treatment are similar to open techniques, however its advantages make tendoscopic procedures an excellent method to treat peroneal tendon disorders.

FP18
Platelet rich plasma for acute achilles tendon rupture: Results of the PATH-2 study, a double-blind multicentre randomised placebo-controlled trial
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Background: Disability and slow return to sport and work after tendon rupture are major challenges. Platelet Rich Plasma (PRP) is an autologous supraphysiological concentration of platelets from whole blood that has demonstrated positive cellular and physiological effects on healing in laboratory conditions but evidence from adequately powered robust clinical trials is lacking. We aimed to determine the clinical efficacy of PRP for treatment of acute Achilles tendon rupture.

Methods: In a placebo-controlled, participant- and assessor-blinded, trial at 19 NHS hospitals we randomly assigned 230 adults starting acute Achilles rupture non-surgical management to PRP injection or dry-needle insertion (placebo) to the rupture gap under local anaesthetic. Patients with confounding or contraindicated concurrent medical conditions were excluded. The primary outcome was muscle-tendon function, assessed by the limb symmetry index (LSI, uninjured limb/injured limb x 100, higher scores better) of the work (Joules) performed during the heel-rise endurance test at 24 weeks. Secondary outcomes were: Achilles Tendon Rupture Score (ATRS, 0-100, higher scores better), quality of life (SF-12), pain, and goal attainment. Trial registration: ISRCTN54992179

Results: Participants were aged mean 46 years and 57 (25%) were female. 103/114 (90%) of the PRP group and all (n=116) in the placebo group received allocated treatment. At 24 weeks, mean LSI was 34.4 for the PRP group and 38.8 for placebo (adjusted mean difference -4.4 95% CI -11.2 to 2.5, n=201) and ATRS was mean 65.2 PRP vs 65.8 (adjusted mean difference -0.6, 95% CI -4.9 to 3.7, n=224). There were no differences between groups in the other secondary outcomes.

Conclusion: We found no evidence of PRP efficacy for improving muscle-tendon function or patient-reported recovery after acute Achilles tendon rupture. Our findings challenge the increasing global use of PRP for acute tendon injury and indicate that robust evaluations are required in other applications.

FP19

Treatment of pediatric arthrogrypotic clubfoot. 20 years of clinical experience

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Background: Treatment of arthrogrypotic clubfoot (AC) presents a challenging problem. Over time many different methods have been proposed, with variable rates of success, recurrence and other complications. In this study we describe our 20-year experience in treatment of AC.

Materials and methods: Between 1996 and 2016, 165 AC in 90 children (51 males and 39 females) were treated in our department. Their mean age was 7.6 years (3 months-16 years). Ponseti casting and Achilles tendon release (PCATR) was performed on 38 children (68 feet) and soft tissue release and casting (STRC) on 35 children (67 feet). The remaining 17 children (30 feet) underwent wide soft tissue release and correction using the Ilizarov method (STRIL). The results of each subgroup were graded according to clinical (pain, foot appearance, residual deformities, walking and standing status and shoe modifications) and radiological (anteroposterior and lateral talocalcanear angles, the angle between longitudinal axes of talus and the first metatarsal and the position of talus in the lateral view) criteria.

Results: The average follow up was 6.4 (2-10) years. Results were excellent (plantigrade, painless, properly loaded feet, without deformities, adapted to common shoes) in 56 PCATR group feet, 59 STRC group feet and 23 STRIL group feet. Good results (required orthopaedic shoes) were obtained in 10 PCATR group feet, 6 STRC group feet and 7 STRIL group feet. Fair results (residual temporary pain and/or mild deformity) presented 2 PCATR group feet and 1 STRC group foot, while bad results (reoccurrence of clubfoot) were found in 1 STRC group foot.

Conclusions: On the basis of our 20-year clinical experience we believe that pediatric AC can be successfully treated with PCATR in the age of less than 1 year old (y.o), with STRC between 1-5 y.o. and with STRIL in children over the age of 5 y.o.

FP20

Ankle fracture fixation in over 60's: Fibular-pro-tibia V's hindfoot nailing

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Introduction: Ankle fractures in the elderly are an increasing problem with our aging population. Options for treatment include non-operative and operative with a range of techniques available. Failure of treatment can lead to significant complications, morbidity and poor function. We compared the outcomes of two operative techniques, intramedullary hindfoot nailing (IMN) and fibular-pro-tibia fixation (FPT). This is the largest analysis of these techniques and there are no comparative studies published.

Method: We retrospectively reviewed patients over the age of 60 with ankle fractures who were treated operatively between 2012 and 2017. We identified 1417 cases, including 27 patients treated with IMN and 41 treated with FPT. Age, sex, co-morbidities and injury pattern were collected. Primary outcome was re-operation rate. Secondary outcomes included other complications, length of stay and functional status.

Results: The IMN group had a higher average co-morbidity score compared with the FPT group (estimated 10-year survival, 21% vs 53%, $p=0.03$). Re-operation rate was higher in the IMN group compared with FPT (12 v 1, $p< 0.0001$). There were more complications in the IMN group compared with the FPT group (23 v 11, $p< 0.0001$). Length of stay was longer in the IMN group (17 v 29 days, $p=0.02$). Mobility tended to return to baseline in the FPT patients but decreased in the IMN patients.

Conclusion: Outcomes were worse in the IMN group compared with the FPT group in terms of re-operation, complications and length of stay. However, the IMN group tended to have increased comorbidities and poorer soft tissues.

We believe that both techniques have a role in the management of elderly ankle fractures, but patient selection is key. We suggest FPT should be the first-choice technique when soft tissues permit. We discuss the indications, risks and benefits of each method based on our experience and literature review.

FP21

The natural history of undisplaced Lisfranc-type injuries initially treated conservatively

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Background: Undisplaced Lisfranc-type injuries are subtle but potentially unstable fracture-dislocations with little known about the natural history. These injuries are often initially managed conservatively due to lack of initial displacement and uncertainty regarding subsequent instability at the tarsometatarsal joints (TMTJ). The aim of this study was to determine the secondary displacement rate and the need for delayed operative intervention in undisplaced Lisfranc injuries that were managed conservatively at initial presentation.

Methods: Over a 6-year period (2011 to 2017), we identified 24 consecutive patients presenting to a university teaching hospital with a diagnosis of an undisplaced Lisfranc-type injury that was initially managed conservatively. Pre-operative radiographs were reviewed to confirm the undisplaced nature of the injury (defined as a diastasis< 2mm at the second TMTJ). The presence of a 'fleck' sign (small bony avulsion of the second metatarsal) was also noted. Electronic patient records and sequential imaging (plain radiographs/CT/MRI) were scrutinized for demographics, mechanism of injury and eventual outcome.

Results: The mean age of the patients at the time of injury was 42 years (19 Female). 96% (23/24) were low energy injuries and 88% (21/24) had a positive 'fleck sign'. The secondary displacement rate in this group of patients was 62.5% (15/24) over a median interval of 14 days (range 0 to 482 days). 12 patients underwent open reduction internal fixation after a median interval of 29 days (range 1 to 294 days) from their initial injury. One patient required TMTJ fusion at 19 months and two patients were managed non-operatively. The injury remained undisplaced in 37.5% patients (9/24) with only one patient requiring subsequent TMTJ fusion at 5 months.

Conclusion: Undisplaced Lisfranc injuries have a high rate of secondary displacement and warrant close follow-up. Early primary stabilisation of undisplaced Lisfranc injuries should be considered to prevent unnecessary delays in surgical treatment.

FP22

Case comparison study of two surgical approaches for fixation of calcaneal fractures

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Background: Traditionally, the extended lateral approach (ELA) was the favoured approach for calcaneal fractures, but has been reported to have high incidence of wound complications. There has been a move amongst surgeons in the United Kingdom towards the sinus tarsi approach (STA) due to its minimally invasive nature, attempting to reduce such complications.

Aims: To evaluate outcomes of ELA and STA for all consecutive calcaneal fracture fixation in our institution over a 10yr period.

Method: Retrospective cohort study of all calcaneal fractures surgically treated with either approach between January 2008 and January 2018. Anatomic restoration was assessed radiologically by the change in Gissane's and Bohler's angles and calcaneal width. Post-operative complications including metalwork removal were recorded.

Results: 35 calcaneal fractures were managed surgically via either approach during this period (21 STA and 14 ELA). There was a statistically significant improvement in the radiological makers when the post-operative films were compared to pre-operative ones. When the post-operative films from the 2 groups were compared against each other, there was no significant difference ($p< 0.05$) in any of the radiological markers. In the ELA group, 2 patients (14.3%) developed deep infections requiring metalwork removal and 1 had delayed wound healing (7.1%). No deep infections occurred with the STA; 1 patient (4.8%) had a superficial infection, treated with antibiotics. Of patients who had metalwork in situ for more than 1 year, 37.5% of the STA group required removal due to pain compared to only 16.7% with ELA.

Conclusions: We have moved from ELA to STA. Our results have shown no difference in restoration of calcaneal anatomy but with a decrease in post-operative wound complications including infection. However, we have shown an increase in metalware removal in the STA group and it is important to ascertain the cause and significance of this.

FP23

Anatomy of the insertion of the posterior inferior tibiofibular ligament and its relevance to posterior malleolar rotational pilon fractures

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Introduction: The treatment of posterior malleolar fractures is developing. Mason and Molloy (Foot Ankle Int. 2017 Nov;38(11):1229-1235) identified only 49% of posterior malleolar rotational pilon type fractures had syndesmotic instabilities. This was against general thinking that fixation of such a fragment would stabilize the syndesmosis.

Methods: We examined 10 cadaveric lower limbs that had been preserved for dissection at the Human Anatomy and Resource Centre at Liverpool University in a solution of formaldehyde. The lower limbs were carefully dissected to identify the ligamentous structures on the posterior aspect of the ankle. To compare the size to the rotational pilon posterior malleolar fracture (Mason and Molloy 2A and B) we gathered information from our posterior malleolar fracture database. 3D CT imaging was analysed using our department PACS system.

Results: The PITFL insertion on the posterior aspect of the tibia is very large. The average size of insertion was 54.9x47.1mm across the posterior aspect of the tibia. Medially the PITFL blends into the sheath of tibialis posterior and laterally into the peroneal tendon sheath.

78 posterior lateral and 35 posterior medial fragments were measured. On average, the lateral to medial size of the posteromalleolar fragment was 24.5mm in the posterolateral fragment, and 43mm if there is a posteromedial fragment present also. The average distal to proximal size of the posterolateral fragment was 24.5mm and 18.5mm for the posteromedial fragment.

Conclusion: The PITFL insertion on the tibia is broad. In comparison to the average size of the posterior malleolar fragments, the PITFL insertion is significantly bigger. Therefore, for a posterior malleolar fracture to cause posterior syndesmotic instability, a ligamentous injury will also have to occur. This explains the finding by Mason and Molloy that only 49% of type 2 injuries had a syndesmotic injury on testing.

FP24

Muller-Weiss disease; proposed classification and treatment algorithm

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Muller-Weiss disease is an uncommon condition with unclear etiology and no gold standard treatment. The question arises; which joints to fuse? Although no consensuses prevail, one must postulate fusion should include those affected. Consequently, to establish an algorithm for its surgical management we set out to study clinical and radiographic features with use of SPECT-CT and a literature review.

57 consecutive feet presenting with Muller-Weiss disease analysed; 15 men, 25 women, age 22-84. Condition bilateral in 17, left side 16, right in 7 patients. Specific history and examination by senior author. Radiographic series and SPECT-CT obtained with surgery performed on significantly symptomatic feet. Measurements of Meary-Tomeno angles, anteroposterior thickness of navicular at the midpoint of each naviculo-cuneiform, alongside the medial extrusion distance and percentage of compression in each case performed.

Poor correlation between Meary's angle and 1) degree of compression at naviculo-cuneiform joints, 2) degree of extrusion 3) compression vs extrusion using R2 coefficient of determination (invalidating Maceira et al. classification). In unilateral cases, extrusion significantly greater on affected side 94.7% ($P< 0.001$ Fisher exact test). Degree of extrusion significantly greater in bilateral than unilateral cases ($p=0.004$ unpaired T test). Valgus hindfoot and Meary's negative most common pattern with no correlation between heel alignment and Meary's $R2 = 0.003$. SPECT-CT useful to determine subtalar involvement in 'stage 2 disease.'

Following review of cases and published literature we propose the following classification for Muller-Weiss disease with treatment algorithm. 3 Stage delineation;

Stage 1 (Normal hindfoot alignment);

1A. Talonavicular disease only - Isolated Talonavicular arthrodesis
1B. Talonavicular + Subtalar; double medial or triple arthrodesis.

Stage 2. Talonavicular + Naviculocuneiform;

2A. Adequate bone stock - Talo-naviculo-cuneiform arthrodesis,
2B. Inadequate bone stock +- subtalar disease; Talo-naviculo-cuneiform arthrodesis with tricortical bone graft (Mayich).

Stage 3; Asymmetric ankle varus.

Pantalar arthrodesis
Double/triple/TNC/TAR arthrodesis with hindfoot re-alignment.

FP25

Arthroscopic arthrodesis of the isolated talo-navicular joint

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Background: Whereas arthroscopic arthrodesis of the ankle is commonplace and of the subtalar joint is established, reports of arthroscopic talo-navicular fusion are a rarity.

Aim: To review a case series to establish if arthroscopic talo-navicular arthrodesis is a feasible surgical option.

Methods: Arthroscopic decortication of the talo-navicular joint is performed via x1-2 sinus tarsi portals and x1-2 accessory talo-navicular portals using a standard arthroscope and a 4.5 barrel burr. Internal fixation is by a 5mm screw from the navicular tuberosity and x2 headless compression screws introduced under image intensification from the dorsal navicular to the talar head.

Between 2004 and 2017 a consecutive series of 164 patients underwent arthroscopic hindfoot arthrodeses of which 72 involved the talo-navicular joint. Only 13 procedures were of that joint alone in unsullied feet. The medical records of these 13 patients were reviewed to assess radiological fusion, complications and improvement of pre-operative state.

Results: All Talo-navicular joints were successfully decorticated. All united radiologically by a mean 4.4 months (range 3-8). There were no major complications. All patients reported improvement to their pre-operative symptoms but one patient developed lateral column pain requiring fusion.

Conclusions: Arthroscopic Talo-navicular arthrodesis is technically feasible with good rates of union. Complications were rare, making the technique attractive when encountering a poor soft tissue envelope. The surgery cannot be used if bone grafting is required. Long term discomfort can arise from adjacent joints. Accurate alignment is critical.

POSTERS
ABSTRACT SUMMARY

P1

Minimally invasive distal metaphyseal metatarsal osteotomy (DMMO) for symptomatic forefoot pathology - Short to medium term outcomes from a retrospective case series

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P2

New model foot and ankle service pathway - pilot results 2 years

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P3

MIS distal metatarsal metaphyseal osteotomy in the treatment of metatarsalgia: MOXFQ patient reported outcomes

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P4

The use of Percutaneous screw fixation without fracture site preparation in the treatment of 5th metatarsal base non-union

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P5

Evaluating the weight bearing status of stable Weber B ankle fractures

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P6

Stabilisation of the ankle syndesmosis using the internal brace (Arthrex) - early results

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P7

Are all Weber A ankle fractures benign?

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P8

Anatomy of the lateral plantar ligaments of the transverse metatarsal arch: The lateral lisfranc ligament

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P9

Calcaneal fracture epidemiology and fixation trends in England, 2000 to 2017

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P10

Clinical and patient reported outcomes following low intensity pulsed ultrasound (Exogen) for established post-traumatic and post-surgical non-union in the foot and ankle

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P11

Tibiotalar arthrodesis - Is union rate and time to union influenced by preoperative deformity, patient related factors or open/arthroscopic procedure and what do patients percieve?

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P12

FORFoot: Forefoot offloading shoes vs rigid flat shoes in patients undergoing surgery of the first ray: A randomised controlled trial of clinical and radiological outcomes

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P13

Early results of Complete Cartilage Regeneration (CCR) technique for Talar Osteo-Chondral defects (OCD)

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P14

Is operative treatment of delayed Achilles tendon rupture presentation essential? Mid and long-term follow-up of conservatively treated patients

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P15

Identification of stable supination external rotation ankle fractures - A consensus opinion

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P16

An investigation of the damage to flexor tendons incurred by different minimally invasive proximal phalangeal closing wedge osteotomy surgical techniques in cadaveric feet

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P17

A prospective study of 493 Ankle Fractures in a UK trauma unit: What lessons can be learnt?

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P18

The incidence of gissane angle impingement and accessory anterolateral facet of the talus in adult acquired flat foot: the need for an increased awareness of non-arthritic lateral hindfoot pain

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P19

Posterior approaches to the ankle - An analysis of 3 approaches for access to the posterior distal tibia

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P20

Prolotherapy as a treatment choice for ATFL injuries in elite athletes: A case series

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ABSTRACT DETAILED

P1

Minimally invasive distal metaphyseal metatarsal osteotomy (DMMO) for symptomatic forefoot pathology - Short to medium term outcomes from a retrospective case series

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Introduction: Distal metaphyseal metatarsal osteotomy (DMMO) may be used to treat metatarsalgia and other forefoot pathology by shortening the lesser metatarsals and reducing plantar pressures. It may be performed percutaneously, but there are few large series reporting its results. We report the radiographic and clinical results of a cohort of patients treated with percutaneous DMMOs at our unit.

Methods: This was a single-centre retrospective study looking at the outcome of consecutive patients undergoing percutaneous DMMOs over a 52-month period at our District General Hospital. We analysed demographics, radiological and clinical outcomes, complications and patient reported outcome measures.

Results: We included DMMOs on 106 toes in 43 feet. The mean age of patients was 60.2 ±10.2 years and 41 patients were female (95.3%). The median duration of follow-up was 38 months. The indication was metatarsalgia in 31 patients (72.1%) and MTPJ subluxation in 12 patients (27.9%). Concurrent procedures were performed in 26 cases (60.5%). DMMO was performed on multiple toes in 42 cases (96.7%). Mean shortening achieved was 3.6 ±2.2 mm, 4.1 ±1.6 mm, and 3.6 ±1.6 mm for the 2nd, 3rd and 4th toes respectively. Mean time to fusion was 11.4 ±7.8 weeks and union occurred in 105 toes (99.1%). The single non-union was asymptomatic at 12 months. Two patients (4.7%) required a subsequent additional DMMO for transfer metatarsalgia. Overall, minor complications were seen in 14 patients (31.1%). At final follow-up the mean MOxFQ was 28.8 ±27.6, the mean EQ-5D was 0.789 ±0.225, the mean EQ-VAS was 68.5 ±20.3, the mean VAS-Pain was 3.1 ±2.8, and 41 patients (95.3%) were satisfied overall.

Conclusions: We have demonstrated excellent radiological and clinical outcomes, with relatively few complications in the short to medium term with percutaneous DMMOs.

P2

New model foot and ankle service pathway - pilot results 2 years

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Introduction: The foot and ankle services at NUTH incorporates both elective and trauma services.The elective service carries out on average 10,500- 11,000 review appointments/ year and 4000-4500 new patient appointments/year .The waiting times for new out-patient appointments were 8-14 weeks. A new pathway was designed with the aim to improve 18 week national target compliance, improve departmental efficiency, and improve patient satisfaction.

Method: A new initial assessment clinic pathways was designed were all new patients are seen in a one hour slot one stop clinic by a dedicated Extended Scope Practitioner. History and clinical examination are taken as well as initial Proms questionnaire, x-ray assessment followed by gate analysis including pain map, treadmill assessment and plantar pressure analysis. A consultant led MDT review of the finding is performed the same week where plan for treatment or further investigations is formulated.

Results: A total of 1792 patients had the initial assessment through the new clinic pathway between March 2016 and March 2018. The average waiting time for the initial assessment has been gradually reduced from 14 to 3 weeks. We obtained over 96% patient satisfaction in enhancing patient experience.

Conclusion: Our new clinic model has shown to improve efficiency, patient satisfaction and reduce waiting times.

Notes:

P3

MIS distal metatarsal metaphyseal osteotomy in the treatment of metatarsalgia: MOXFQ patient reported outcomes

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Aim: The aim of this paper is to present validated patient reported outcomes for MIS Distal Metatarsal Metaphyseal Osteotomy (DMMO) in the treatment of metatarsalgia. We aim to evaluate the DMMO procedure, report patient satisfaction with the operated foot and report any complications of this procedure.

Patients and methods: Between 2014 and 2016, patients who had failed conservative treatment for metatarsalgia were identified in the orthopaedic outpatient clinic. 24 consecutive patients requiring DMMO plus/minus toe straightening were prospectively studied. Patients requiring additional procedures at the time of surgery were excluded. Patients completed the validated Manchester-Oxford Foot Questionnaire (MOXFQ) three weeks pre-operatively and 1 year post-operatively. The MOXFQ results were analysed using paired t-tests. A supplementary question was asked regarding patient satisfaction with the operated foot.

Results: There were 20 women and 4 men with a mean age at the time of surgery of 64 years (sd 8.6). Statistically significant differences were found between the pre and post-operative MOXFQ. The post operative MOXFQ score demonstrated a poorer result for two patients, no change for two patients and improvement in 20 patients, with four of these patients recording the lowest possible score. There was a 29.5 point improvement in mean metric MOXFQ Index score. 79% (n=19) of patients were satisfied or very satisfied with the operated foot. The reported post operative complications experienced were a gastric bleed, pulmonary embolism (VTE), two delayed union, and one broken burr occurring intra operatively.

Conclusion: Our study demonstrates a statistically significant and clinically important improvement in patient reported outcomes following DMMO and good to excellent satisfaction with the procedure. We report two patients with delayed union and no non-unions which is comparable to other lesser metatarsal osteotomy procedures.

P4

The use of Percutaneous screw fixation without fracture site preparation in the treatment of 5th metatarsal base non-union

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Introduction: Non-union following a proximal fifth metatarsal can cause considerable pain with high morbidity with loss of work. Although many authors advocate early surgical management of zone 3 injuries (Jones fracture), zone 1 and 2 fractures are generally expected to heal with conservative management. Uncommonly, zone 1 and 2 fractures can develop non-unions. The aim of this study was to evaluate the efficacy of closed intramedullary screw fixation for non-unions of the 5th metatarsal base.

Methods: We performed a prospective study involving all 5th metatarsal base non-unions treated in our department over 2 years. Only minimally-displaced adult fractures were considered for this study. The fracture pattern was categorised using the Dameron classification (zone 1 - styloid process, zone 2- meta-diaphyseal area, zone 3 - proximal diaphysis). All non-unions were fixed percutaneously under radiographic guidance, without fracture site preparation. Zone 1 injuries were fixed using a 3mm headless compression screw and zone 2 and 3 with an intramedullary 4mm screw.

Results: Out of 19 patients included in this study, a minimum of 6 month clinical follow up was obtained. The average time from injury to treatment was 5.4 months (range 3-12 months). There were no smokers in this patient cohort. There were 12 zone 1 injuries, 3 zone 2 injuries and 4 zone 3 injuries. All patients achieved union by 3 months post screw fixation, with 18 out of 19 achieving union by 6 weeks. All patients had resolution of symptoms. There were no complications.

Conclusions: We conclude that percutaneous fixation of 5th metatarsal base non-unions, without fracture site preparation, achieves excellent results. We believe that the screw alters the strain of the fracture, thus promoting fibrous to osseous conversion and therefore union.

Notes:

P5

Evaluating the weight bearing status of stable Weber B ankle fractures

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Introduction: Stable Weber B ankle fractures are treated with a walking boot for six weeks with instructions to fully weight bear. The aim of the present study was to evaluate the amount of weight patients manage to apply through the boot during their treatment and the amount of support the boot provides to them.

Materials and methods: All the adult patients treated with the above mentioned protocol between December 2017 and April 2018 were included to the study. Functional outcomes measured with the FADI and COST questionnaires and weight bearing radiographs were obtained at 2 and 6 weeks after the injury. The patients were asked to weight bear with and without the boot in order to measure the amount of weight going through the injured limb.

Results: Data from a total of 77 follow up appointments were collected and analysed. Most of the patients were female (61%) and their mean age was 56.3 ±18 years (mean BMI 29 ±7). At the 6-weeks follow-up the functional scores reached almost normal values (72.1 ±15.8 for FADI and 50 ±17 for COST score).

At the 2 weeks follow up, 73.5% of the patients were able to weight bear fully with and without the boot. Of the remaining 26.5%, 9.8% patients were able to put full weight through the boot only. The boot improved the weight bearing status of these patients significantly (p=0.05) by 23% of their body weight. All of the patients (100%) were able to weight bear fully with and without the boot at the 6-weeks follow-up.

Conclusion: Conservative treatment for stable Weber B ankle fractures lead to good functional outcomes. For 73.5% of the patients at the early phases of their treatment the walking boot does not aid their weight bearing but for the remaining improves significantly the weight bearing status.

P6

Stabilisation of the ankle syndesmosis using the internal brace (Arthrex) - early results

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Introduction: The use of the internal brace to stabilize the ankle syndesmosis has previously been described by Regauer et al.(1) We describe the early results of 9 traumatic syndesmotic injuries treated in this way.

Methods: There 8 male patients and 1 female patient. Mean age 25 years(17-47 years). Included in the study were 5 professional rugby players, 1 semi professional rugby player and 1 semi professional footballer. 4 patients had isolated unstable anterior syndesmotic injuries. 3 patients had associated high fibula fractures and 2 patients posterior malleolar fractures. 1 patient had a deltoid ligament repair and another an ATFL repair at the same time. Patients were followed up at 2 weeks,6 weeks,12 weeks and approximately 6 months post surgery. AOFAS scores and range of movement in particular knee to wall distance were recorded and compared to the non-injured side. All patients underwent radiological examination at 6 weeks,12 weeks and approximately 6 months post surgery. Time to return to sports was also recorded.

Results: The early results appear encouraging with no complications related to the internal brace itself. Those patients with associated injuries had lower AOFAS scores, greater restriction in range of movement and longer return to sports.

Conclusion: We believe the internal brace provides comparable results with existing techniques to stabilize the syndesmosis. The anatomic technique we believe may have some functional advantages particularly with regard to initial stability. Further longer term larger studies are required to fully evaluate this technique.

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Notes:

P7

Are all Weber A ankle fractures benign?

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Introduction: Ankle fractures are a common injury with an incidence of 168.7/100,000/year. The Danis-Weber classification helps describe fibula fractures and guide treatment. Reports of non-unions in Weber A fractures are extremely rare. We present a case series of large, transverse avulsion type fracture (Weber A, Lauge-Hansen SAD stage 1 injury) which progressed to non-union and required surgical intervention. We aim to determine how commonly these fracture patterns progress to non-union.

Methods: Following initial identification of the injury pattern we searched through theatre and PACS databases to identify all similar ankle fracture non-unions that required surgical intervention. From November 2007 onwards, we also reviewed PACS imaging of all ankle radiographs reported as Weber A fractures or non-unions to try and estimate an incidence.

Results: 116 radiographs were reviewed. 19 patients were found with a fracture pattern similar to our index case. Four patients were identified with an established non-union and required surgery. These cases were dealt with by internal fixation with or without bone graft and all progressed to union.

Discussion: Three of the 4 cases reported a re-injury following their initial management. This could be a factor in the progression to non-union or a response to the already pre-existing condition. A number of theories for the development of a non-union in these cases have been proposed but no definite cause identified. If a symptomatic non-union is diagnosed then in our experience they progress to union following surgical debridement and stabilisation with or without bone graft. This injury pattern should promote thought from the treating clinician and shouldn´t just be dismissed. We recommend no change to treatment applicable to any stable ankle fracture but that patients should be warned of the possibility of symptomatic non-union.

P8

Anatomy of the lateral plantar ligaments of the transverse metatarsal arch: The lateral lisfranc ligament

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Introduction: The anatomy of the Lisfranc complex is well understood. In contrast, the lateral tarsometatarsal ligamentous structures are under investigated. A number of classifications have previously been proposed, noting homolateral and divergent subtypes of midfoot fracture dislocations. These subtypes indicate intact metatarsal connections of the middle and lateral rays (as illustrated clinically in figure 1), however little is understood in regards to these connections. Our aim was to identify the plantar ligamentous structures of the lateral tarsometatarsal joints and their significance in tarso-metatarsal joint injuries.

Methods: We examined 10 cadaveric lower limbs that had been preserved for dissection at the Human Anatomy and Resource Centre at Liverpool University in a solution of formaldehyde. The lower limbs were carefully dissected to identify the ligamentous structures of the plantar aspect of the transverse metatarsal arch.

Results: In all specimens, the long plantar ligament blended with a transverse metatarsal ligament (lateral Lisfranc) spanning from the 2nd to the 5th metatarsal. This transverse metatarsal ligament formed the basis of the roof and distal aspect of the peroneus longus canal. The separate short plantar ligament formed the floor of the peroneus longus canal. In addition, separate intermetarsal ligaments were identifiable connecting each metatarsal. The long plantar ligament provides a connection through the transverse metatarsal ligament, connecting the transverse and longitudinal arches of the foot.

Conclusion: The plantar ligamentous structures of the lateral tarsometatarsal joints are a combination of individual intermetatarsal ligaments and a transverse metatarsal ligament. This explains the homogenous nature of a divergent tarsometatarsal joint injury and why middle and lateral columns move as one. It also has clinical significance in the observation that in some cases lateral column instability can be overcome when the middle column is stabilised.

Notes:

P9

Calcaneal fracture epidemiology and fixation trends in England, 2000 to 2017

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Background: The primary aim is to document the epidemiology of admitted calcaneal fractures in England since the year 2000 in adults (age >18 years). The secondary aims are to determine whether the UK Heel Fracture Trial (UK HeFT) has impacted on the proportion of admitted calcaneal fractures being surgically fixed and whether there has been any change in the surgical technique used.

Methods: In England the Hospital Episode Statistics (HES) data is recorded annually. Between 2000/01 and 2016/17 the number of adults admitted to an English NHS hospital with a diagnosis of a calcaneal fracture and whether they were treated with surgical fixation was determined.

Results: Over the 17-year period 62,858 patients were admitted to hospital with a calcaneal fracture. The male to female ratio was 2.66:1. The mean annual incidence for males is 10.5 / 100,000 and for females 3.8 / 100,000. UK HeFT was published in July 2014. The percentage of patients with an admitted calcaneal fracture undergoing internal fixation pre-publication was 7.31% (3,792/51,859). Post-publication the internal fixation rate was 7.38% (534/7,229), which was not significantly different (p=0.94). Nevertheless of those calcaneal fractures that were internally fixed there has been a significant increase (p=< 0.001) in the percentage treated by closed reduction as opposed to open reduction subsequent to the publication of UK HeFT, from 8.32% (292/3511) pre-publication to 13.29% (71/534) post-publication.

Conclusion: This study documents the epidemiology and fixation trends of calcaneal fractures in England. We have established that surgeons did not change their clinical practice in terms of offering surgery for calcaneal fractures in response to UK HeFT. Surgeons though continue to innovate to find better ways of surgically treating calcaneal fractures, with a recent increase in less invasive procedures.

P10

Clinical and patient reported outcomes following low intensity pulsed ultrasound (Exogen) for established post-traumatic and post-surgical non-union in the foot and ankle

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Background: Contention exists as to the efficacy of Low Intensity Pulsed Ultrasound (Exogen) on bony healing following non-union. We examine clinical and patient reported outcomes following Exogen treatment, in patients following post-traumatic or post-surgical non-union in the foot and ankle.

Methods: Demographics, clinical and patient reported outcomes (pre and post treatment MOXFQ, EQ5D-5L and VAS scores) were gathered for 50 consecutive patients (February 2015 - February 2018) who underwent Exogen treatment for symptomatic and radiological non-union for a variety of foot and ankle pathology. The economic impact was also analysed.

Results: There were 15 fracture non-unions (tibia, ankle), 20 non unions from midfoot/forefoot procedures (talonavicular, tarsometatarsal, base 2nd metatarsal, base 5th metatarsal) and 15 from hindfoot procedures (ankle/triple/TTC nailing). 13 patients (2,8,3) had diabetes mellitus and 6 (4,0,2) were smokers. 40 patients (14/16/10) clinically united, 4 (0,1,3) patients noticed no significant improvement but did not want to consider surgical intervention and 6 (1,3,2) patients failed treatment and progressed to revision surgery. Xray or CT scan was used to define radiographic confirmation of union post-treatment. Of those that clinically healed, radiographic union was found in 72% (29/40). PROM data showed statistically significant improvements ($P < 0.05$) at an average of 6 months post treatment. Exogen healed 93% in the fracture group, 80% in the midfoot/forefoot group and 67% in the hindfoot group. Significant cost savings were realised with the use of Exogen for this cohort of patients.

Discussion: Overall, 80% of patients with foot and ankle non-union improved clinically to discharge, (with no need for further intervention), with significant improvements in PROM scores. Poorer results may be observed in hindfoot procedures. The appropriate use of Exogen for established non-union in the foot and ankle is a safe, valuable and economically viable clinical option as an alternative to revision surgery.

Notes:

P11

Tibiotalar arthrodesis - Is union rate and time to union influenced by preoperative deformity, patient related factors or open/arthroscopic procedure and what do patients percieve?

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Background: Arthroscopic ankle arthrodesis(AAA) is an established procedure for treatment of end stage ankle arthritis. It has the potential advantage of faster time to union, lower morbidity ,faster rehabilitation, less blood loss and shorter hospital stay when compared to open fusion.The purpose is to analyse if union is affected by deformity, patient related factors and measure PROMS.

Materials and methods: Between January 2005 and December 2015, 124 Ankle Arthrodesis (OAA-27; AAA-97) procedures were performed by fellowship trained foot and ankle surgeons in a single institution. Based on preoperative deformity, (AAA- 28 degree valgus to 26 degrees varus; OAA- 41 degree valgus to 28 degree varus) they were subdivided into 2 groups based upon deformity more than 15 degrees. Union rates, time to union, length of stay, PROMS (EuroQol pain and Johnson´s satisfaction scale).

Results: Mean age of patients was 60years (Range-20-82 years)(Male:Female-92:32).Overall fusion rate was 93% in AAA and 89% in OAA (p=0.4).On sub group analysis of the influence of preoperative deformity, there was no difference in union rates of AAA versus OAA. Average time to union was 13.7 in AAA and 12.5 weeks in OAA (p=0.3). Average hospital stay was 2.6 days in AAA and 3.8 days in OAA (p=0.003) 40% had no pain on EuroQol and 32% were completely satisfied with their procedure.

Conclusion: Although both AAA and OAA showed good union rates,hospital stay was significantly shorter in AAA. A larger deformity did not adversely affect union rates in AAA. 40% of patients reported a good outcome for pain relief. Lifestyle risk factors did not have cumulative effect on union.

Our study shows that AAA is reproducible method of treating end stage arthritis of tibiotalar joint irrespective of preoperative deformity and patient related factors, however PROMs show there is still areas for improvement, upto 5 years post procedure.

P12

FORFoot: Forefoot offloading shoes vs rigid flat shoes in patients undergoing surgery of the first ray: A randomised controlled trial of clinical and radiological outcomes

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Background: It is common for patients undergoing hallux rigidus or hallux valgus surgery to be prescribed six weeks of postoperative immobilisation using either flat or reverse camber postoperative shoes. Currently, evidence is lacking to demonstrate if there is a difference between these two forms of immobilisation in either patient satisfaction or clinical outcomes.

Methods: One hundred consecutive patients undergoing Scarf/Akin osteotomies or 1st MTPJ arthrodesis were recruited. Patients were randomised to either flat or reverse camber postoperative shoes, fifty patients in each group. Patients undergoing ancillary procedures on lesser toes were not excluded. Satisfaction with each form of postoperative shoe was reviewed by patient reported VAS pain scale and Likert satisfaction survey. Radiographic outcomes were reviewed at 1-year observing differences in fusion rates (Arthrodesis) or deformity recurrence (Hallux valgus).

Results: At completion of the study there were 47 patients in the reverse cam and 43 in the flat shoe group. No difference in primary forefoot operation, additional operation, age at surgery or pre-op VAS pain score was seen between groups. At the 6 week follow up there was no difference in post op VAS pain score between the groups. However, the flat shoe group were significantly more likely to be satisfied with their general mobility in the shoe (86.0% vs 61.7%, p=0.01) and satisfied with their stability in the shoe (90.7% vs 69.6%, p=0.03) than the reverse cam shoe group. There was no statistically significant difference seen between groups for non-union or hallux valgus recurrence rates.

Conclusions: Both forms of postoperative footwear were effective in enabling patients to mobilise and in preventing adverse outcomes. Patients are more likely to be satisfied with a flat postoperative shoe due to improved stability and ease in mobilising. The results of this study aid surgeon decision making for postoperative footwear type in forefoot surgery.

Notes:

P13

Early results of Complete Cartilage Regeneration (CCR) technique for Talar Osteo-Chondral defects (OCD)

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Aim: To provide on going evidence and monitoring for a new surgical technique. In the single stage treatment of patients with cartilage defects of the talus.

Method: Bone marrow aspirate (35mls) is harvested from the posterior or anterior superior iliac spine of the pelvis. This is spun down into a Mesenchymal Stem Cell (MSC) rich concentrate. The concentrate is mixed with a Fibrin gel and hyaluronic acid. The resulting adherent mixture is glued onto the prepared defect, to form a MSC rich patch.

Results: Total number of patients to receive CRR to date is 52. There have been no serious adverse incidents to date.

Average MOX-FQ summary index pre op was 68 and improved to 47 at 6 months, 39 at 12 months and 39 at 18 months post procedure.

Average EQ5d-5L VAS pre op was 67 and improved to 73 at 6 months, 77 at 12 months and 73 at 18 months post procedure.

Average AOFAS pre op was 57, this improved to 74 at 6 months, 81 at 12 months and 75 at 18 months post procedure.

Average EQ-5d-5L index was 0.51 pre op, this improved to 0.65 at 6 months, 0.66 at 12 months and 0.79 at 18 months post procedure.

Conclusion: The early data gathered on this technique shows it to be safe and these early results are promising especially considering the trend towards continuing improvement.

P14

Is operative treatment of delayed Achilles tendon rupture presentation essential? Mid and long-term follow-up of conservatively treated patients

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Surgical treatment of delayed Achilles tendon rupture is strongly advised in the literature, but is it always required? The purpose of this study was to report the outcomes of patients with a delayed presentation of Achilles tendon rupture treated conservatively via a dedicated treatment pathway.

All Patients with a delayed presentation who had been conservatively treated between 2008 - 2014 were identified. The conservative management pathway was the Swansea Morriston Achilles Rupture Treatment (SMART protocol) as used for the acute ruptures. Following ultrasound diagnosis, patients were immobilised in equinus and followed up in a dedicated Achilles tendon clinic along strict rehabilitation guidelines.

Outcome measures included complication rates; Achilles Tendon Total Rupture Score (ATRS) and Achilles Repair Score (ARS) repeated at mid (mean of 3 years) and long follow-up (mean of 6 years); and muscle function dynamometry assessing plantarflexion torque of the ankle. MRI of ruptured and non-ruptured legs allowed measurement of Achilles tendon length. Comparisons between the two sides were made (2-tailed t-test).

19 patients with a mean age of 60 years and a mean delay to treatment of 61 days were identified. The mean ATRS at mid-term follow-up was 65/100 and ARS was 71/100. The mean plantarflexion torque for the injured side was 19.5 N.m compared to 25.7 N.m on the uninjured side, with a significant difference between the two sides ($p = 0.001$). The mean length of the injured Achilles tendon was 104.9mm and uninjured 97.3mm, with no significant difference ($p= 0.111$). At long-term follow-up ATRS was 81/100 and ARS was 73/100. There were no re-ruptures. One patient had a pulmonary embolus. One patient went on to surgery.

A conservative management regime for patients with a delayed presentation Achilles tendon rupture provides a satisfactory outcome in the majority of cases.

Notes:

P15

Identification of stable supination external rotation ankle fractures - A consensus opinion

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Background: The British Orthopaedic Association Standards for Trauma (BOAST) guidelines highlight the importance of identifying stability in the treatment of ankle fractures within 2 weeks of injury. In practice, it is the supination external rotation (SER) injuries when stability remains unclear and further assessment is required. We sought to form a sub-speciality, consensus opinion from British Orthopaedic Foot and Ankle Society (BOFAS) members, on how to determine stability in SER injuries.

Methods: We performed an electronic survey of all 456 BOFAS full members in autumn 2017. The survey contained two scenarios on how to determine stability in a young healthy patient with an isolated Weber B fracture and no talar shift: -

1. With medial tenderness
2. Without medial tenderness

Results: The response rate was 61%. In the presence of medial tenderness 71% of members would test for stability/ talar shift by using weight-bearing (WB) radiographs. When medial tenderness was absent, 67% would still test stability in the same manner. The exception to this was when patients had no medial tenderness and had walked on their fracture prior to presentation. In this case 65% used the presentation radiograph, to look for talar shift and determine stability.

The method and timing of WB radiographs varied, however the majority performed standing radiographs, barefooted at approximately 1 week following injury.

Conclusion: This survey provides a consensus on determining the stability of SER ankle fractures. Patients with un-displaced SER injuries who have not walked prior to presentation should undergo standing radiographs regardless of the presence or absence of medial tenderness, at approximately 1 week from injury. Medial tenderness does not determine stability.

Implications: To ensure early WB, individual units should ensure they have a pathway highlighting which ankle fractures should get WB radiographs including when and how they should be performed.

P16

An investigation of the damage to flexor tendons incurred by different minimally invasive proximal phalangeal closing wedge osteotomy surgical techniques in cadaveric feet

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Background: Minimally invasive surgery (MIS) for hammer toe correction has become increasingly popular in the United Kingdom. The proximal phalangeal closing wedge osteotomy component of hammer toe correction can be performed by passing the burr via a plantar incision through the flexor tendons (transtendinous) or passing the burr adjacent to the flexor tendons (paratendinous).

Aim: To investigate damage to the flexor tendons by transtendinous and paratendinous techniques in cadaveric feet.

Method: Institutional approval was granted. Alternating between right and left feet of 8 donors, MIS proximal phalangeal osteotomies were performed transtendinous (n=24) and paratendinous (n=24) using the 2nd, 3rd and 4th toes. Osteotomies were performed by 2 experienced surgeons using a 2mm x 8mm wedge burr. Toes were then dissected by an independent observer to assess damage to the flexor tendons.

Results: Using the paratendinous technique, significantly more damage to the flexor tendons was noted compared to the transtendinous technique (47% vs 4%, $p< 0.05$). The position of the osteotomy at or distal to the metaphyseal/ diaphyseal junction was assessed. There was a significant difference in flexor tendon damage in the paratendinous group when the osteotomy was sited at the junction compared to more distally (67% vs 27%, $p< 0.05$). There was no significant difference accordingly to site using the transtendinous technique (7% vs 1%, $p>0.05$).

Conclusion: The least damage to the flexor tendon in MIS proximal phalangeal osteotomy is achieved with a transtendinous technique regardless of osteotomy site. The most damage to the flexor tendon occurs with a paratendinous technique at the metaphyseal/diaphyseal junction.

Notes:

P17

A prospective study of 493 Ankle Fractures in a UK trauma unit: What lessons can be learnt?

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Introduction: Ankle fractures represent 10% of the fracture workload and are projected to increase due to ageing population. We present our experience and lessons learnt in the management of ankle fractures in a large UK Trauma unit.

Methods: Prospective data collected between 2013 and 2017 was retrospectively analysed. A total of 493 patients entered into the database were divided into Stable ankle fractures (Group A) and unstable ankle fractures treated with surgical fixation (Group B). Petronne's criteria were used to assess quality of reduction in Group B. Pre and post injury PROMs were compared using Olerud-Molander Ankle Scores (OMAS) and Lower Extremity Functional Scales (LEFS).

Results: In Group A, 132 patients matched the criteria for the "stable ankle pathway " and were allowed weight bearing in a cast or boot. Two patients required surgery due to talar shift on weight bearing x-rays at one week and two patients had delayed union.

In Group B, of 351, data was available for 302 patients for final analysis. The mean age was 46.7, with comorbidities 186 (72.1%) overweight, 14 (4.7%)diabetes, 65 (23%) smokers, 33 (11.6%) alcoholics and 1 steroid use. Seventy-three (34%) had inadequate reduction in 2014-2015; this figure reduced to 12 cases, 13.8% in 2016-17, after introduction of a simple educational tool. There were 8 (3.1%) post-operative wound infections. Pre- and post-op OMAS and LEFS were compared which showed mean reduction of 14.7 and 11.3 respectively. Multiple regression analysis did not reveal any significant co-relation between patient demographics, co-morbidities, radiological outcomes and post-op PROMS.

Conclusion: Our 'stable ankle pathway' is safe and effective. We recommend a simple educational tool to improve trainees and general trauma surgeon's awareness in treating this injury adequately. Patients should be counselled for general decline in ankle function due to the injury regardless of adequate fixation.

P18

The incidence of gissane angle impingement and accessory anterolateral facet of the talus in adult acquired flat foot: the need for an increased awareness of non-arthritic lateral hindfoot pain

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Introduction: In Adult Acquired Flatfoot (AAF) classifications (Stage 3 of Johnson and Strom, Bluman) lateral hindfoot pain is associated with subtalar joint arthritis (STA) and arthrodesis is recommended. Bluman reports sinus tarsi pain, Gissane Angle sclerosis and subtalar joint space loss as Grade 3 changes.

We hypothesise that the occurrence of lateral pain from Gissane Angle Impingement (GAI) is independent of subtalar arthritis and is dependent on the extent of the deformity and/or the presence of an Accessory Anterolateral Facet of Talus (AAFT).

Methods: Radiographs and MRI images of AAF done between May 2015 and January 2018 were reviewed. Meary's angle, Talonavicular coverage angle, subtalar articular status, Gissane Angle bone oedema, the presence of an AAFT, calcaneofibular impingement (CFI) and hindfoot valgus angle (HFVA) were assessed.

Results: 28 (24 female, 4 male) patients with a mean age of 54.2 years were included. The mean Meary's angle was 32 degrees and the mean talonavicular coverage angle was 23.8 degrees. The mean HFVA was 33.6.

14 patients demonstrated MR signal change in both talar and calcaneal sides of the Gissane Angle and 2 patients demonstrated unilateral signal change. An AAFT was seen in the MRI images of 10 of these patients. Only 9 patients demonstrated CFI. There was STA in 11 patients. CFI & STA coexisted in 4 patients. Presence of an AAFT was found to significantly reduce the measured tip-apex distance within the Gissane Angle (mean 3.2mm to mean 2.2mm) and was also associated with increased bone oedema.

Discussion: Our cohort of patients demonstrates significant pes planus deformity and a high prevalence of GAI on MRI scans. GAI was seen more frequently than CFI. GAI appears independent of STA and arthrodesis need not be considered. Identifying the causes of lateral pain and the presence of an AAFT significantly influences surgical planning.

Notes:

P19

Posterior approaches to the ankle - An analysis of 3 approaches for access to the posterior distal tibia

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Aim: With the increase in the use of CT scanning and fragment specific fixation for complex ankle fractures, utilisation of multiple surgical approaches has increased. Our aim in this study was to analyse three posterior-ankle approaches to find their use and efficacy in accessing the posterior tibia.

Methods: We examined 5 fresh frozen cadaveric lower limbs at the University of Keele anatomy laboratory. Three posterior ankle approaches (posterolateral (PL), posteromedial (PM) and medial posteromedial (MPM) approaches were performed, using a consistent repeatable incision of 7cm. Kirchner wires were then placed parallel to one another at 4 points in the posterior tibia (proximal, distal, medial and lateral). The ankles were imaged using an image intensifier and the distances measured.

Results: The PL approach allowed an average 746.9 mm2 diamond of access (DOA) to the posterior tibia (46.2 x16.2mm). The PM approach allowed an average 1101.9mm2 DOA to the posterior tibia (56.8x19.4mm). The MPM approach allowed an average of 1184.7mm2 DOA to the posterior tibia (55.1x21.5mm).

We compared the areas of access for each incision to 149 posterior malleolar fractures on our database. Only 56% of fractures could be fully exposed using the PL incision. In comparison, 78% of fractures could be exposed using the PM incision. Only 19% of patients had posteromedial fractures that could be visualised using the MPM incision, but it did not allow access to the constant posterolateral fragment, thus its usage is primarily as a supplementary incision.

Conclusion: We conclude that the most commonly used approach (the PL approach) gives the least amount of access to the posterior tibia. In comparison to fracture fragment size, almost half of fractures would not be fully exposed through the PL approach, and if fixing such fractures the surgeon should be comfortable with multiple approaches.

P20

Prolotherapy as a treatment choice for ATFL injuries in elite athletes: A case series

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Anterior talofibular ligament (ATFL) complex injuries in professional football and rugby players are common and can cause significant time off sport at elite level competition. Prolotherapy is effective in treating refractory tendinopathies, but inadequate clinical evidence exists to recommend its use as a treatment for acute ankle sprains. Importantly there is no literature about its use in elite athletes and ankle injuries. Our series documents grade 2 or 3 ATFL tears in 10 professional elite level athletes who where injected with a solution of P2G (dextrose, glycerol and 1% phenol mixed with local anaesthetic) under ultrasound guidance and using aseptic technique weekly either twice or three times dependant on their symptoms and recovery. All athletesin combination with prolotherapy and physiotherapy returned to elite level sport without any complications and with only one reinjury. These results show that in this elite athlete population prolotherapy can be safe and effective tool to treat ATFL injuries.

Notes:

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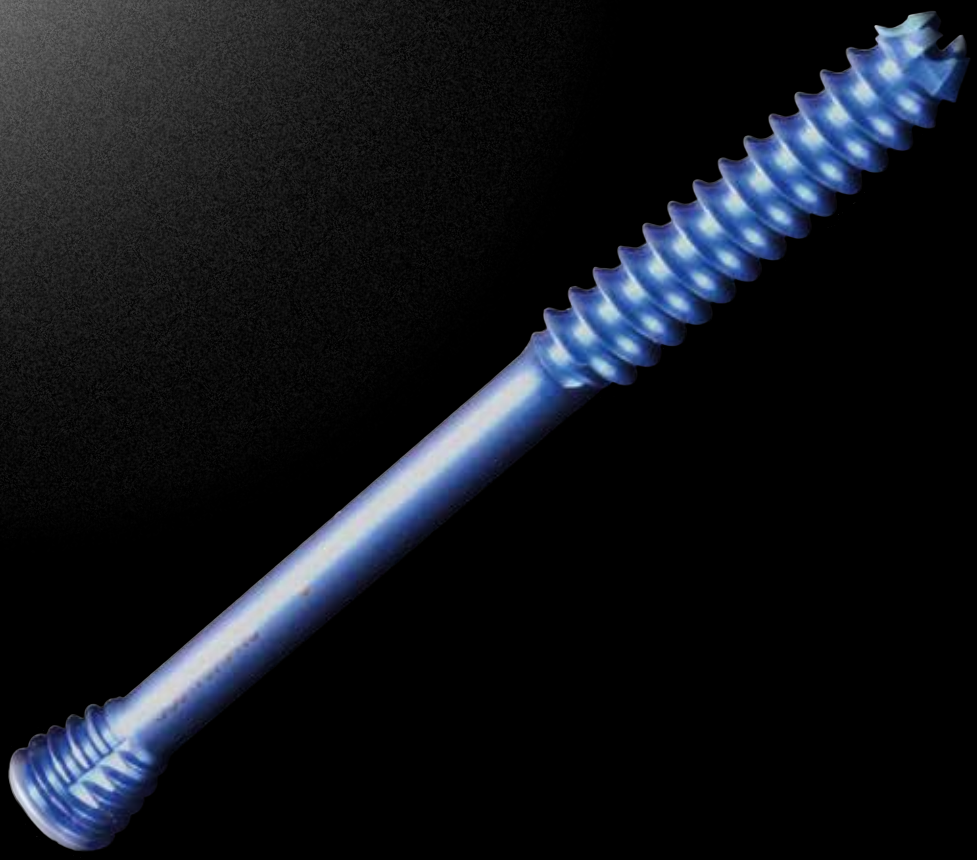

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Day 1 Wednesday 7th November

08:00-08:50	Registration and coffee
08:50-09:00	Welcome to BOFAS Edinburgh 2018 Steve Hepple
09:00-10:45	Paediatric meets Adult Foot *Chairs: Paul Halliwell I Ian Sharpe*
	OCL in Children Mike Uglow
	Coalitions Rick Brown
	Do paediatric painless felxible feet become painful? Tim Theologis
	Long term outcome of CTEV after Ponsetti Mark Gaston
	Long term outcome after open treatment Simon Barker
	Professional Overview - inheriting paediatric foot problems James G. Wright
	Discussion
10:45-11:15	Coffee
11:15-12:35	Free Paper Session 1 *Chairs: Roland Russell I Tim Clough*
12:35-13:00	Keynote Lecture 1 VTE - Where are we now? Chris DiGiovanni
13:00-13:45	Lunch
13:45-15:15	Research in Orthopaedics *Chairs: Hiro Tanaka I Lyndon Mason*
	Canadian ankle database Alastair Younger
	UK F&A research update Matt Costa I Roland Russell
	Evidence based orthopaedics James G. Wright
	Discussion
15:15-15:45	Coffee
15:45-17:00	Soft Tissue Issues *Chairs: Rhys Thomas I Bob Carter*
	Tendons through the keyhole Ian Winson
	Lisfranc - current thoughts Chris DiGiovanni
	Syndesmosis James Calder
	The medial ankle ligaments Chris Coetzee
	The lateral ligament repair - the case for arthroscopy Chris Pearce
	Turf Toe - How I deal with the pain Rhys Thomas
	Discussion
17:00-17:25	"Enlightened Edinburgh: Rogues, Reformers and Resurectionists" James Ritchie
17:45-18:30	Poster viewing/reception
	Drinks in Exhibition area

Day 2 Thursday 8th November

08:45-09:15	NJR Update/Outcomes *Chairs: Paul Halliwell I Andy Goldberg*
09:15–10:45	Difficult Cases *Chairs: Rajesh Kakwani I Lyndon Mason*
09:00-12:00	AHP Meeting - Kilsyth
09:00–12:00	Industry Workshops - See page 10 & 11 for details
12:00-13:00	Lunch for all
12:35-14:30	BOFAS AGM - Main Auditorium
13:00-14:30	AHP Meeting - Kilsyth
13:00-14:30	BOFAS Fellowship Forum -Lammermuir 2
14:30-15:00	Coffee
15:00-16:00	Free Paper Session 2 *Chairs: Jit Mangwani* I Dave Townshend
16:00-16:30	Medicolegal Interlude 1 Causation: toilet roll holders, balconies, prosthetics and decision-making Julian Benson
16:30-17:45	Treatment of Osteochondral Lesions *Chairs: Anna Chapman I Nikki Kelsall*
	OCDs introduction Ian Sharpe
	Bone marrow stimulation - still the first option? Patricia Allen
	Cells and membranes Martinus Richter
	Mosaiocplasty technique and results Pete Rosenfeld
	Other options Chris Coetzee
	Overview/My algorithm Stephen Kearns
	Discussion
19:30-23:30	Gala Dinner at National Museum of Scotland

Day 3 Friday 9th November

08:30-09:55	Free Paper Session 3 *Chairs: Maneesh Bhatia I Raman Dega*
09:55-10:15	Keynote Lecture 2 Standing CT scans - do we all need these? Martinus Richter
10:15-10:45	Medicolegal Interlude 2 Montgomery Barry Parker
10:45-11:15	Coffee / Brunch
11:15-12:45	Basic Science *Chairs: Mike Butler I Francesc Malagelada*
	The gastrocnemius contracture- the root of all evil? Chris DiGiovanni
	Bone grafts, if, when and what Alastair Younger
	PRP – can we use it? Andrew Wines
	Wound Healing – importance of angiosomes Timothy Daniels
	Stem cells in foot & ankle Andy Goldberg
	Post-thrombotic syndrome – should we worry? Jitendra Mangwani
	Discussion
12:45-13:00	Best Paper Presentations Roland Russell I Steve Hepple
	Klenermann Award Presentation Mark Davies
13:00	Close of Meeting

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