BOFAS

British Orthopaedic Foot & Ankle Society

BELFAST 2013

British Orthopaedic Foot & Ankle Society
Annual Scientific Meeting 2013

6th-8th November 2013 · Europa Hotel, Belfast

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British Orthopaedic Foot & Ankle Society

Dear Delegate

Welcome to Belfast

I would like to welcome you all to our Annual Scientific Meeting in the Europa Hotel, Belfast. We have put together a programme of Instructional Courses covering a wide variety of topics around the foot and ankle. We have secured the services of an outstanding international faculty to speak during these sessions. I would particularly like to welcome our Allied Health Professionals who will join us on Thursday morning for a combined session, looking at the comprehensive management of patients with tibialis posterior tendon dysfunction, as well as exploring examples of good practice in multidisciplinary team working.

This year the Trade Exhibition is in the Grand Ball Room of the hotel which is also where tea and coffee facilities are located during breaks in the programme and after lunch. Please take these opportunities to visit our trade partners who contribute very substantially to the successful running of this meeting.

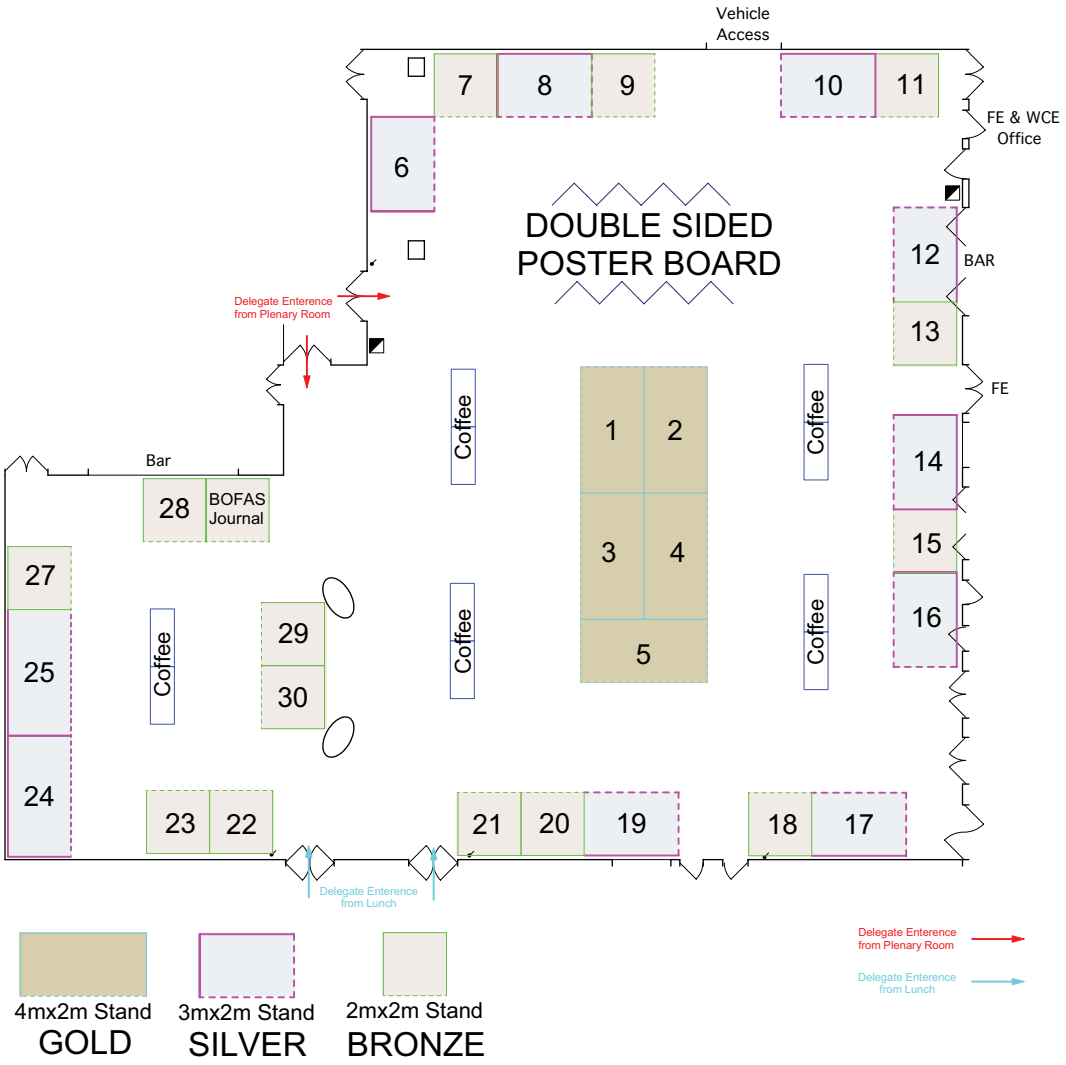
Belfast City Council have very kindly agreed to host a Civic Reception for BOFAS in Belfast City Hall on Wednesday evening. All those attending the meeting, together with members of the trade, are warmly invited to the Civic Reception which is a few minutes walk from the hotel.

On Thursday evening our Annual Dinner is being held in the Banqueting Suite of the Titanic Exhibition Centre and we will have the opportunity to visit some of the exhibition en route to our Drinks Reception. This promises to be a most enjoyable evening.

I would like to take this opportunity to thank the members of Council and the members of the Education, Scientific and IT Committees for their invaluable help and guidance during the past year in general and in the run-up to this year's meeting in particular. I would also like to thank our administrative and support staff who have come together at fairly short notice to pull together the final details of this year's meeting. I hope that by Friday afternoon, as this year's meeting draws to a close, you will agree that their efforts have been rewarded with the delivery of an instructive and enjoyable meeting.

With best wishes

Simon Henderson
PRESIDENT BOFAS 2013



BOFAS 2013 - KEY TO STAND POSITIONS

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OrthoSolutions	2
Tornier UK Limited	1
WG Healthcare	5

SILVER	
Arthrex	8
Bioventus	10
Corin	6
DJO Global	17
Lavender Medical	16
Northstar	19
Ortholink	12
Smith & Nephew	24
Stryker	14
Integra	25

Company	Stand No.
BRONZE	
Athrodax	20
Biovation UK	28
Curvebeam	27
MatOrtho	7
Medartis	15
Osteotec	13
OSSUR	29
OTSIS	22
Ottobock	23
Premium Medical Protection	18
Spectrum	21
Vertec	30

BIOGRAPHIES

Prof R J Abboud

- Department of Orthopaedics & Trauma Surgery
- Tayside Orthopaedic and Rehabilitation Technology (TORT) Centre
- Ninewells Hospital & Medical School
- University of Dundee.

Professor Rami Abboud graduated in Electrical Engineering from the American University of Beirut in 1988 and continued his postgraduate studies and obtained an MSc and PhD in Biomedical and Rehabilitation Engineering at the University of Dundee (UK) in 1989 and 1995 respectively. Professor Abboud is the Head of Department of Orthopaedic & Trauma Surgery, Director of the Institute of Motion Analysis & Research (IMAR), and Deputy Director of the Medical Education Institute (MEI) at the University of Dundee, where he leads a multidisciplinary team of orthopaedic surgeons, bioengineers, and allied health professionals. He has been actively involved and played an instrumental role in the development, progress and resulting successes of the Department, which he joined in 1988. His personal work experience and research activities have to date been focused on motion analysis and biomechanics, especially of the lower limb and the foot and ankle. IMAR's facilities have allowed him and his team the opportunity to expand their activities into a multidisciplinary portfolio collaborating with a diverse range of disciplines from medicine and allied health professionals to science and engineering as well as art and choreography. IMAR's main goal is to promote excellence in teaching and research and to provide a comprehensive clinical service in the fields of orthopaedics, motion analysis, gait analysis, foot pressure analysis, sports and biomechanics. Professor Abboud published over 300 papers in peer-review journals, books, conferences and as a keynote lecturer. He is a regular reviewer for over 15 scientific journals. Professor Abboud was appointed Editor-in-Chief of the International Foot Journal on 1 January 2013. Professor Abboud's research has always attracted media attention as it has instant impact on society. For example, his 2008 article in the British Journal of Sports Medicine on running shoes "the more you pay the less you get" attracted a massive international media attention. More recently, in 2011, his research on running, forces and the impact on the musculoskeletal featured on the BBC One Show.

Professor Abboud's dedication towards teaching, orthopaedic training and research was recognised on 18 January 2012 by the award of the Honorary Fellow of the Royal College of Surgeons of England; a rare accolade that is awarded to up to 30 living non-medically qualified internationally recognised figures in their particular speciality.

Dr Michael Aronow

Dr. Michael Aronow grew up in Long Beach, California. He graduated from Harvard College in 1984 and the Harvard Medical School - Massachusetts Institute of Technology Health Sciences & Technology Program in 1989. He did a general surgery internship, orthopaedic residency, research fellowship, and sports medicine fellowship at the University of Massachusetts Medical Center followed by a year of advanced clinical experience in foot and ankle surgery at the University of Washington Medical Center and Harborview Medical Center.

Dr. Aronow was on the full time faculty of the University of Connecticut School of Medicine for over fifteen years where he was an Associate Professor of Orthopaedic Surgery, a recipient of the Richard A, Garibaldi, M.D. Doctor's Day Award, and a recipient of the Harry R. Gossling, M.D. Orthopaedic Residency Educator of the Year Award. In 2012 Dr. Aronow joined Orthopedic Associates of Hartford. He is on the Board of Directors of the Connecticut Orthopaedic Society, a previous member of the Board of Directors of the American Orthopaedic Foot and Ankle Society, and a delegate to the Connecticut State Medical Society and the American Medical Association. Dr. Aronow lives in West Hartford, Connecticut with his wife and five children.

Mr Jim Barrie

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

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

Mr Stephen Bendall

Stephen is based at Brighton and Sussex University Hospitals. He qualified from Charing-Cross Hospital and trained in SW Thames and Baltimore USA. He has published on a range of topics including ankle impingement and hallux rigidus.

He is currently BOFAS President elect having previously served as Ed Comm Chair. He has an interest in postgraduate education being a Training Programme Director and FRCSOrth examiner. He along with Ed Comm developed the BOFAS course for trainees, which is proving extremely successful.

He also serves on the Podiatry Group for BOFAS working with the BOA and other stakeholders including the GMC and HCPC. He is looking with the GMC to recognize foot and ankle surgery as an annotation to the GMC Specialist Register using the process of revalidation.

Dr Tony Berendt

Tony Berendt trained in Cambridge and Oxford, graduating in 1983. After general professional training he returned to Oxford in 1987 to undertake laboratory research in malaria as a Medical Research Council Training Fellow and subsequently as a Lister Institute Research Fellow.

He completed specialist clinical training in Infectious Diseases and General Medicine in Oxford in 1995 and returned to his Lister Fellowship as an Honorary Consultant in Infectious Diseases, supporting the Bone Infection Unit at the Nuffield Orthopaedic Centre while researching the pathogenesis of severe Staphylococcus aureus disease and of musculoskeletal infections. He acquired extensive experience in the management of bone and joint infection including day-to-day supervision of a home intravenous antibiotic therapy programme while working closely with a number of orthopaedic surgeons treating all aspects of bone and joint infections. He was appointed as Consultant Physician-in-Charge of the Bone Infection Unit in 1997. The Bone Infection Unit (25 beds) remains the only clinical facility in the United Kingdom dedicated to the comprehensive multi-disciplinary management of bone and joint infection.

He has served on a number of clinical practice guideline development groups for NICE (CG 119 on diabetic foot problems in hospitalised patients in 2011), the International Working Group on the Diabetic Foot (guidance on diabetic foot infections in 2004, specific guidance on diabetic foot osteomyelitis in 2008 and updated guidance on diabetic foot infections in 2012) and for the Infectious Diseases Society of America Clinical (diabetic foot infection in 2004 with a full update published in 2012 and prosthetic joint infection published in 2013).

He was appointed as Medical Director of the NOC in 2004 and remained in post until the NOC merger with the Oxford Radcliffe Hospitals to create the Oxford University Hospitals NHS Trust. He continues to have clinical duties while also having responsibilities for medical appraisal and revalidation, the staff flu immunisation programme and areas linked to leadership and engagement.

Mr Paul Blair

Mr Paul Blair graduated from Queens University Belfast medical school. He is a Fellow of the Royal College of Surgeons of Edinburgh. He developed an interest in Trauma and Critical Care culminating in an MD thesis on Selective Gut Decontamination in ICU patients and a UKICU Travelling Fellowship. He is a Vascular Fellow of the Providence Medical Center, Seattle, USA. He was appointed Consultant Vascular Surgeon/Director of Trauma, Royal Victoria Hospital Belfast in 1995. He is the Clinical Lead for Northern Ireland's AAA screening programme and Clinical Director of the recently merged Belfast Regional Vascular Service. He is also Vice President of the Vascular Society of Great Britain and Ireland 2014. His main clinical interests are carotid body tumour surgery, aortic aneurysm surgery (open and EVAR), and distal bypass surgery. He is married with four children, is an Ulster rugby season ticket holder and an erratic golfer.

Mr Chris Blundell

Chris Blundell specialises exclusively in adult foot and ankle conditions. He carried out two fellowships in foot and ankle surgery in Melbourne, Australia in 2001/2. He was awarded an MD for research into foot pressures. Chris is a Sheffield graduate whose higher surgical training was in Cambridge and Norwich.

Chris Blundell was born in London and raised in Reading before studying medicine at Sheffield University. Halfway through his medical degree Chris did a BMedSci degree in Orthopaedic Bioengineering, one year later with a First Class Honours Award he decided that Orthopaedics was for him.

To this end he stayed in Sheffield for house jobs and then broadened his horizons with Higher Surgical Training on the Cambridge Scheme. Three of his HST years were spent at the Norfolk and Norwich Hospital where much of his skills were learnt. Whilst there he carried out a Doctorate in Medicine Degree and was the first to do so from the orthopaedic department at the N+N. This required a lot of trail-blazing administratively as well as scientifically. Chris spent a year in Melbourne doing two six-month foot and ankle fellowships, one in sports and general foot and ankle and one foot and ankle as part of a large private practice group (Melbourne Orthopaedic Group) where Andy Hamer had gone some years before.

Chris returned to Addenbrooke's Hospital in Cambridge and was appointed consultant at the Northern General Hospital in Sheffield in 2002. He is the Clinical Lead for the Sheffield Foot and Ankle Unit. He is currently actively pursuing some new research ideas.

Prof Timothy Briggs

Professor Briggs is Consultant Orthopaedic Surgeon at the Royal National Orthopaedic Hospital Trust and was Medical Director until May 2012, achieving a new build which has just started. He qualified in 1982 obtaining Honours in Surgery and a number of prizes. He was appointed at the RNOH as a Consultant in 1992. He is on the Editorial Board of the Bone and Joint Journal and Journal of Arthroplasty.

His special interests are reconstruction of the lower limb, as well as sports injuries of the knee and orthopaedic oncology. He has a special interest in autologous chondrocyte transplantation around the knee and is one of the clinical leaders in this field in the U.K. He has an interest in sports injuries and was previously one of the surgeons for the Arsenal men's and Arsenal lady's football clubs. He has a strong academic interest and publishes widely.

He has recently been appointed as Vice-President of the British Orthopaedic Association and will be President for the year 2013-2014. He is also Chairman of the Federation of Specialist Hospitals and Chairman of the National Clinical Reference Group for Specialist Orthopaedics.

He is also author of "Getting it right first time" – a report on improving orthopaedic care in the NHS in England, which has recently been published and endorsed by the government and NHS England. Over the next 12 months he will be visiting all 145 Orthopaedic Trusts in England to improve outcomes and maintain quality of care for patients.

Mr James Calder

James Calder is a Consultant Orthopaedic Surgeon at the Chelsea and Westminster Hospital, London and has developed a special interest in the treatment of sports-related foot and ankle conditions. James qualified from The London Hospital Medical College in 1991. He was awarded the Laming Evans Research Fellowship from the Royal College of Surgeons and completed his MD at Imperial College. He was Fellow to Dr Terry Saxby, Brisbane and was awarded the American Orthopaedic Foot and Ankle Society Travelling Fellowship in 2006.

He has continued his research interests into tendinopathies, ligament and articular cartilage injury and repair and has a particular interest in the clinical outcome following injury in elite athletes. He has served as Associate Editor for the Knee Surgery Sports Traumatology and Arthroscopy Journal and is on the Editorial Board of the Bone and Joint Journal. He is also Treasure of ESSKA-AFKAS and Chairman of the Achilles Tendon Study Group. Away from medicine he plays tennis, is a keen sailor and lives with his family and cows in Hampshire.

Ms Noelene Davey

Since graduating from the University of Sydney in 1995, Noelene has worked within both the private & public sector specialising in Musculoskeletal & Sports Physiotherapy. She has been an Extended Scope Physiotherapist (ESP) since 2004 (specialising in Orthopaedic Spines, Hips and Knees at Guy's & St Thomas' Hospital, London), gradually working her way down to the most challenging speciality of them all - the Foot & Ankle! She has worked alongside Mr Peter Rosenfeld, Foot & Ankle (F&A) Orthopaedic Surgeon at Imperial NHS Healthcare Trust since 2009, were she also works within a Sports and Chronic Lower Leg Pain Specialist Orthopaedic Team and alongside the Orthopaedic Knee Teams. She also works privately from Victoria, London (Kinetic Physio). Noelene is one of the key founding members of the 'Association of Foot & Ankle Physiotherapists'.

Mr Gavin DeKiewiet

Mr Gavin DeKiewiet obtained his medical degree in Stellenbosch University, South Africa in 1982. He has a Fellowship in Surgery/Orthopaedics from the Royal College of Surgeons, Edinburgh.

Mr DeKiewiet completed his Paediatric Orthopaedic Speciality by training in the Women's and Children's Hospital, Adelaide and at the Oskar-Helene-Heim, Berlin. He specialised in Trauma at the Royal Adelaide Trauma Unit. His Limb Construction Speciality was at Borgstrom Hospital Verona, the Kurgeon Institute Russia and the International Center for Limb Lengthening in Baltimore. He specialised in Hip Reconstruction Surgery at the Inselspital, Bern, Switzerland. He is a keen sportsman including golf, cycling and squash.

Mr Sunil Dhar

Mr Sunil Dhar, Consultant Trauma and Orthopaedic Surgeon for over 15 years, works at Nottingham University Hospitals, Nottingham, UK. He is a specialist in Foot and Ankle disorders and Paediatric Orthopaedics. He trained in India, Uk and the USA and is internationally renowned for his expertise in ankle disorders. He has been the Past President of the British Orthopaedic Foot and Ankle Society (2010) and the British Limb Reconstruction Society (2010-2012).

His main clinical interests relate to foot and ankle problems in adults and children. His research interests include ankle arthroplasty and deformity correction of the foot and ankle. He has pioneered treatment of ankle arthritis and total ankle joint replacement. He is closely associated with national bodies (National Institute of Clinical Excellence, British Orthopaedic Association) in implementing evidence based treatments that are cost effective. He is widely published and is regularly invited to speak and teach at national and international meetings and courses.

Ms Catherine M Duffy

Consultant paediatric orthopaedic surgeon at the Royal Belfast Hospital for Sick Children and Musgrave Park Hospital, Belfast, since October 2001. Trained at Queen's University, Belfast, graduating in 1988. Awarded an MD in 1998 for research into walking patterns in children with spina bifida. Took part in the Belfast training scheme for orthopaedics from 1995 - 1999. Was successful in the intercollegiate specialty orthopaedic exam (FRCS orth) in 1998.

Spent one year of fellowship training in the Royal Children's Hospital, Melbourne from June 1999 - July 2000, specialising primarily in the orthopaedic management of children with cerebral palsy. Spent a further 6 months in a general paediatric orthopaedic fellowship in Our Lady's Hospital, Dublin from January 2001 - August 2001.

Started "Ponseti" clinic for infants with CTEV following appointment as consultant at Musgrave Park Hospital, Belfast in 2002. Since then we have treated over 300 children with this condition. I had the great honour of spending one week at University Hospital, Iowa with Dr Ponseti in 2002. We now have a vibrant clinic staffed permanently by two senior nurses, and me, together with other nursing staff who rotate through the unit. It is no over-statement to say this has revolutionised the way in which CTEV is treated in Belfast.

Dr Mark Easley

Since 1999 Mark Easley has been a faculty member of the Duke University Medical Center faculty in Durham, North Carolina. He is currently an Associate Professor in the Department of Orthopaedic Surgery and one of the directors of Duke's Foot and Ankle Fellowship Training Program. He also serves as the Vice President for the American Orthopaedic Foot and Ankle Society (AOFAS). He is honored to be invited as guest faculty for the 2013 BOFAS Annual Meeting.

Mr Andy Goldberg

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

Prof Damian Griffin

Damian Griffin is the Professor of Trauma and Orthopaedic surgery at the University of Warwick. He trained in Cambridge, Oxford and the United States. He now leads one of the largest orthopaedic research groups in the UK, testing the clinical effectiveness of surgery.

Damian's clinical interest is in hip and groin surgery in young adults. He has a particular passion for hip preservation surgery, including hip arthroscopy and osteotomy around the hip, and provides the largest specialised service in this field in the UK. Focusing entirely on these problems, he treats a wide range of professional and recreational athletes.

Mr Kartik Hariharan

Mr. Kartik Hariharan is a Consultant Trauma and Foot and Ankle Surgeon at the Royal Gwent Hospital. He is the immediate past president of the British Orthopaedic Foot and Ankle Society having completed his term in November 2012. He is the Chairman of the Clinical Commissioning Guidance Group for the British Orthopaedic Association for Foot and Ankle Surgery and serves on the Podiatry Sub committee. He is a long serving member of the Wales Postgraduate Training programme and serves as a member of faculty for several organisations including AO international, University of Dundee and Cardiff University.

Mr.Hariharan lectures extensively and internationally and has many research interests including comparative anatomy and anthropology of the foot. He successfully completed the creation of the BOFAS Malawi Exchange programme and is part of the group that will host the first trainee surgeons from Malawi to the United Kingdom.

Mr Bill Harries

Bill Harries graduated from the London Hospital Medical College in 1985.

His clinical training was on the West London circuit before moving to Bristol as a senior registrar. He was appointed Consultant Orthopaedic and Trauma Surgeon to Frenchay Hospital Bristol in 1997. He has a special interest in adult orthopaedic foot and ankle problems and particularly arthroscopic surgery.

Mr Stephen Kearns

Consultant Orthopaedic Surgeon, Galway Regional Hospital Group.

Stephen Kearns graduated from the Royal College of Surgeons in Ireland in 1996. After completing Higher Surgical Training in Trauma & Orthopaedic Surgery on the Irish National programme, he undertook fellowships in Canada and the UK. In Canada, he spent a year at the Joint Replacement Institute in London, Ontario. He undertook a 7 month Foot & Ankle Surgery fellowship at the Royal Orthopaedic Hospital in Birmingham. This practice catered for all areas of foot and ankle pathology including arthroscopic surgery, instability surgery, hind and midfoot fusions as well as joint replacement.

He has published extensively in both national and international journals, and his research has won both national and international prizes including the British & European Orthopaedic Research Society (Mario Boni) Prizes. Ongoing areas of interest include lower limb trauma, the treatment of osteochondral lesions, surgery for hallux valgus and lower limb arthroplasty.

Ms Paula Kelly

Ms. Paula Kelly graduated from UCD in 1994. She completed Basic Surgical Training and became a Fellow of the Royal College of Surgeons in 1997. She went on to Higher Surgical Training in Orthopaedic and Trauma Surgery in Ireland and was awarded with the F.R.C.S (Orth & Trauma) in 2005. She completed a 2 year sub-speciality Fellowship in Montpellier, France in Paediatric Orthopaedic Surgery and Adult Foot and Ankle Surgery. She was added to the Specialist Register for Othopaedics and Trauma Surgery in 2008.

She has been appointed as a Consultant Orthopaedic Surgeon in Our Lady's Children's Hospital Crumlin, Tallaght Hospital and the Coombe Women and Infants University Hospital. Ms Kelly has an interest in all aspects of Foot and Ankle surgery including Hallux Valgus correction (percutaneous and open techniques), ankle arthroscopy, ankle arthrodesis and paediatric foot deformity correction.

John G. Kennedy, M.D., FRCS (Orth)

Dr. Kennedy is currently an Assistant Attending Orthopaedic Surgeon at the Hospital for Special Surgery in New York and an Assistant Professor of Orthopaedic Surgery at Cornell University Weill Medical College. Dr. Kennedy graduated from the Royal College of Surgeons in Dublin, Ireland in 1989 where he also later earned his Masters in Medical Sciences, Masters in Surgery, and Fellowship of the Royal College of Surgeons for orthopedics and traumatology.

He has since trained at St. Elizabeth Medical Center in Boston, Harvard Medical Children's Hospital Boston, Memorial Sloan- Kettering Cancer Center, and the Hospital for Special Surgery with emphasis on joint reconstruction, bone regeneration, orthopedic oncology, and foot & ankle surgery. Much of his interest is in Sports Medicine of the lower limb and particularly in surgical cartilage repair techniques and the use of biological adjuncts for cartilage healing and regeneration. Dr. Kennedy is very honored to have been invited to BOFAS Annual Meeting.

Prof Benjamin A. Lipsky

Professor Benjamin A. Lipsky graduated (with honors) from Cornell University Medical College (New York) then trained in internal medicine and infectious diseases at the University of Washington School of Medicine (Seattle). He is a Fellow in the American College of Physicians, the Infectious Diseases Society of America and the Royal College of Physicians (London). He was Professor, Department of Medicine at the University of Washington and was elected Emeritus Professor in 2012. During his time at the Veterans Affairs (VA) Puget Sound Health Care System in Seattle he served as head of the Infection Control Program, Medical Center Epidemiologist, Director of the Outpatient Parenteral Antibiotic Therapy Program, Director of the Primary Care Clinic and Director of the Seattle Antibiotic Research Clinic, where he conducted over 60 clinical trials. In 2012 he moved to Oxford, UK to work at their medical school and is a teaching associate at Green Templeton College as well as a visiting Professor of Medicine at the University of Geneva.

Professor Lipsky holds numerous editorial positions, is a member of many scientific societies, has published over 200 peer-reviewed scientific papers and over 100 abstracts, monographs and book chapters. He co-authored two books on antimicrobial therapy, one on diabetic foot infections and was a host on two nationally broadcast educational television series. He has spoken at numerous international meetings and been Visiting Professor at universities in the USA, Europe and Asia. Professor Lipsky has chaired the guidelines committees on both the International Working Group on the Diabetic Foot (IWGDF) and the Infectious Diseases Society of America (IDSA) since their inception. Among his honors are the Robert Wood Johnson Clinical Scolars Program Outstanding Mentors Award, the Edward James Olmos Award for Advocacy in Amputation Prevention which is "given annually to the clinician/scientist with the greatest impact on the diabetic foot worldwide" and the Roger Pecoraro Lecture Award, given annually by the American Diabetes Association and "recognizes a researcher who has made scientific contributions and demonstrates an untiring commitment to improving the understanding of the detection, treatment, and prevention of diabetic foot complications". In 2009 his book on diabetic foot infections received a First Prize (Endocrinology Category) in the British Medical Association Book Awards.

Mr Julian Livingstone

Julian Livingstone qualified in 1990 from what was originally Chelsea School of Chiropody. In 2002 he was appointed Consultant Podiatrist to Barnet & Chase Farm Hospitals NHS Trust, Department of Orthopaedics. This was the first such appointment of a muscular skeletal podiatrist to an orthopaedic team. Since 2002 Mr Livingstone has worked closely with the Orthopaedic Foot and Ankle Surgeons to develop the service the trust offers.

A Fellow of the Faculty of Podiatric Medicine of the Royal College of Physicians and Surgeons of Glasgow, Mr Livingstone is also an elected board member of the Faculty of Podiatric Medicine and General Practice of the College of Podiatry. He is a QIPP advisor to the National Institute of Clinical Excellence (N.I.C.E) and an AHP advisor to the Department of Health on adult and paediatric foot pathologies.

Prof Dr C Niek van Dijk

Niek van Dijk is full Professor in Orthopaedics and head of the Orthopaedic Department of the AMC-hospital (Academic Medical Centre Amsterdam, University of Amsterdam) and is specialized in surgery of the ankle and knee, sport traumatology and arthroscopic surgery. Apart from his university position in Amsterdam he has a position as head of the Foot and Ankle Section in the Clínica Saúde Atlântica – Estádio do Dragão, Porto, Portugal. He has a position as extra ordinary professor at the Minho University, Portugal.

Niek van Dijk was President ESSKA (European Society for Sport traumatology, Knee surgery and Arthroscopy) from 2010 till 2012 and is Congress President of the ESSKA-congress in May 2014. He was also Board Member of the ISAKOS (International Society of Arthroscopy, Knee surgery and Orthopaedic Sports Medicine) from 2007-2011. In 2012 he started www.ankleplatform.com which is a free accessible educational website. Niek van Dijk published over 250 scientific indexed publications and chapters and presents on average 25 international invited lectures a year. Overall, current research projects involve 25 PhD students.

Ms Honor Prout

Qualified in Dublin, moved to the Nuffield Orthopaedic Centre, Oxford, became senior nurse on the then recently established Bone Infection Unit. Developed a musculo-skeletal bone and joint infection service, managing clinical teams, I.V community teams and line insertion service and was also a member of the RCS Ilizarov faculty,

She became the first clinical education facilitator in Orthopaedics in Musgrave Park Hospital. In this post she developed the plaster techniques course which received BOA accreditation. She has held posts as a research associate and quality development manager prior to her present post of Clinical Nurse Specialist with the Foot and Ankle team, Belfast.

Mr Fred Robinson

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

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

Mr Matthew Solan

Matthew Solan graduated from St Thomas’ Hospital Medical School in 1992 and completed his training in Oxford, Guildford and London. He has worked overseas in South Africa and at the Universities of Johns Hopkins and Maryland, Baltimore, USA.

His NHS post is at the Royal Surrey County Hospital, Guildford. He has research links with the University of Surrey.

Matt has published extensively on foot and ankle surgery. He teaches on National and International courses. His training commitments include being Programme Director for both Orthopaedic Surgery and Core Surgical Training in Kent, Surrey and Sussex and Examining for the Intercollegiate Board FRCS (Tr&Orth).

Mr Alan Walker

Alan Walker is Head of Northern Ireland Affairs at the General Medical Council (GMC). Having set up the GMC's office in Belfast in December 2005, Alan is responsible for managing the GMC's relationships across government, politicians, doctors and their representatives, patients and their representatives, regulatory organisations and other key stakeholders in Northern Ireland. He is one of the GMC's representatives on the Northern Ireland Revalidation Delivery Board.

Previously Alan spent 10½ years at the General Consumer Council for Northern Ireland leading policy on a number of areas including water charging, public transport, energy, retailing and banking. Alan is Chair of George Best Belfast City Airport Consultative Forum and was previously Chair of the Northern Ireland Government Affairs Group. Alan lives in Belfast and is married with three children.

Mrs Gillian Walker

Gillian studied Physiotherapy in Trinity College Dublin. Having worked extensively in the field of sports medicine, with the Football Association of Ireland, Irish Swimming and the Olympic Council, she now has a specific interest in Lower Limb biomechanics, rehabilitation and orthotic prescription. She teaches Clinical Biomechanics of the Lower Limb at postgraduate level.

She works in private practice running the Court Clinic in Dublin. Their approach integrates the management of lower limb conditions from a physiotherapy assessment and gait analysis through to their treatment and rehabilitation providing orthotics and shoes as part of the process.

BOFAS
British Orthopaedic Foot & Ankle Society

Annual Scientific Meeting 2013

Programme 2013

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WEDNESDAY, 6TH NOVEMBER 2013

07.30			Registration
08.00			**SYMPOSIUM: BOFAS /ARUK** The Way Forward in Foot and Ankle Surgery Research *CHAIRS: Damian Griffin / James Calder / Matt Solan*
09.00			Welcome *Mr S A Henderson, President*
09.05	-	10.45	**INSTRUCTIONAL 1 - Talipes Equino Varus** *CHAIRS: Michael Stevens / Rick Brown*
09.05	-	09.25	Embryology / Pathophysiology/ Epidemiology/ Anatomy *Paula Kelly*
09.25	-	09.45	Standard Management *Catherine Duffy*
09.45	-	10.05	Management of the Complex Club Foot *Gavin DeKiewiet*
10.05	-	10.25	Reconstrucion for Neglected / Recurrent Deformity *Sunil Dhar*
10.25			Discussion
10.45	-	11.15	Tea / Coffee / Trade
11.15	-	13.00	**Free Papers 1 (1 - 15)** *CHAIRS: Andy Goldberg / Derek Park*
13.00	-	1400	Lunch / Trade
14.00	-	15.30	**INSTRUCTIONAL 2 - Trauma (Ankle and Hindfoot)** Calcaneal Fractures - Where are we now? *CHAIRS: Chris Blundell / Jit Mangwani*
14.00			UK RCT: Surgery vs Conservative Treatment *Prof. Damian Griffin*
14.20			Discussion
14.30			**DEBATE** The Majority of Calcaneal Fractures *should not be* managed surgically *Jim Barrie*
14.40			The Majority of Calcaneal Fractures *should be* managed surgically *Mark Easley*
14.50			Discussion
15.00	-	15.30	Guest Lecture: Lisfranc Injuries *Mike Aronow*
15.30	-	16.00	Tea / Coffee / Trade
16.00	-	18.00	**INSTRUCTIONAL 3 - Infection in the Foot and Ankle** *CHAIRS: James Davis / Andrew Adair*
16.00	-	16.15	Revascularisation in Patients with Foot and Ankle Infection *Paul Blair*
16.15	-	16.35	Implant Sepsis in the Foot and Ankle - Diagnosis / Management *Tony Berendt*
16.35	-	16.55	Infection in the Diabetic Foot *Ben Lipsky*
16.55	-	17.10	An American Perspective *John Kennedy*
17.10	-	17.20	Optimal Care in the Community for Patients with Foot Sepsis *Honor Prout*
17.20	-	17.45	Discussion
18.30	-	19.30	Civic Reception - Belfast City Hall
19.30	-	23.30	Dinner - Own arrangements / Trade

THURSDAY, 7TH NOVEMBER 2013

08.00			Registration
09.00	-	10.30	**PROBLEM CASES** : Library bar *CHAIRS: Kartik Hariharan / Anna Chapman*
09.30	-	10.30	**JOINT INSTRUCTIONAL COURSE with AHPs** : Main Hall Tibialis Posterior Tendon Dysfunction *CHAIRS: Andy Molloy / Mark Davies*
09.30	-	09.50	The Role of Orthotics *Julian Livingstone*
09.50	-	10.10	The Role of Physiotherapy *Gillian Walker*
10.10	-	10.30	Surgery for Types 1 and 2 *Mike Aronow*
10.30	-	11.00	Tea / Coffee / Trade for AHP Programme
11.00	-	12.30	**JOINT INSTRUCTIONAL COURSE with AHPs :** Tibialis Posterior Tendon Dysfunction *CHAIRS: Andy Molloy / Mark Davies*
11.00	-	11.20	Surgery for Types 3 and 4 *Mark Easley*
11.20	-	11.30	Discussion
11.30	-	11.50	Multidisciplinary Team Working: The Heel Pain Clinic *Matt Solan & team*
11.50	-	12.00	Discussion
12.00	-	12.30	Networking for AHP's - The Role of AFAP *Noelene Davis*
10.30	-	13.00	**WORKSHOPS** (1) "Osteosynthesis, have you reached your peek?" A practical introduction to Mini MaxLock & MaxLock Extreme Screw & Plating Systems *Tornier Workshop - Copenhagen Room* (2) MICA - Minimally Invasive Foot Surgery – Dr Joel Vernois & Mr Lloyd Williams *WG Healthcare Workshop - Dublin Room 1* (3) Saw bone workshop using the latest VA-LCP Ankle Plating System *DuyPuy Synthes Ltd Workshop - Dublin Room 2* (4) OxBridge AFN Hindfoot Nail - Paul Cooke *OrthoSolutions Ltd Workshop - Rotunda Room* *CHAIR: Bill Harries*
13.00	-	1400	Lunch / Trade
14.00	-	15.30	**Free Papers 2 (16 - 28)** *CHAIRS: Andy Molloy / Anthony Perrera*
15.30	-	16.00	Tea / Coffee / Trade
16.00	-	17.45	**INSTRUCTIONAL 4 - Cartilage Injury and Repair in the Ankle** *CHAIRS: Nilesh Makwana / Andrew Bing*
16.00	-	16.15	Chondral Injury - Diagnosis, Imaging, Classification *Stephen Kearns*
16.15	-	16.30	Chondral Injury and the Pathogenesis of OA in the Ankle *James Calder*
16.30	-	16.45	Cartilage Healing and How can it be Enhanced? *John Kennedy*
16.45	-	17.00	Arthroscopic Management of Cartilage Injury *Niek van Dijk*
17.00	-	17.15	Allograft for Massive Osteochondral Damage - Current Status *Mark Easley*
17.15	-	17.45	Discussion
18.30 - 23.30			Titanic Centre Exhibition BOFAS Dinner

FRIDAY, 8TH NOVEMBER 2013

07.45			Registration
08.00	-	08.45	**Early Bird sessions : Outcomes - SOFA** *CHAIRS: Bill Harries / Chris Blundell / Andy Goldberg*
08.45	-	08.55	The Foot *Rami Abboud*
09.00	-	10.30	**Free Papers 3 (29 - 40)** *CHAIRS: Mark Davies / Callum Clark*
10.30	-	11.00	Tea / Coffee / Trade
11.00	-	13.00	**INSTRUCTIONAL 5 - Miscellany**
			Total Ankle Replacement *CHAIRS: Paul Halliwell / Ahmad Malik*
11.00	-	11.15	NJR : 3 Year Update *Andy Goldberg*
11.15	-	11.45	Guest Lecture: The Evolution of Total Ankle Replacement in the USA *Mark Easley*
			Surgical Podiatry *CHAIR: Steve Bendall*
11.45	-	11.55	UK Issues *Fred Robinson*
11.55	-	12.05	USA Issues *Mike Aronow*
12.05	-	12.15	Discussion
			Revalidation: Where are we now and Where are we going? *CHAIR: Fred Robinson / Gary Colleary*
12.15	-	12.25	Revalidation: Where we are now *Alan Walker (GMC)*
12.25	-	12.35	Revalidation : What can the BOA do to help *Tim Briggs (BOA)*
12.35	-	12.45	Revalidation for Foot and Ankle Surgery - Where are we going *Steve Bendall (BOFAS)*
12.45	-	13.00	Best Paper / Best Poster Prizes *President / Bill Harries*
13.00	-	13.30	Lunch
13.30	-	15.15	AGM *Council*
15.15	-	15.30	Presidential Handover to Steve Bendall *Simon Henderson*
			Close

DePuy Synthes at BOFAS 2013

Exclusive event

On Thursday 7th November 2013, at BOFAS, DePuy Synthes will be holding a VA-LCP Ankle Trauma System 2.7/3.5 Workshop. Please see a DePuy Synthes team member, on the DePuy Synthes stand, during the event to obtain more details.

VA-LCP Ankle Trauma System 2.7/3.5
Our most comprehensive ankle plating system

DePuy Synthes Companies of Johnson & Johnson is the largest, most innovative and comprehensive orthopaedic and neurological business in the world, built upon the strong legacies of two great companies. We are a total solutions company. DePuy Synthes Companies offer an unparalleled breadth and depth of technology, devices, services and programs in the areas of joint reconstruction, trauma, spine, sports medicine, neurological, cranio-maxillofacial, power tools and biomaterials. Our broad array of inspired, innovative and high quality offerings help advance the health and wellbeing of people around the world.

The Trauma business offers a broad portfolio of orthopaedic fracture fixation products, including screws, plates, nails and other implants used to fix broken bones.

The unmet needs in orthopaedic and neurological care are significant. With insights from patients, physicians, providers, payors and policymakers to guide us, DePuy Synthes Companies are uniquely positioned to meet these needs and deliver life-changing medical innovation. At DePuy Synthes Companies, we aspire to be your partner of choice, delivering high standards of quality in everything we do.

DePuy Synthes *People inspired*™
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British Orthopaedic Foot & Ankle Society

Annual Scientific Meeting 2013

FREE PAPERS SUMMARY

FREE PAPERS

Wednesday, 6th November 2013

CHAIRS: Andy Goldberg / Derek Park

FP1 : 11.15

Correlation and comparison of syndesmosis dimension on CT and MRI

F. Wong[1], N. Mushtaq[1], I.T. Jones[1], S. Singh[1], A. Abbasian[1] , R. Mills[1]
[1]Guy's and St Thomas' Hospital Foundation NHS Trust, Adult Foot and Ankle Reconstruction Unit, London, United Kingdom

FP2 : 11.20

Validating loads going through the lower limbs in various positions during a weight-bearing CT scanner

M. Shamsuddin[1], I. McCarthy[1], D. Singh[1], A. Goldberg[1]
[1]UCL, Institute of Orthopaedics, Stanmore, United Kingdom

FP3 : 11.25

Early evaluation of a cone based weightbearing CT scanner in foot and ankle patients

D. Singh[1], A. Goldberg[1], A. Turner[1], N. Cullen[1]
[1]Royal National Orthopaedic Hospital, Foot and Ankle Unit, Stanmore, United Kingdom

DISCUSSION : 11.30

FP4 : 11.36

Does the presence of intra-articular pathology affect the outcome following modified Brostrom repair for lateral ligament instability of the ankle?

R. Kakwani[1], A. Higgs[1], S. Hepple[1], W. Harries[1], I. Winson[1]
[1]Avon Orthopaedic Centre, Southmead Hospital, Bristol, United Kingdom

FP5 : 11.41

The role of non-operative management in the treatment of the Jones fracture: a six-year series

A.C. Keenan[1], A.M. Wood[1], R.M. Boyle[2], F.C. Doogan[2], C. Court-Brown[1]
[1]University of Edinburgh, Edinburgh, United Kingdom,
[2]University of Aberdeen, Aberdeen, United Kingdom

FP6 : 11.46

Does intra-osseous fixation with the IO FiX improve force and contact area in foot and ankle fusions?

L. Parker[1], P. Ray[2], S. Grechenig[3], W. Grechenig[3]
[1]The Royal National Orthopaedic Hospital, Middlesex, United Kingdom,
[2]Barnet Hospital, London, United Kingdom,
[3]Medical University of Graz, Department of Traumatology, Graz, Austria

DISCUSSION : 11.51

FP7 : 11.57

Intra operative radiation exposure increases when trainee orthopaedic surgeons are allowed to operate on ankle fractures

A. Kheiran[1], D. Makki[1], P. Banerjee[1], D. Ricketts[1], D.Fergusson[1]
[1]Brighton Sussex University Hospitals, Trauma and Orthopaedics, Brighton, United Kingdom

FP8 : 12.02

Does functional outcome depend on the quality of the fracture fixation? Inter-observer variability of radiological evaluation of surgical ankle fracture fixation. Analysis of 61 cases

S. Lipscombe[1], K. Studnicka[1], A. Molloy[1]
[1]Aintree Hospital, Liverpool, United Kingdom

FP9 : 12.07

Outcomes and complications of 76 operatively treated pilon fractures of the distal tibia

A. Lomax[1], A. Singh[1], N.J. Madeley[1], C.S. Kumar[1]
[1]Glasgow Royal Infirmary, Glasgow, United Kingdom

DISCUSSION : 12.12

FP10 : 12.18

Severe foot and ankle injuries at trauma units: a relic of the past?

A.G.C. Hay-David[1], S.A. Clint[1], R.R. Brown[1]
[1]Cheltenham General Hospital, Trauma & Orthopaedics, Cheltenham, United Kingdom

FP11 : 12.23

A comparison of operative versus non-operative management of displaced intra-articular fractures of the os-calcis

T.L. Walker[1], S. Akhtar[1], A.A. Henderson[1]
[1]Royal Bolton Hospital, Bolton, United Kingdom

FP12 : 12.28

The epidemiology of calcaneal fractures requiring operative fixation: our 10 years' experience

O. Salar[1], F. Shivji[1], J. Holley[1], B. Choudhry[1], A. Taylor[1], C.G. Moran[1]
[1]Queens Medical Centre, Nottingham, United Kingdom

DISCUSSION : 12.33

FP13 : 12.39

A 10-year report of post-operative complications of calcaneal fractures treated by internal fixation: who is at risk?

O. Salar[1], F. Shivji[1], J. Holley[1], B. Choudhry[1], A. Taylor[1], C.G. Moran[1]
[1]Queens Medical Centre, Nottingham, United Kingdom

FP14 : 12.44

Percutaneous arthroscopic calcaneal osteosynthesis (PACO) for significantly displaced intra-articular calcaneal fractures

P.S. Pastides[1], L. Milnes[1], P. Rosenfeld[1]
[1]St Mary's Hospital, Foot and Ankle Unit, London, United Kingdom

FP15 : 12.49

Mini-open arthroscopic-assisted calcaneal osteosynthesis (MACO): initial experience with severely comminuted intraarticular fractures

N. Patel[1], H. Zaw[1]
[1]Hillingdon Hospital, Trauma and Orthopaedic Surgery, London, United Kingdom

DISCUSSION : 12.54

LUNCH / TRADE / POSTER VIEWING : 13.00

FREE PAPERS

Thursday, 7th November 2013

CHAIRS: Andy Molloy / Anthony Perrera

FP16 : 14.00

A new scoring system for sesamoid displacement in hallux valgus

J. Widnall[1], A. Perera[2], A. Molloy[1]
[1]Aintree University Hospital NHS Foundation Trust, Liverpool, United Kingdom,
[2]University Hospital of Wales, Llandough, United Kingdom

FP17 : 14.05

Does bunion surgery actually narrow the foot? Assessment of outcomes of surgery using traditional angles and a new radiographic measure of severity - the forefoot: hindfoot ratio. Correlation with clinical outcomes

A.M. Perera[1], L. Beddard[1], A. Marudunayagam[1]
[1]University Hospital of Wales, Cardiff, United Kingdom

FP18 : 14.10

The management of severe hallux valgus with the Chevron osteotomy: clinical and radiological outcomes

A.M. Perera[1], L. Beddard[1], A. Marudunayagam[1],
[1]University Hospital of Wales, Cardiff, United Kingdom

FP19 : 14.15

A case-controlled study of minimally invasive vs open hallux valgus surgery

A.M. Perera[1], L. Beddard[1], A. Marudunayagam[1]
[1]University Hospital of Wales, Cardiff, United Kingdom

DISCUSSION : 14.20

FP20 : 14.28

Zadek's calcaneal osteotomy for insertional Achilles pathology

N.K. Kelsall[1], A.W. Chapman[1], A. Sangar[1], M.J. Farrar[1], H.P. Taylor[1]
[1]Royal Bournemouth Hospital, Bournemouth, United Kingdom

FP21 : 14.33

The anatomical relationships of the gastrocnemius and peroneus longus muscles, determining the practicality of a novel tendon transfer

P.R. Patterson[1,2], B. Siddiqui[1], M.S. Siddique[3], C.S. Kumar[4], Q.A. Fogg[2]
[1]Gateshead Health NHS Foundation Trust, Department of Orthopaedics, Gateshead, United Kingdom,
[2]Articulation Research Laboratory, Department of Anatomy, Glasgow University, Glasgow, United Kingdom,
[3]Freeman Hospital, Department of Orthopaedics, Newcastle Upon Tyne, United Kingdom,
[4]Glasgow Royal Infirmary, Department of Orthopaedics, Glasgow, United Kingdom

FP22 : 14.38

Extracorporeal shockwave for plantar fasciitis: continuing good results

H.K. Ribee[1], A. Bhalla[1], A. Patel[1], B. Johnson[1], J. Leah[2], A. Bailey[2], C. Chapman[1], A. Bing[1], S.O. Hill[1], P. Laing[1], N. Makwana[1], K. Thomason[3], C. Marquis[1]
[1]Robert Jones and Agnes Hunt Hospital, Department of Foot and Ankle Surgery, Oswestry, United Kingdom,
[2]Robert Jones and Agnes Hunt Hospital, Department of Physiotherapy, Oswestry, United Kingdom,
[3]Countess Of Chester Hospital, Department of Trauma and Orthopaedic Surgery, Chester, United Kingdom

DISCUSSION : 14.43

FP23 : 14.49

Improving the consent process in foot and ankle surgery: use of patient specific literature

C. Cowan[1], R. Ahluwalia[2], N. Howard[2], M. Hennessy[2], S. Platt[2]
[1]Liverpool University Medical School, Liverpool, United Kingdom,
[2]Wirral University Hospitals NHS Trust, Foot and Ankle, Wirral, United Kingdom

FP24 : 14.54

Reduction in re-rupture rate using a new standardised Achilles tendon rupture pathway and protocol in a dedicated clinic

A.-M. Hutchinson[1], D. Beard[1], R. Evans[2], C. Topliss[1], P. Williams[1]
[1]ABMU Trust, Swansea, Trauma & Orthopaedics, Swansea, United Kingdom,
[2]ABMU Trust, Swansea, Radiology, Swansea, United Kingdom

FP25 : 14.59

An evaluation of retrospective SF-12 and Foot Function Index (FFI) outcome scores in elective foot and ankle surgery

J. Widnall[1], P. Ralte[1], D. Selvan[1], A. Molloy[1]
[1]Aintree University Hospital NHS Foundation Trust, Liverpool, United Kingdom

DISCUSSION : 15.04

FP26 : 15.10

Incidence of clinically relevant venous thromboembolism after foot and ankle surgery

T.A. Ball[1], M. Daoud[1], E. Jabil[1], R. Kincaid[1]
[1]Royal Cornwall Hospitals Trust, Truro, United Kingdom

FP27 : 15.15

Venous throboembolism (VTE) prophylaxis following elective hindfoot surgery

J. Logan[1], B. Jowett[1], I. Lasrado[1], S. Hodkinson[1], L. Cannon[1]
[1]Portsmouth Hospitals NHS Trust, Trauma and Orthopaedics, Portsmouth, United Kingdom

FP28 : 15.20

Analysis of current venous thromboembolism risk assessment tools in trauma patients treated with cast immobilisation

A.M. Perera[1], U. Watson[1]
[1]University Hospital of Wales, Cardiff, United Kingdom

DISCUSSION : 15.25

COFFEE / TRADE / POSTER VIEWING : 15.30

FREE PAPERS

Friday, 8th November 2013

CHAIRS: Mark Davies / Callum Clark

FP29 : 09.00

A comparison of non-union rates following first metatarsophalangeal joint fusion with three dorsal plating systems

E.J. Bass[1], S. Sirikonda[1], C. Walker[1]
[1]Royal Liverpool and Broadgreen University Hospital Trust, Trauma and Orthopaedics, Liverpool, United Kingdom

FP30 : 09.05

Arthroscopic resection of talocalcaneal coalitions: a bicentre case series of a new technique

N.A. Jagodzinski[1], A. Hughes[2], N.P. Davis[1], M. Butler[1], I.G. Winson[2], S.W. Parsons[1]
[1]The Royal Cornwall Hospital, Trauma & Orthopaedics, Truro, United Kingdom,
[2]Avon Orthopaedic Hospital, Trauma & Orthopaedics, Bristol, United Kingdom

FP31 : 09.10

Arthroscopic triple and modified double hindfoot arthrodesis: technical note and case series

N.A. Jagodzinski[1], A.M.J. Parsons[1], S.W. Parsons[1]
[1]The Royal Cornwall Hospital, Trauma & Orthopaedics, Truro, United Kingdom

DISCUSSION : 09.15

FP32 : 09.21

Short term outcomes of total ankle replacements

R. Zaidi[1]
[1]UCL, Stanmore, United Kingdom

FP33 : 09.26

13-19 year results of a consecutive series of 200 Scandinavian Total Ankle Replacements (STAR): the Wrightington experience

T. Clough[1], C. Talbot[1], P. Siney[1], M. Karski[1]
[1]Wrightington Hospital, Wigan, United Kingdom

FP34 : 09.31

Comparative study of the Nottingham Foot and Ankle Unit outcomes of the Scandinavian Total Ankle Replacement (STAR) and the mobility total ankle replacement

M. Raglan[1], A. Taylor[1], S. Dhar[1]
[1]Nottingham University Hospitals, Nottingham, United Kingdom

DISCUSSION : 09.36

FP35 : 09.42

A prospective randomised controlled trial of hyaluronic acid in patients with symptomatic ankle osteoarthritis

R. Refaie[1], M. Chong[1], A. Murty[1], M. Reed[1]
[1]Northumbria Healthcare, Ashington, United Kingdom

FP36 : 09.47

Too young for an ankle replacement? Does the age of a patient impact on outcome following total ankle replacement

R. Varrall[1], A. Singh[2], J. Ramaskandhan[2], M.S. Siddique[1]
[1]Newcastle upon Tyne Hospitals NHS Foundation Trust, Department of Orthopaedics, Newcastle upon Tyne, United Kingdom,
[2]Newcastle upon Tyne Hospitals NHS Trust, Orthopaedic Research, Newcastle upon Tyne, United Kingdom

FP37 : 09.52

Return to work after total ankle replacement: a cross sectional study

A. Singh[1], S. Anjum[1], J. Ramaskandhan[1], M. Siddique[1]
[1]Freeman Hospital, Orthopaedic Department, Newcastle upon Tyne, United Kingdom

DISCUSSION : 09.57

FP38 : 10.03

Gait analysis following MobilityTM total ankle replacement (TAR)

J.R. Ramaskandhan[1], P. Hewart[2], M.S. Siddique[1]
[1]Newcastle upon Tyne Hospitals NHS Foundation Trust, Department of Orthopaedics, Newcastle upon Tyne, United Kingdom,
[2]Newcastle upon Tyne Hospitals NHS Foundation Trust, Newcastle upon Tyne, United Kingdom

FP39 : 10.08

What are the risks for early failure of total ankle replacement? Is there a valid classification?

R.J. Gadd[1], T.W. Barwick[1], E. Paling[1], M.B. Davies[1], C.M. Blundell[1]
[1]Northern General Hospital, Sheffield, Sheffield Foot & Ankle Unit, Sheffield, United Kingdom

FP40 : 10.13

Tibiotalocalcaneal (TTC) fusion with a hindfoot nail and femoral head allograft for failed total ankle replacements (TARs)

J.G. Reading[1], M. Portelli[1], M.J. Rogers[1], R.J. Sharp[1], P.H. Cooke[1]
[1]Nuffield Orthopaedic Centre, Oxford University Hospitals NHS Trust, Oxford, United Kingdom

DISCUSSION : 10.18

COFFEE / TRADE / POSTER VIEWING : 10.30

British Orthopaedic Foot & Ankle Society

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FREE PAPERS ABSTRACTS

FREE PAPERS

Wednesday, 6th November 2013

FP1

Correlation and comparison of syndesmosis dimension on CT and MRI

F. Wong[1], N. Mushtaq[1], I.T. Jones[1], S. Singh[1], A. Abbasian[1], R.Mills[1]
[1]Guy's and St Thomas' Hospital Foundation NHS Trust, Adult Foot and Ankle Reconstruction Unit, London, United Kingdom

INTRODUCTION: Recent published studies have examined the normal dimensions of the syndesmosis on CT. However, previous anatomical studies have shown variations of the articulating facets within the tibialae fibularis and may contribute to the false appearance of increased spacing within the syndesmosis.

In this study, we measured and compared anterior and posterior distances of the distal tibiofibular (DTF) syndesmosis on MRI and CT imaging.

METHODS: We identified adult patients who had had both a CT scan and an MRI scan of their ipsilateral ankle to investigate symptoms unrelated to the DTF syndesmosis. The anterior and the posterior DTF dimensions were measured on CT and MRI axial images, at the level of the distal tibial physeal scar. This was taken from anterior tubercle of tibia and from the most anterior aspect of the posterior tibial tubercle to the nearest point of medial aspect of the fibula. The geometrical shapes of the syndesmosis and the anterior tibial tubercle were also recorded.

RESULTS: 16 ankles in 15 patients were included. The mean age was 34.6+/-8.8 years. The mean (SD) for the anterior DTF distance was 2.0mm (0.7mm) on MRI and 2.9mm (0.9mm) on CT whilst the mean posterior DTF distance was 3.2mm (1.1mm) on MRI and 4.3mm (1.0mm) on CT. This difference reached statistical significance ($p < 0.001$, paired T-test).

When examining the shape of the syndesmosis on MRI, 56% were crescent and 44% rectangular, this was compared to 69% and 31%, respectively, on CT. There was, however, no statistical difference in the shape of the syndesmosis between the two radiological modalities ($p = 0.625$, McNemar test).

CONCLUSION: CT appears to over-estimate the distal tibiofibular separation and may lead to a false positive diagnosis. Further studies are needed to establish the reliability in the use of CT scans to investigate normal and abnormal syndesmosis.

FP2

Validating loads going through the lower limbs in various positions during a weight-bearing CT scanner

M. Shamsuddin[1], I. McCarthy[1], D. Singh[1], A. Goldberg[1]
[1]UCL, Institute of Orthopaedics, Stanmore, United Kingdom

AIMS: With the advent of standing CT and MRI scans, there is increasing interest in establishing the role and usefulness of these investigations. When ordering a standing investigation, we assume that 100% of body weight is loaded through the limb, but most machines have handlebars for support and some have seats to allow patients the opportunity to sit. The aim of this study was to evaluate the amount of load going through the lower limbs in various positions supported and unsupported, to explore the range and variation in measurements obtained.

METHODS: Following ethics and local IRB approval, 40 healthy volunteers were asked to stand on an electronic weighing scales and be measured for height. They were then asked to stand on an identical electronic weighing scale on the PedCAT standing CT.

Their weight was measured single and double leg stance, with the hands supported and unsupported on the side bars. The subjects were then asked to sit with a single and then both legs on the scale.

RESULTS: 40 subjects participated. 28 were female, average BMI 25.8 (4.98). By holding on to the hand rails between 10-20% (2.0) of body weight was removed. Single stance meant 85% (4.0) of body weight went through the single limb and by sitting, with the single limb on the scanner only 8.8% (2.3) of body weight goes through the limb.

CONCLUSIONS: Standing CT and MRI are increasing in popularity. We now know that in standing the majority of body weight is transferred to the limbs, but if the subject is holding onto support up to 20% of body weight is removed. If the subject is sitting then only 9% of body weight goes through the single limb. This information will help inform future studies that use weight bearing MRI or CT.

FP3

Early evaluation of a cone based weightbearing CT scanner in foot and ankle patients

D. Singh[1], A. Goldberg[1], A. Turner[1], N. Cullen[1]
[1]Royal National Orthopaedic Hospital, Foot and Ankle Unit, Stanmore, United Kingdom

INTRODUCTION: Cone Based CT (CBCT) scanning uses a point source and a planar detector with parallel data acquisition and volumetric coverage of the area of interest. The pedCAT (Curvebeam USA) scanner is marketed as a low radiation dose, compact, faster and inexpensive CT scanner that can be used to obtain both non- weightbearing and true 3 dimensional weightbearing views.

METHOD: A review of the first 100 CBCT scanning in our unit has been performed to assess ease of scanning, imaging time, radiation dose and value of imaging as opposed to conventional imaging.

RESULTS: A pedcat CT scan was available within minutes of the request, similar to plain radiographs but much earlier than a 6 week delay for a patient to attend a new appointment for a conventional CT. All patients returned to see the clinician for a clinical decision in the same NHS clinic and did not require a new clinic visit; illustrative cases include fracture/ subluxation detection, surgical planning, extent of arthritis and 3D assessment of union of arthrodeses.

All patients were able to transfer to the scanner with ease and the imaging time was 10 times than a conventional CT.The radiation dose to the patients was 9% that of a full gantry system.

Weightbearing CT scanning enabled a 3D evaluation of reduction of joint space and ankle/ hindfoot alignment. Anterior ankle and sesamoid impingement have been diagnosed in patients with previously obscure pain

CONCLUSION: 3D Cone Beam imaging has been found to be easily accessible, rapidly performed and safer to the patient in providing a lower radiation dose. Weightbearing 3D imaging provides additional diagnostic information.

FP3

Does the presence of intra-articular pathology affect the outcome following modified Brostrom repair for lateral ligament instability of the ankle?

R. Kakwani[1], A. Higgs[1], S. Hepple[1], W. Harries[1], I. Winson[1]
[1]Avon Orthopaedic Centre, Southmead Hospital, Bristol, United Kingdom

AIM: Ankle sprains are one of the most common sports injuries. Around 10 -20 % of the acute ankle sprains may lead to the sequelae of chronic ankle instability. Around 15-35% of the patients have residual pain following successful lateral ligament reconstruction. One of the reasons suggested for the persistent symptoms following lateral ligament reconstruction has been the presence of intra-articular pathology.

METHODS AND MATERIALS: We performed ankle arthroscopy on all patients undergoing the modified Brostrom repair and compared patients with associated intra-articular pathology to those without any intra-articular pathology.

RESULTS: A total of 35 patients underwent the modified Brostrom procedure during the study period. 11/25 patients were found to have associated intra-articular pathology. The average age for both the groups was 33 years. The average follow-up duration was 75 months and 71 months for the intra-articular pathology group and the normal articular groups respectively. The difference in the SAFAS (Sports athlete foot and ankle score) was statistically better in the group without any intra-articular pathology (93.7 compared to 71.6, p-value < 0.05)

CONCLUSIONS: The patients who have an associated intra-articular pathology whilst undergoing the stabilisation of lateral ligament instability of the ankle have a slightly poorer outcome compared to those without any intra-articular pathology**.**

Secondly, the SAFAS scoring system seems to overcome the ceiling effect seen in other scoring systems when used for the athletic population.

FP5

The role of non-operative management in the treatment of the Jones fracture: a six-year series

A.C. Keenan[1], A.M. Wood[1], R.M. Boyle[2], F.C. Doogan[2], C. Court-Brown[1]
[1]University of Edinburgh, Edinburgh, United Kingdom,
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The orthopaedic literature appears to highlight the Jones fracture of the fifth metatarsal, as being slow to heal, and having a high incidence of non-union.

The authors present the largest case series currently published of 117 patients who sustained a Jones fracture, demonstrating patient outcomes with conservative treatment.

A computer program was use to search the Emergency department database of the Edinburgh Royal infirmary notes data base for terms 5th metatarsal combined with a coding for referral to fracture clinic over a 6 years period from 2004-2010. The researchers went through the X-ray archive, identified and classified all 5th metatarsal fractures.

There were 117 patients in our series, Average time to discharge 13 weeks (4-24). 19% of patients took longer than 18 weeks for their fracture to clinically heal. At six weeks 34% were clinically healed, 59% at 12 weeks and 81% at 18 weeks. A refracture rate 6/117 5.1% was seen.

A similar number of patients were managed in cast (44/ 38%) and Moonboot (50/ 43%). Those treated with a Moonboot heal significantly faster that those treated in cast (p=0.0027).

A large proportion of Jones fractures have delayed healing, patients who are clinically asymptomatic may not have radiological healing.

FP6

Does intra-osseous fixation with the IO FiX improve force and contact area in foot and ankle fusions?

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When inserting a lag-screw across an arthrodesis, stress is concentrated under the screw head risking asymmetrical force distribution and fracture of the cortical bone bridge. The IO FiX (Extremity Medical, NJ USA) is a new intraosseous device comprising an X-Post on one side of and parallel to the arthrodesis and a lag-screw inserted through the head of the X-Post which reinforces the cortical bone bridge. The X-Post behaves as an internal washer improving force distribution across the arthrodesis. Being intraosseous, near to the neutral axis of bend also means the device is fatigue-resistant and soft tissue irritation is reduced.

The IO FiX has not been independently verified and therefore we analysed its performance in a human cadaveric ankle model. Our null hypothesis was there is no difference in force generation and contact area in an ankle arthrodesis when the IO FiX is compared with partially-threaded lag-screws.

We used ten randomized cadaver ankles with a mean age of seventy-one years (44-84 years) prepared with flat arthrodesis cuts. A Tek-scan (Boston, USA) pressure transducer was used to measure force and contact area produced when the IO FiX was compared with a standard lag-screw and washer.

The median average force in the IO FiX group was 3.95 kg and 2.35 kg in the lag-screw group (p=< 0.01 Wilcoxon signed-rank). The IO FiX was able to create a more uniform contact area within the arthrodesis with a median average of 3.41 cm2 compared with 2.42 cm2 in the lag-screw group (p=< 0.03 Wilcoxon signed rank).

Our results suggest the IO FiX improves force generation and contact area across the arthrodesis. With the theoretical advantages of reduced soft tissue irritation and a lower risk of fatigue failure, the IO FiX offers a significant advantage compared with traditional fixation techniques.

FP7

Intra operative radiation exposure increases when trainee orthopaedic surgeons are allowed to operate on ankle fractures

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INTRODUCTION: Unstable ankle fractures are commonly treated with operative fixation. Isolated lateral malleolus fractures (Weber B) are often operated by orthopaedic trainees.Operative fixation of these fractures is included in the index procedures of procedure based assessment (PBA) of intercollegiate Surgical Curriculum Programme (ISCP). Orthopaedic trainees are expected to be competent in this procedure by the end of their training. Fluoroscopic guidance is essential for adequate reduction and safe fixation of these fractures.

AIMS: It is currently unknown if patients are exposed to excess radiation when they are operated by trainees compared to consultant surgeons. It is a common perception that trainees take more time to fix these fractures compared to trained consultants thereby exposing patients to untoward effects of prolonged tourniquet time.

METHOD: A retrospective review of fifty patients undergoing operative fixation of Weber B lateral malleolus fractures were undertaken.Twenty five patients were operated by orthopaedic consultants and the remaining (n=25) by orthopaedic trainees.The tourniquet time and the intra-operative radiation dose using the fluoroscope were recorded.

RESULTS: Patients operated by trainees were exposed to significantly higher dose of intra-operative radiation (median, 6.5Gy vs 46.2Gy; interquartile range,0.87-15.8 vs 8.37-140.3;P=0.003). However, there was no statistical difference in the duration of application of the tourniquet in between the two groups (median, 59 minutes vs79 minutes; interquartile range, 45-95 vs 69-102; P=0.12).

DISCUSSION: This is the first study to indicate that patients are at risk of higher radiation exposure when operated by orthopaedic trainees whilst the times taken to fix Weber B ankle fractures are almost similar to those undergoing surgery by a consultant grade surgeon.

FP8

Does functional outcome depend on the quality of the fracture fixation? Inter-observer variability of radiological evaluation of surgical ankle fracture fixation. Analysis of 61 cases

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INTRODUCTION: Inadequate reduction and fixation of ankle fractures leads to poor clinical outcomes although there are no well-established criteria to evaluate the quality of surgical fracture fixation of the ankle. The aim of our study was to validate Pettrone's criteria that can be used in the radiological assessment of the quality of ankle fracture fixation that predict the functional outcome.

METHODS: A retrospective study was completed following the operative management of ankle fractures at a University teaching hospital between 1st January 2009 and 31st December 2009 were included in the study. Exclusion criteria were paediatric fractures, polytrauma, and fractures involving the tibial plafond. The fracture pattern was classified using the AO classification system. Three independent Foot and Ankle Consultants assessed the quality of surgical ankle fracture fixation using Pettrone's criteria. Aproximately one year following the surgery, functional outcome was obtained using Lower Extremity Function Score (LEFS) and a modified American Orthopaedic Foot and Ankle Society score (AOFAS). The Mann-Whitney test was used for the LEFS and AOFAS functional scores. Logistic regression was performed upon age and gender with regards to functional outcome. Given that the Kappa coefficient is a pair wise statistic, the average pair wise agreement for each category of the Pettrone criteria was also determined.

RESULTS: Sixty-one consecutive patients were included in the study with a mean age of 51years (17-74years) and a mean follow-up of 17.41 months (13-24months). Using Pettrone's criterias, mean interobserver agreement was 90.0% (89.4-92.6%) with inadequate reduction in 20 cases (32.5%). Mean LEFS following inadequate reduction was 47.5 (1-79) and following satisfactory reduction was 55.9 (9-80) p=0.03.

CONCLUSION: Pettrone's criteria has high interobserver agreement for the quality of surgical fracture fixation of the ankle which correlates with functional outcome.

FP9

Outcomes and complications of 76 operatively treated pilon fractures of the distal tibia

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INTRODUCTION: In this cohort study, we present comprehensive injury specific and surgical outcome data from one of the largest reported series of distal tibial pilon fractures, treated in our tertiary referral centre.

METHODS: A series of 76 pilon fractures were retrospectively reviewed from case notes, plain radiographs and computed tomography (CT) imaging. Patient demographics, injury and fracture patterns, methods and timing of fixation and clinical and radiological outcomes were assessed over a mean follow up period of 8.6 months (range 2-30).

RESULTS: Definitive fixation was most commonly performed through an open technique with plate fixation. CT imaging was used to plan the most direct approach to access the fracture fragments. The majority of cases were classified as AO/OTA 43.C3.

When definitive open fixation for closed fracture was performed within 48 hours, the rate of deep infection or wound complication was 0%. When performed on day 3-5, the deep infection rate was 0% but the superficial wound complication rate was 23.5%. From day six onwards, the deep infection rate was 4% and the superficial wound complication rate was 8%.

The rate of wound complications after double plate fixation of the tibia using two separate incisions was 23.1%, compared to 11.7% after single incision and plating.

The rate of non-union was 9.7%. Symptomatic post-traumatic arthritis requiring orthopaedic management occurred in 9.9%. Further surgery was required in 27.8% of all patients.

CONCLUSION: Outcomes from our unit compare favourably with those from large trauma centres worldwide. Our study supports the use of early definitive fixation, within 48 hours, to achieve low rates of wound complications. We support an “unsafe window” for definitive fixation of three to five days post injury due to the high rate of wound complications. The likelihood of developing post-traumatic arthritis and of requiring further surgery is high.

FP10

Severe foot and ankle injuries at trauma units: a relic of the past?

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INTRODUCTION: In April 2012 National Trauma Networks were introduced in England to optimise the management of major trauma. All patients with an ISS of ≥ 16 should be transferred to the regional Major Trauma Centre (level 1). Our hypothesis was that severe foot and ankle injuries would no longer be managed in Trauma Units (level 2).

METHODS: A retrospective analysis of the epidemiology of severe foot and ankle injuries was performed, analysing the Gloucestershire foot and ankle trauma database, from a Trauma Unit, for a catchment population of 750,000 people. The rate of open fractures, mangled feet and requirements for stabilisation with external fixation were reviewed before and after the introduction. This was compared to the foot and ankle injuries triaged to the regional Major Trauma Centre (MTC) using the TARN database information.

RESULTS: The incidence of open foot and ankle injuries was 2.9 per 100,000 per year. There were 5.1% open injuries before the Network and 3.2% after. There was no statistically significant change in the application of external fixators. The frequency of mangled feet was 3.6% before and 6% after the Network commenced, showing no significant fall.

Analysis of TARN data from the MTC demonstrated that only 18% of patients had an ISS ≥ 16. The majority of patients brought to the MTC with foot and ankle injuries were either polytrauma patients (43%) or required plastic surgery intervention for open fractures (69%). Only 4.5% of patients had isolated, closed foot and ankle injuries.

CONCLUSION: We found there to be no decrease in our numbers of mangled ankles, external fixations nor open fractures following the introduction of the Trauma Network. There is still a need for Foot & Ankle Surgeons at Trauma Units to manage complex foot and ankle injuries, because the majority have an ISS < 16.

FP11

A comparison of operative versus non-operative management of displaced intra-articular fractures of the os-calcis

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INTRODUCTION: The os-calcis is the most common tarsal bone to fracture. It can lead to a debilitating arthritis and has considerable socio-economic implications.

In the literature there is great debate as to whether operative or non-operative management has a better outcome. Previous smaller case series report improved results from surgery whereas the one randomised trial showed no overall benefit from surgery. However sub-group analysis identified patients that had a better outcome with operative management. Results from the UK heel fracture trial are awaited.

We present a 5 year series from a single centre, single surgeon that includes 143 fractures. There are currently no comparable published data.

METHODS: We reviewed 143 intra-articular fractures of the os calcis.

All fractures were evaluated using CT scans and classified according to Sanders system. The functional outcome of Sanders type 2 fractures were evaluated using Atkins scoring system.

Evaluation took place annually between 2 and 7 years post injury. A comparison was made between type 2 fractures treated operatively and those treated non-operatively.

RESULTS: 143 patients with Type 2 sanders fractures were reviewed from 2 years to 7 years post injury. 109 patients were treated operatively, 34 patients were treated non-operatively.

The mean score for 2 part fractures treated operatively was 76.52 (range 73-78 SD +/- 2.9).
The mean score for 2 part fractures treated non-operatively was 60.88 (range 59-69 SD +/- 5.76).
The mean difference in scores was 15.64. This was stastiscally significant. CI (11.4 - 19.24) $P < 0.05$

CONCLUSION: Data from our single centre, single surgeon series showed that patients with 2 part os calcis fractures have significantly better functional outcome than those managed non-operatively.

This is in keeping with smaller data sets in the published literature.

FP12

The epidemiology of calcaneal fractures requiring operative fixation: our 10 years' experience

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INTRODUCTION: Calcaneal fractures are rare but debilitating injuries assumed to affect particular demographic sub groups. This study aimed to relate epidemiological factors (age, gender, smoking status and social deprivation scores) to the incidence of calcaneal fractures requiring operative fixation over a 10-year period.

METHODS: Data (age, gender and smoking status) was extracted from a prospective trauma database regarding calcaneal fractures between September 2002 and September 2012. The Rank of Index of Multiple Deprivation (IMD) scores was collated for each patient and data sub-stratified in 20% centiles. 2010 National Census Data was used to formulate patient subgroups and incidences. Resulting data was subjected to statistical analysis through calculation of relative risk (RR) scores with 95% confidence intervals (95% CI).

RESULTS: 101 calcaneal fractures in 95 patients that underwent operative fixation were identified. 3 open fractures in 3 patients were excluded. In males, the annual incidence of calcaneal fractures requiring operative fixation was 5.10 per 100,000 compared to 1.25 per 100,000 in females (RR 1.60, 95% CI 1.45-1.77). The mean age in males was 36.8 years with a peak incidence between 20-29 years old. The mean age of females was 42.5 years with a peak incidence between 30-39 years old. In females, there was a more even spread throughout all ages with a gradual increase in incidence towards post-menopausal ages.

54 (55.1%) fractures requiring operative fixation occurred in smokers compared to 44 (44.9%) in non-smokers, (RR 2.00, 95% CI 1.39-2.88). Rank of IMD scores revealed 34.0 % of all fractures occurred in the top 20% (RR 1.7, 95% CI 1.28- 2.26) most deprived areas and 58.5% of fractures in the top 40% most deprived areas.

CONCLUSIONS: This study indicates that male gender, smoking status and high rank of multiple deprivation scores are independent characteristics associated with calcaneal fractures requiring operative fixation.

FP13

A 10-year report of post-operative complications of calcaneal fractures treated by internal fixation: who is at risk?

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INTRODUCTION: We report our 10-year experience of post-operative complications of calcaneal fractures treated by internal fixation and attempt to correlate these with previously cited patient risk factors.

METHODS: All calcaneal fractures treated by internal fixation in our Major Trauma Centre between September 2002 and September 2012 were identified. Patient indices (age, gender, smoking status and pre-existing co-morbidities), time to surgery and method of surgery (open reduction and internal fixation (ORIF) versus closed reduction and percutaneous fixation) were recorded. Primary outcome was the incidence of wound infection requiring intravenous antibiotics and/or re-operation. Statistical analysis through Mann-Whitney-Wilcoxon testing and relative risk ratio calculations with 95% Confidence Intervals (CI) was performed.

RESULTS: 98 calcaneal fractures in 92 patients were identified. 79 (80.6%) fractures occurred in males, 19 (19.4%) in females. 54 (55.1%) were smokers and 44 (44.9%) non-smokers. 18 (18.4%) were treated by closed reduction and percutaenous fixation and 80 (81.6%) by ORIF.

3 (3.1%) patients (all male) developed post-operative wound infection (RR 0.96, 95% CI 0.92-1.00), of which 1 was a smoker (RR 1.03 95% CI 0.95-1.11). All infections occurred in patients treated percutaneously (RR 6.33, 95% CI 3.99- 10.08). There was no significant difference in mean time to surgery (p=0.069) and mean age (p=0.31) for those patients experiencing wound complications and those who did not.

CONCLUSIONS: This study reports an overall wound infection rate in keeping with current literature. There was no statistically significant increased risk of wound infection in smokers or male patients. All infections occurred in patients who had percutaneous treatment.

These findings support the continued treatment of displaced calcaneal fractures by open reduction and internal fixation through a conventional extended lateral approach. There is no justification in denying surgery to males or smokers although these two factors have been cited as poor prognostic indicators in earlier studies.

FP14

Percutaneous arthroscopic calcaneal osteosynthesis (PACO) for significantly displaced intra-articular calcaneal fractures

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INTRODUCTION: Open reduction and internal fixation of displaced intra-articular calcaneal fractures is susceptible to a high incidence of wound complications. Displaced fractures create abnormal contact characteristics at the subtalar joint, resulting in poor functional outcome and arthritis. We present the functional outcomes of 32 fractures (Sanders 2 and 3) at an average follow up of two years.

METHODS: Over a 57 month period, 32 fractures (29 patients) underwent this technique in a London level 1 trauma centre. Open fractures were excluded.. The previously described technique with sinus tarsi portals was used. Pre and post-operative radiographs and functional outcomes were assessed.

RESULTS: Our patient cohort consisted of 20 male (23 fractures) and 9 female patients. Classification via the Sanders system revealed 37% 2A, 9% 2B, 41% 3AB, 9% 3AC and 3%3BC. Mean follow up period was 24,2 months (range 5-57). All patients were operated on within 7 days of injury. Average inpatient stay was 1.9 days. 1 patient sustained a port site infection which was managed conservatively, while screws were removed from 2 patients. We had no cases of deep infections. The Bohler's angle increased from 10 to 29 degrees post operatively. Mean modified AOFAS scores (maximum score 60) was 40.3 (11-60), average VAS was 29.8mm and CFS was 78.1. Importantly the majority of patients returned to their pre injury employment.

CONCLUSION: PACO is a demanding technique with an associated learning curve. However, our series shows that it is a safe and reproducible technique for significantly displaced intra-articular fractures. Post operative results are very encouraging with high levels of patient satisfaction and return to pre injury employment and activities. In addition it is a more cost effective treatment option as it is associated with minimal wound complications and a reduced hospital stay.

FP15

Mini-open arthroscopic-assisted calcaneal osteosynthesis (MACO): initial experience with severely comminuted intraarticular fractures

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INTRODUCTION: Percutaneous fixation of intraarticular calcaneal fractures adequately restore the subtalar joint with lower soft tissue complications and equivalent short-term results compared to open fixation. However, studies have largely focused on less severe fracture types (Sanders types 2/3). We report our initial experience of this relatively new Mini-open Arthroscopic-assisted Calcaneal Osteosynthesis (MACO) technique for more comminuted calcaneal fractures (Sanders types 3/4).

METHODS: We prospectively studied consecutive patients with intraarticular calcaneal fractures requiring surgical fixation between April 2012 and June 2013. MACO involves initial subtalar arthroscopic debridement, with subsequent fluoroscopic-assisted, mini-open reduction and fixation of depressed fragments using cannulated screws. Outcome scores (Manchester-Oxford Foot(MOXFQ), AOFAS Hindfoot and SF-36 questionnaires) and radiological parameters were recorded with a mean follow-up of 12 months (7-13).

RESULTS: There were 9 patients (7 M:2 F) with a mean age of 45.4 years (24-70). All had intra-articular joint depression-type fractures: 5 Sanders type 3 and 4 Sanders type 4. Mean time to surgery was 6.6 days (1-13), operating time was 89.4 minutes (66-130) and inpatient stay was 1.7 days (1-4). All wounds healed without complication and one patient required change of a long screw 11 days post-operatively. There were significant post-operative improvements in the mean Bohler's angle (-2°[-27.2-14.8] to 30°[10.2-41.3], $p< 0.0002$) and angle of Gissane (95°[66.2-111.7] to 111°[101.6-120], $p=0.004$). Mean outcome scores were 60.8(41-86) for MOXFQ and 75.3(55-92) for AOFAS Hindfoot, with 55.9% developing moderate/severe subtalar joint stiffness. Mean physical and mental SF-36 summary scores were 35.5(24.5-41.5) and 51.7(40.8-61.7) respectively.

CONCLUSION: We describe the MACO technique for Sanders types 3/4 calcaneal fractures. There were no soft tissue complications with good short-term outcomes, despite a reduction in hindfoot mobility. Restoration of the joint and bone stock without infection is desirable in the event of subsequent arthrodesis. We propose MACO is a valuable alternative technique to open fixation.

FREE PAPERS
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FP16
A new scoring system for sesamoid displacement in hallux valgus
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INTRODUCTION: It has been shown that inadequate reduction of the sesamoids can lead to recurrent hallux valgus. It can be difficult however to assess the sesamoid position. We propose a simple method of grading sesamoid position; the sesamoid width ratio. We aim to assess for a difference in ratio between those with and without hallux valgus and subsequent correlation with increased deformity. The new grading system can then be tested for inter-observer reliability.

METHODS: 277 (103 normal, 87 preoperative, 87 postoperative) AP weight bearing foot radiographs were analyzed for hallux valgus angle (HVA), intermetatarsal angle (IMA), and both medial and lateral sesamoid width (mm). The sesamoid width ratio (SWR; lateral/medial width) was then calculated. Using statistical methods based upon HVA and IMA grading, three groups of increasing hallux valgus severity, in accordance with SWR, were defined; normal ≥1.30, moderate 1.29 - 0.95 and severe ≤0.94. Sixty images (10 normal, 25 preoperative, 25 postoperative) were then sent on disc to three separate reviewers to assess for inter-observer error.

RESULTS: A statistically significant correlation was shown between the SWR and both HVA and IMA ($r = -0.24$ and -0.18 respectively, $p < 0.05$). Once organized into normal, moderate and severe, in accordance with SWR, both the HVA and IMA group means were statistically different (ANOVA $p < 0.0001$ and $p < 0.0002$). With regards to inter-observer error, a fair agreement between raters existed when looking at group classification (Fleiss' kappa 0.33, 0.10 to 0.53 95% CI). The intra-class correlation (ICC), looking at the SWR value, returned a similar result (ICC = 0.35).

CONCLUSION: The diameter and subsequent ratio of sesamoid width is an easy value to calculate. There is good correlation between the SWR and hallux valgus deformity as defined by HVA or IMA. The sesamoid width ratio exhibits fair inter-observer reliability.

FP17
Does bunion surgery actually narrow the foot? Assessment of outcomes of surgery using traditional angles and a new radiographic measure of severity - the forefoot: hindfoot ratio. Correlation with clinical outcomes
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BACKGROUND: Various angles have been used to grade the severity of hallux valgus deformity. They are useful in surgical planning but do not correlate with symptom severity or improvement. We feel that there is a fundamental mismatch between the width of the forefoot and the width of the hindfoot and that this is more clinically relevant, we describe two techniques for measuring this. We aim to measure the degree of foot narrowing after surgery and moreover how this correlates to the severity of pre- and post operative outcomes.

METHODS: 200 consecutive bunion operations were assessed with weight bearing radiographs. The HVA and IMA were measured according to standard practice. We also assessed forefoot width using two methods we have described. The first is the 'Forefoot Width' measured as a perpendicular to the midfoot (a technique we have previously validated). The 'Foot Ratio' is calculated as a function of the calcaneal width. Clinical outcomes were assessed using the MOXFQ and AOFAS.

RESULTS: Bunion surgery narrows the osseous width of the forefoot. This narrowing can be by as much as 23mm in cases with severe deformity. We found that the Forefoot: Hindfoot ratio correlated with symptom severity and that normalisation of the ratio to below 2.5 was associated with better outcomes. This is important as small absolute corrections were associated with good outcomes.

CONCLUSION: Our measure of Forefoot Width is reproducible and allows for variations such as forefoot adductus. We feel that the Forefoot:Hindfoot ratio is more important as this determines the ability to fit into off-the-shelf footwear rather than requiring bespoke or modified footwear. This is the first study to look at the ability to narrow the forefoot and has important implications in determining patient selection and post-operative outcomes.

FP18

The management of severe hallux valgus with the Chevron osteotomy: clinical and radiological outcomes

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BACKGROUND: The Chevron osteotomy is straightforward, requires less dissection and allows earlier rehabilitation than some other osteotomies. However it is generally perceived as unsuitable for severe deformities1, 2, 3 even though a 2012 meta-analysis4 and an earlier RCT5 failed to show any advantage of the scarf over the chevron. We aim to assess the correctability of severe HV comparing the correction, the clinical outcomes and complications of the Chevron osteotomy with other techniques employed in a consecutive series.

METHODOLOGY: We reviewed a series of 92 cases of severe hallux valgus (IMA >17o regardless of the HVA). The follow-up period varied from 1 to 4 years. Pre-operative x-rays and final post-operative weight-bearing x-rays were performed. Outcome scores (MOXFQ and AOFAS), IMA, HVA and foot width were collected. Complications were monitored.

RESULTS: There were 97 cases of severe hallux valgus performed during the study period, 55 were treated with a large-shift modified Chevron osteotomy, 42 with a number of other techniques that included Ludloff, Basal or Scarf osteotomy and also fusion in the form of a Lapidus or 1st MTP.

The average pre-operative measurements were IMA of 19.1o, HVA of 40o, osseous forefoot width of 93.2 mm and the forefoot: hindfoot ratio was 3.11. Post-operatively the measurements were IMA of 9.2 and HVA of 9.76, the osseous forefoot width was 82.8mm and the forefoot: hindfoot ratio was 2.57.

Radiological outcomes for the Chevrons were similar to the alternative techniques though the rate of recovery was better. There is an increase in the rate of screw removal after a large shift Chevron osteotomy, reasons for this are discussed.

CONCLUSION: The Chevron osteotomy is successful in the management of severe hallux valgus. It has the advantage of being a stable osteotomy that permits immediate weight-bearing and movement of the MTP joint.

FP19

A case-controlled study of minimally invasive vs open hallux valgus surgery

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BACKGROUND: Previous attempts at small incision hallux valgus surgery have compromised the principles of bunion correction in order to minimise the incision. The Minimally Invasive Chevron/ Akin (MICA) is a technique that enables an open modified Chevron/ Akin to be done through a 3mm incision, facilitated by a 2mm Shannon burr.

METHODOLOGY: This is a consecutive case series performed between 2009 and 2012. This includes the learning curve for minimally invasive surgery. All cases were performed by a single surgeon at two different sites, one centre where minimally invasive surgery is available and the other where it is not. The standard procedure in both centres is a modified Chevron osteotomy. Regardless of whether the osteotomy was performed open or minimally invasive two-screw fixation was performed..

Retrospective analysis includes the IMA, HVA, M1 length, forefoot width and forefoot: hindfoot ratio. Clinical outcomes include the MOXFQ, AOFAS, and assessment of complications.

RESULTS: There were 70 cases in each arm. Follow-up was 4years to 6 months. The radiological outcomes were similar in both groups. There was an increased rate of screw removal in the MICA group. There were also cases of hallux varus, these occurred in the cases with severe pre-operative IMA angles that also had a lateral release and an Akin. There was high satisfaction in both groups.

CONCLUSION: This is the only comparison of minimally invasive and open techniques that has been performed, providing a direct comparison of the utility of a burr compared to a saw. These early results demonstrate the efficacy of a Minimally Invasive Chevron/ Akin in terms of achieving radiological correction. The clinical outcomes are excellent but there is a learning curve and this needs to be managed.

FP20

Zadek's calcaneal osteotomy for insertional Achilles pathology

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INTRODUCTION: The dorsal closing wedge calcaneal osteotomy has been described for the treatment of insertional pathology of the tendo-achilles. The aim of this study was to evaluate the efficacy of the technique using outcome measures.

METHOD: This was a prospective case series. Patients were included if they had tendo-achilles insertional pathology (calcific tendonitis, bursitis or Haglund's deformity). A short extended lateral approach was used and a 1 cm dorsally based closing wedge osteotomy of the calcaneus performed. Fixation was with 2 staples. Patients were scored pre-operatively and at 6 and 12 months post-operatively using the VISA-A and AOFAS ankle-hindfoot scores. Results were analysed with the paired student t-test.

RESULTS: Twenty five feet in 23 patients were enrolled in the study February 2011 - May 2013. 22 patients underwent the osteotomy (9 males and 14 females). Average age was 47.2 years (range 19-62 years).12 feet have been followed up for 1 year, 6 for 6 months, 5 less than 6 months.

Average VISA-A improvement was 27.87 points (-13 - 71) at 6 months p=0.001 and 38 (-13 - 81) at 12 months p=0.001. Average AOFAS improvement was 11 points (-8 - 31) at 6 months p=0.005 and 11 (-18 - 42) at 12 months p=0.04. 82.3% of patients would have the procedure again.

Complications included minor wound problems (3), sural nerve symptoms (1) and plantar fasciitis (3). All complications have resolved.

CONCLUSION: The results of this study show that the use of the Zadek osteotomy of the calcaneus can provide consistent symptomatic relief from insertional Achilles pathology by altering the biomechanics of the tendon without disrupting the bursa. There is a small risk of minor complications, which should be included in the consent process.

FP21

The anatomical relationships of the gastrocnemius and peroneus longus muscles, determining the practicality of a novel tendon transfer

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INTRODUCTION: Peroneal muscle weakness is a common pathology in foot and ankle surgery. Polio, charcot marie tooth disease and spina bifida are associated with varying degrees of peroneal muscle paralysis.

Tibialis Posterior, an antagonist of the peroneal muscles, becomes pathologically dominant, causing foot adduction and contributes to cavus foot posture.

Refunctioning the peroneus muscles would enhance stability in toe off and resist the deforming force of tibialis posterior.

This study determines the feasibility of a novel tendon transfer between peroneus longus and gastrocnemius, thus enabling gastrocnemius to power a paralysed peroneus tendon.

METHOD: 12 human disarticulated lower limbs were dissected to determine the safety and practicality of a tendon transfer between peroneus longus and gastrocnemius at the junction of the middle and distal thirds of the fibula.

The following measurements were made and anatomical relationships quantified at the proposed site of the tendon transfer: The distance of the sural nerve to the palpable posterior border of the fibula; the angular relationship of the peroneus longus tendon to gastrocnemius and the achilles tendon; the surgical field for the proposed tendon transfer was explored to determine the presence of hazards which would prevent the tendon transfer.

RESULTS: The mean angle between the tendons of peroneus longus and gastrocnemius/achilles tendon was 3. The sural nerve lies on average 30 mm posterior to the palpable posterior border of the fibula. There were no significant intervening structures to prevent the proposed tendon transfer.

CONCLUSION: The line of action of peroneus longus and gastrocnemius are as near parallel as to be functionally collinear. The action of gastrocnemius may be harnessed to effectively power a paralysed peroneus longus tendon, without significant loss of force owing to revectoring of forces. The surgical approach to effect such a tendon transfer is both safe and practical.

FP22

Extracorporeal shockwave for plantar fasciitis: continuing good results

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INTRODUCTION: Plantar Fasciitis is an extremely common and challenging problem that presents itself to foot and ankle practitioners. Many different treatment modalities are available for this condition, with little proven benefit. ECSWT was approved for use by the FDA for the treatment of chronic proximal plantar fasciitis in 2002 and NICE published guidance in 2009 recommending its use in refractory cases.

METHODS: Patients who diagnosed with ultrasound scan, and for whom other treatments were unsuccessful, underwent treatment on an outpatient basis. They had three 4-5 minute sessions, once a week. A Spectrum machine was used delivering 10 Hz waves in 500 preset pulses at 2 bar pressure, followed by 2000 preset pulses at 2.5 bar pressure. Pre - and 3 month post-treatment pain levels were recorded using a 10 point Visual Analogue Scale.

RESULTS: 210 courses of treatment have been performed on 181 feet belonging to 135 patients. 46 patients have had treatment to both feet. 121 treatments have paired pre and postoperative VAS scores. 79 had a reduced score post treatment (65.2%), 17 had an increased score (14%), and 24 had a score which remained unchanged (19.8%). 65.8% subjectively felt they had improved. Overall there was an average reduction in VAS score from 7 to 4.975, a reduction of 2.025 points (p=0.000000000151).

DISCUSSION: The majority of patients show a benefit in terms of an overall reduction in pain score, though it is not clear how many patients would have improved spontaneously in that time. However, there is further work to do in terms of a more detailed evaluation of the effect on foot function: anecdotally the treatment may significantly improve start up pain. We would also like to see if we can establish a benefit for the therapy earlier in the disease process.

FP23

Improving the consent process in foot and ankle surgery: use of patient specific literature

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Informed consent is integral to good-practice. It protects the patient and offers proof of discussion and interaction between the surgeon and the patient. We compare efficacy of last clinic consent, specialised consent clinic with or without provision of patient specific literature.

Group A patients underwent written consent at their last outpatient clinic and conformation of consent on the morning of surgery. Group B underwent consent in designated pre-admission clinic in the week prior to surgery. Group (C) attended the same preadmission clinic and were provided with a surgeon dictated written explanation of their surgery and particular risks.

This included a explanation of the procedure, complications, risks and rewards in layman's terms, aimed at patients with a reading age of 14 years, with advice concerning alternative procedures and the consequences of taking no action. The risks are graded: common, less common and rare.

All patients undertook a pre-surgery questionnaire on the morning of surgery by an independent observer prior to any contact with the surgical team. Questions focused on their planed procedure, post-operative instructions and possible complications in order to assess the recall of the consent process. A VAS-scale was added to assess overall satisfaction. Statistical analysis was undertaken by a T-test.

In total 162-patients were assessed, the response rate was 68.5% (n=111). In-group A (n=16) 18.8% patients remembered 3 relevant complications, 56.2% recalled their post-operative considerations their overall satisfaction was 4/10. In-group B (n=57) 45.5% remembered three complications, 63.7% recalled their postoperative considerations and had a patient satisfaction of 5/10. In-group C (n=38) 48.3% remembered three complications, and 70.7% recalled postoperative considerations, the overall satisfaction improved to 6/10.

We observed that the consent process is improved by the use of routine pre-operative consent clinics; however the addition of patient specific literature is observed to further- improve recall and satisfaction.

FP24

Reduction in re-rupture rate using a new standardised Achilles tendon rupture pathway and protocol in a dedicated clinic

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INTRODUCTION: Historically the incidence of Achilles re-ruptures has been described as around 5% after surgical repair and up to 21% after conservative management. In 2008 we commenced a dedicated Achilles tendon rupture clinic for both conservative and surgically managed patients using new standardised operating procedures (SOP). We have evaluated the impact of this new service, particularly with regard to re-rupture rate.

MATERIALS AND METHODS: The SOP was stage dependent and included an initial ultrasound examination, functional orthotics with early weight bearing, accelerated exercise and guidelines for the return to work and sport. Evaluation included re-rupture rate, complication rate, and outcome measured by the Achilles Tendon Total Rupture Score (ATRS) and Achilles Tendon Repair Score (AS). A basic cost evaluation was performed to assess any potential savings.

RESULTS: A total of 213 patients (151 treated conservatively and 62 surgically) were included. Re-rupture occurred in two patients (1 conservative and 1 surgically managed). There were 16 major complications e.g. DVT, wound infection. The mean ATRS was 54.79, 67.66 and 71.05 at 4, 6 and 9 months respectively and the mean AS was 64.67, 73.96 and 71.05 at 4, 6 and 9 months respectively. The reduction in re-rupture compared to the literature was 4.1% and 19.1% for surgical and conservatively treated patients respectively. Cost savings achieved were £50,000 each annum. This was due to both a decrease in the number of re-ruptures as well as a decrease in the number of patients being managed operatively.

CONCLUSION: A dedicated follow up Achilles clinic treating acute Achilles tendon ruptures using monitored SOP's, provides an exceptionally low re-rupture rate (0.9%), excellent patient outcome and potential cost savings compared to a traditional fracture clinic approach. The reduction in re-rupture rate, and therefore cost savings, is greater in conservatively managed patients.

FP25

An evaluation of retrospective SF-12 and Foot Function Index (FFI) outcome scores in elective foot and ankle surgery

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INTRODUCTION: Patient reported outcome measures are becoming more popular in their use. Retrospective scoring is not yet a validated method of data collection but one that could greatly decrease the complexity of research projects. We aim to compare preoperative and retrospective scores in order to assess their correlation and accuracy.

METHODS: 36 patients underwent elective foot and ankle surgery. All patients were scored preoperatively using the SF-12 and FFI. Patients then recorded both PROMs retrospectively at the three month follow up (av. 139 days). Results were then analyzed for statistical significance.

RESULTS: 36 patients (av. age 54.6 years) completed both sets of questionnaires. There were 15 hindfoot and 21 forefoot procedures. Two patients (5.6%) recalled their identical preoperative SF12 score. No retrospective FFI scores were identical.

The mean percentage difference between the two preoperative scores was; -0.9% (-5.8 to 4.0%, 95% CI) for SF12 and 40.7% (25.3 to 56.1%, 95% CI) for FFI. This retrospective accuracy was statistically significant ($p < 0.001$). When both scores were plotted against each other, the outcome measurements showed positive correlations (SF 12 p 0.31, FFI p 0.81).

With both PROMs mean percentage differences combined, patients undergoing hindfoot procedures (13.5%; 5.8 to 21.3%, 95% CI) were more accurate with retrospective scoring than their forefoot counterparts (26.8%; 10.4 to 43.1%, 95% CI). This was not statistically significant.

CONCLUSION: Retrospective scoring appears to lack accuracy when compared to prospective methods. However, our data shows the SF12 is recalled more accurately than the FFI ($p < 0.001$) and to an average discrepancy of < 1% when compared to the original preoperative result. These results show patients tend to recall their symptoms at a worse level preoperatively than originally described, especially those with forefoot problems.

FP26

Incidence of clinically relevant venous thromboembolism after foot & ankle surgery

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INTRODUCTION: Surgeons want to counsel their patients accurately about the risks of rare complications. This is difficult for venous thromboembolism (VTE), as most studies report rates of asymptomatic disease, which may not be clinically relevant. Generic guidelines promote chemoprophylaxis in foot and ankle surgery despite a relative dearth of evidence. We therefore calculated the rate of confirmed, symptomatic deep vein thrombosis and pulmonary embolism, after surgery or trauma to the foot or ankle, in our hospital.

METHODS: In a retrospective cohort design, we scrutinised referrals for venous Doppler ultrasound and computed tomography pulmonary angiography, and found all confirmed deep vein thromboses (DVTs) or pulmonary embolisms (PEs) over an 18 month period from November 2010 to May 2012. These patients were cross-referenced with our orthopaedic database. All adult trauma admissions and fracture clinic attendances were retrieved and divided according to injury. We then identified all adult elective patients using Healthcare Resource Group code data.

RESULTS: Out of 1763 elective foot and ankle procedures, there were five DVTs (incidence 0.28%) and no PEs. Out of 1970 patients with ankle fractures, seventeen (0.86%) sustained DVTs (thirteen conservatively, four operatively managed) and five PEs (0.25%). Of 147 patients with Achilles tendon rupture, three (2%) had a DVT and two (1.36%) a PE ($p< 0.05$). Summing together all fractures of the foot, of 1775 patients, two (0.05%) had a DVT and there were no PEs.

CONCLUSION: Currently this group of patients does not routinely receive anticoagulants. The relatively low incidence of symptomatic VTE is reassuring and will help to inform surgeons when considering the risks and benefits of anticoagulation. However, Achilles rupture is confirmed as a higher risk injury, which therefore is more likely to benefit from either increased vigilance or anticoagulation. Large randomised trials measuring clinically relevant VTE (rather than asymptomatic DVT) are needed.

FP27

Venous throboembolism (VTE) prophylaxis following elective hindfoot surgery

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INTRODUCTION: The National institute of Health and Clinical Excellence (NICE) guidelines for thromboprophylaxis following lower limb surgery and plastercast immobilisation recommend pharmacological prophylaxis be considered until the cast is removed. These guidelines have been extrapolated from data for hip and knee arthroplasty, and trauma studies. Recent studies have questioned the validity of these guidelines. At Portsmouth, low molecular weight heparin (LMWH) is prescribed for 14 days following surgery in high risk patients. The protocol predates the most recent NICE guidance. We set out to investigate whether this was a safe method of thromboprophylaxis following elective hindfoot surgery.

METHODS: A retrospective audit of all patients undergoing hindfoot surgery between 01/01/10 and 31/12/12 was performed. All patients were immobilised in a POP backslab and prescribed 14 days of LMWH. All patients were reviewed at 2 weeks and converted to a full cast or boot. Immobilisation was continued for between 6 and 12 weeks.

A list of all patients who had undergone investigation for deep vein thrombosis at Queen Alexandra hospital from 01/01/10 to 28/03/13 was obtained from the VTE investigation department.

The two lists were cross referenced to identify any DVTs occurring following hindfoot surgery and plastercast immobilisation.

RESULTS: During the 3 years, 197 major hindfoot operations were performed in 194 patients. Mean age was 53 years (range18-82) and 94 males with 100 females.

Two patients had confirmed deep vein thromboses; 1 patient at 13 days post op while receiving LMWH prophylaxis.

CONCLUSION: Symptomatic VTE following elective hindfoot surgery and post operative plaster cast immobilisation in our hospital is rare. There are no randomnised controlled trials to guide thromboprophylaxis regimes following hindfoot surgery. Based on our results, our protocol appears to be effective and safe.

FP28

Analysis of current venous thromboembolism risk assessment tools in trauma patients treated with cast immobilisation

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INTRODUCTION: NICE guidelines state that every patient should be assessed for their VTE risk on admission to hospital. The aim of this study was to determine whether currently recommended risk assessment tools (Nygaard, Caprini, NICE and Plymouth) can correctly identify the patients at risk.

METHODS: In a consecutive series of over 750 trauma patients treated with cast immobilisation 23 were found to have suffered a VTE. Their notes were retrospectively reviewed to discover how many had been assessed for their VTE risk on admission. Additionally, the 4 most current Risk Assessment Tools were used to retrospectively score the patients for their VTE risk to determine whether they would have been identified as at risk of sVTE, had the RAMs been used at the time. We also identified a matched group of patients in the same cohort who had not suffered a VTE and they were also retrospectively risk assessed.

RESULTS: NICE (2010), Caprini (2001) and Nygaard (2009) identified 100% of the 750 patients as at risk of sVTE but had a specificity of 0% as only 23 went on to develop VTE. The Plymouth Score (2010) was more specific and identified 56.3% patients of the 23 confirmed VTEs as 'at risk'. However it would not have recommended prophylaxis in the remaining 46.7& that did in fact go on to developed VTE.

CONCLUSION: The tools used in this study have no clinical utility in this patient group. Detailed evaluation of the different RAMs is required in order to improve their discriminatory power. A reliance on NICE, Caprini and Nygaard tools would have required all 750 patients in this group to have been treated with thromboprophylaxis and therefore lacked sensitivity. However the Plymouth Score would have failed to recommend thromboprophylaxis in half of the patients who eventually developed VTE.

FP29

A comparison of non-union rates following first metatarsophalangeal joint fusion with three dorsal plating systems

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INTRODUCTION: Techniques devised for 1st MTPJ arthrodesis have been described since 1979 when Humbert et al published a 'tongue and trough' technique. Common contemporary techniques include fixation with single or crossed screws, or dorsal plates and these are suitable for a variety of indications. All three contemporary techniques have demonstrated a wide range of fusion rates. This study reports a comparison of non-union rates of the 1st metatarsophalangeal joint (MTPJ) with the current Memometal AnchorageTM dorsal plate system and the previous Hallu-fixTM and CharlotteTM systems.

METHODS: Between 01/2009 and 07/2012 174 consecutive 1st MTPJ fusions were performed for 153 patients (Mean age 62, range 42 to 83) by three surgeons at one University teaching hospital. 40 patients (23%) were male and 132 (77%) female. Patients without available radiographs were excluded from the study. 20 patients received Hallu-fixTM plates, 76 CharlotteTM plates and 76 Memometal AnchorageTM. Radiographs of the feet were taken from four weeks postoperatively and reviewed for incomplete bone bridging and increased radiolucency around screws.

RESULTS: 12 (7.0%) non-unions were identified in total during followup. A single (5.0%) Hallu-fixTM system, 9 (11.8%) CharlotteTM systems and 2 (2.6%) Memometal AnchorageTM plating systems did not develop a satisfactory fusion. Typical followup in patients in whom there were no postoperative complications and who developed satisfactory bony union was 12 weeks. Those with non-unions were followed until revision procedures were successful.

CONCLUSION: The total non-union rate of this centre during the period compares favourably with published literature suggesting the technique is suitable for numerous indications in 1st MTPJ fusion. With a non-union rate of 5.0%, the Hallu-fixTM shows favourable results when compared authors using the same system. The CharlotteTM system demonstrated an 11.8% non-union rate, comparing poorly with published literature. The Memometal AnchorageTM system, with a non-union rate of 2.6%, demonstrated promising results.

FP30

Arthroscopic resection of talocalcaneal coalitions: a bicentre case series of a new technique

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INTRODUCTION: Symptomatic tarsal coalitions failing conservative treatment are traditionally managed by open resection. Arthroscopic excision of calcaneonavicular bars have previously been described as has a technique for excising talocalcaneal bars using an arthroscope to guide an open resection. We describe a purely arthroscopic technique for excising talocalcaneal coalitions. We present a retrospective two-surgeon case series of the first eight patients (nine feet).

METHODS: Subtalar arthroscopy is performed from two standard sinus tarsi portals with the patient in a saggy lateral position. Coalitions are resected with a barrel burr after soft tissue clearance with arthroscopic shavers. Early postoperative mobilisation and non-steroidal anti-inflammatory drugs prevent recurrence of coalition. Outcome measures include restoration of subtalar movements, return to work and sports, visual analogue pain scales and Sports Athlete Foot and Ankle Scores (SAFAS). Follow-up ranges from 1 to 5.5 years.

RESULTS: Pain and SAFAS scores improved in 7 patients. Subtalar movements were improved in all feet and were sustained to final follow-up. All patients achieved early good function and returned to sports and demanding jobs. One patient's pain recurred requiring subsequent fusions. One posterior tibial nerve was damaged. Both of these patients had coalitions extending across more than one quarter of the posterior facet.

CONCLUSION: Minimal destruction of bone and soft tissues with an arthroscopic technique allows early mobilization and minimizes pain. We acknowledge the risk of neurological damage from both open and arthroscopic excision of tarsal coalitions. Patient selection and preoperative planning are crucial to avoid relapse and complication. If significant degenerative changes are present at surgery or resections are too extensive onto the posterior facet early recurrence of pain may occur. This series from two independent surgeons supports the feasibility and effectiveness of this technique.

FP31

Arthroscopic triple and modified double hindfoot arthrodesis: technical note and case series

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INTRODUCTION: In a consecutive series of 71 arthroscopic subtalar arthrodeses performed between 2004 and 2011, 14 also involved arthroscopic decortication of the talonavicular joint (double arthrodesis) and 4 the subtalar, talonavicular and calcaneocuboid joints (triple arthrodeses).

METHODS: We examined complications, union rates in all 18 patients and clinical outcomes in 16 for whom this was the sole procedure.

RESULTS: Mean age was 62 (45 - 78). Two talonavicular joints failed to unite and a third patient suffered a diabetic Charcot midfoot neuro-arthropathy. These patients' outcomes were classified as poor. Two patients underwent planned major ankle or midfoot surgery in addition to arthroscopic double arthrodeses. These joints united but these patients were not included in the clinical review to avoid confounding outcomes. Mean follow-up for the remaining 13 patients was 4.4 (1.75 - 7.5) years. There were no immediate perioperative complications. All 4 patients with triple fusions united with good or excellent outcomes. The nine patients receiving double arthrodesis united with 8 good or excellent outcomes. The remaining patient reported good deformity correction and stability but disappointing pain relief, (classification poor).

CONCLUSIONS: Double and triple arthrodeses remain valid salvage options for painful arthrosis and severe deformity. Preservation of the calcaneocuboid joint permits a relative lateral column lengthening when correcting planovalgus deformity. Arthroscopic surgery offers preservation and protection of soft tissues and reduces wound tension. The sinus tarsi approach permits good visualisation and decortication of the triple joints and rotatory correction of deformity. This technique is not appropriate when there is extensive bone loss requiring block bone grafting. Early complications are reduced and late complications such as non-union and arthrosis of adjacent joints seem similar to those reported in studies on open arthrodeses.

FP32

Short term outcomes of total ankle replacements

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INTRODUCTION: The National Joint Registry has been capturing data on ankle replacement surgery since April 2010. This currently represents the largest cohort of ankles replacements captured worldwide and is a valuable resource to give us short term outcome of ankle replacement surgery.

METHODS: All the ankle replacements on the NJR were linked to the HES database using deterministic methods. The results were then anonymised. We then looked at Hopital admissions aftert he ankle replacement had taken place.

RESULTS: There were just over 1600 ankles on the NJR and linking to HES gave 2065 records. 1437 of these were relavant to TAR. There were 12 malleolar fractures post-op and 6 DVT/PE which required readmission. there were 49 reoperations other than revision, 12 of which were ankle arthroscopies, and 14 removal of metalwork.

CONCLUSION: Ankle replacement is a effective procedure but does carry with it the risk of short term reoperation.

FP33

13-19 year results of a consecutive series of 200 Scandinavian Total Ankle Replacements (STAR): the Wrightington experience

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INTRODUCTION: The Scandinavian Total Ankle Replacement (STAR) is a three-component, uncemented implant in widespread use throughout Europe. STAR has achieved encouraging results with short and medium term outcome. We present the long term (13-19 year) results of a consecutive series of 200 STAR ankles.

METHODS: Between November 1993 and February 2000, a total of 200 consecutive STARs were carried out in 184 patients. Patients were followed up both clinically and radiologically, until death or failure, with time to decision to revision or fusion as the endpoint. Pain and function were assessed using the American Orthopaedic Foot and Ankle Society (AOFAS) ankle and hindfoot score.

RESULTS: Of the 200 STARs, 109 (105 patients) were alive at latest review. 12 STARs (11 patients) were lost to follow-up, leaving 97 ankles for clinical review. Of these, 76 ankles were surviving and 21 ankles had failed [13 underwent arthrodesis, 4 had an exchange of poly insert, and 4 had a revision TAR], with mean time to failure 82 months (2-156 months). For the 91 ankles in 79 patients who died during the study, 8 had failed [6 underwent revision TAR and 2 had an arthrodesis]. The implant survival at 15 years with endpoint of revision for any reason was 76.9% [95% CI 66.4 to 87.3]. The mean AOFAS score was 72 [20 to 96]. The mean annual failure rate was 1.5%, which was steady across the study period.

CONCLUSION: The 15 year survivorship for the STAR prosthesis was 76.9%, which provides a benchmark for other later design ankle prostheses. We found no drop off in failure rate or function over the study period.

FP34

Comparative study of the Nottingham Foot and Ankle Unit outcomes of the Scandinavian Total Ankle Replacement (STAR) and the mobility total ankle replacement

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INTRODUCTION: Total ankle replacement is a recognised treatment for disabling end stage ankle arthritis and an alternative to arthrodesis, although results are not yet comparable to other joint replacements. This has stimulated a constant evolution in design of implants and instrumentation. The Nottingham Foot and Ankle Unit used the STAR until 2005, when it switched to Mobility, due to the perceived advantages of less bone resection, improved instrumentation and potentially less polyethylene insert wear. The aim of this study is to report the unit's results and review the different outcomes between the two ankle replacements used.

METHODS: A retrospective analysis of all total ankle replacements carried out by the foot and ankle unit at Nottingham City Hospital between March 1999 and June 2013. Post operative complications, associated reoperations and revisions were recorded. The American Orthopaedic Foot and Ankle Score (AOFAS), Foot Function Index (FFI), European five dimension quality of life scores (EQ-D5) and patient satisfaction was independently assessed at each follow up visit. Other ankle replacements or those performed elsewhere or with less than 12 month follow up were excluded.

RESULTS: 162 Mobility and 148 STARs' were assessed. The mean follow up was 7 years (1-13yrs,) STAR and 3.5 years (1- 8 yrs) Mobility. Post-operative complication rate of 15% STAR and 13% Mobility, associated operation rate of 15% STAR and 10% Mobility with revision rate of 19% STAR at 13 years and 4.3 % Mobility at 8 years. Both STAR and Mobility groups showed improvements in AOFAS, FFI, EQ-D5 and patient satisfaction, but there were no significant differences between the two groups.

CONCLUSION: This is one of the largest comparative series of total ankle replacements and shows that patient satisfaction, pain and function is improved. The Mobility total ankle replacement had fewer revisions and complications compared to STAR.

FP35

A prospective randomised controlled trial of hyaluronic acid in patients with symptomatic ankle osteoarthritis

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INTRODUCTION: Symptomatic treatment of ankle osteoarthritis (OA) with corticosteroid injections is well established. Hyaluronic acid is also reported as an effective symptomatic treatment for ankle OA but these two treatments have not been compared directly.

METHODS: A prospective randomised controlled trial in patients with symptomatic ankle osteoarthritis. Twenty patients per group were required based on a significance level of 0.05, and a drop out rate of 5%. Patients were blindly allocated to the treatment or control group. Injections were carried out by the clinician in the outpatient department. Treatment group received Ostenil 20mg and control group received Depomedrone 40mg (both as single injections). The treatment arm was allocated by computer generated block randomization to match treatment allocation with grade of arthritis. The primary outcome measure was the change in Visual Analogue Scale (VAS) pain score at 6 months. Secondary outcome was the change in AOFAS score at 6 months. Research ethics committee approval was obtained.

RESULTS: A total of 42 patients were recruited of which 38 completed the study. Male recruits predominated (79%; 33 recruits). More than 70% had radiographic OA of grade 3 or more. Both groups demonstrated statistically significant improvements in VAS at weeks 3, 6, and 3 months over baseline, but the Ostenil group faired better at 6 months follow-up. (difference in VAS scores of 3.5 Ostenil VAS - 4; Steroid VAS - 7.5; Mann Whitney test ($p <= 0.05$). There was no statistical difference in AOFAS scores between both groups at baseline and follow-up ($p = 0.48$, Mann Whitney test). No complications noted. 30% of patients have had their surgical procedures delayed for 6 month post injection.

CONCLUSION: The Ostenil group revealed similar clinical efficacy to steroid group, however the benefits provided by Ostenil lasted longer. Ostenil provided sufficient mid-term pain-relief whilst patient awaits further definitive intervention.

FP36

Too young for an ankle replacement? Does the age of a patient impact on outcome following total ankle replacement

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INTRODUCTION: Total Ankle Replacement is proving to be a viable option for younger patients with Post Traumatic Osteoarthritis of the Ankle. The aim of our study was to study the clinical and patient reported outcomes between patients of < 60 and >60 years who underwent TAR.

METHOD: Patients who underwent a TAR between March 2006 and May 2009 were invited to take part in the hospital patient registry. They were divided into two groups based on Age (Group A-Age>60 and Group B-Age< 60). Patient demographics, co-morbidities, Clinical (AOFAS) outcomes, patient reported outcomes (FAOS, SF-36, patient satisfaction) and complications were collected from patients pre-operatively and at 1, 2 and 3 years follow up. Comparisons were made between groups for all outcome measures.

RESULTS: There were 56 patients in Group A and 32 patients in Group B. There was no difference in Gender, side of operation and diagnosis reported between the 2 groups ($P>0.05$). Group A reported higher number of co-morbidities than Group B (1.54 vs. 1.00); $p=0.032$. There was no difference in AOFAS scores and FAOS scores for pain and function at all follow up times ($p>0.05$). Although Group B reported worse scores for FAOS stiffness pre-operatively ($p=0.002$) and at 1 year ($p=0.029$); there was no difference between scores at 2 and 3 years follow up. There was no difference in SF-36 scores and patient satisfaction and complications between groups. We expect to have the 4 year results processed by October this year.

CONCLUSION: We have found satisfactory outcomes following TAR, both clinical and patient reported, irrespective of age of patient. Although long-term survivorship results for TAR are unavailable, we feel that younger age may not be a contra-indication to TAR as it provides good quality of life and potentially allows continuation of work.

FP37

Return to work after total ankle replacement: a cross sectional study

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INTRODUCTION: The aim of this study was to assess patients reported fitness to return to work and to driving after ankle replacement.

METHOD: Using Hospital Joint Registry, patients who underwent ankle replacement between 2006 and 2011 were invited to take part in the study. Questionnaires were sent to these patients. Participants were asked to report the nature and pattern of their work (full time or part time), time it took to return to work and subsequent nature of work. Participants were also asked about time to return to driving.

RESULTS: 173 participants were given eight weeks to reply. In this time there were 131 responses (response rate 76%). There were 79 male and 52 female respondents. Of the responses 61% (n=80) were retired, 24% (n=42) were employed, 5% (n=9) were unemployed before the surgery. Of those who were employed prior to ankle replacement, 29 respondents reported working full time and 11 respondents were working part time and 5 were self employed. 10 (24%) patients returned to work at 6 weeks 22 (52%) were able to work by 3 months. Following surgery 5 of the patients did not return to work off which one took retirement. 45 (40%) respondents could drive at 6 weeks, 34 (22%) at 3 months and 11 by 6 months. 20 (12%) patients did not drive before surgery. There were 23 responses about nature of employment, 10 being manual workers and 13 being office workers. Of the manual workers 5 patients returned to full time work.

CONCLUSION: We conclude from this study that the 76% of the employed patients prior to their ankle replacement were able to return to work by 6 months with 24 % returning by 6 weeks. 71% were able to drive at 3 months after surgery.

FP38

Gait analysis following MobilityTM total ankle replacement (TAR)

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INTRODUCTION: There is paucity of literature on Gait analysis following Total Ankle Replacement (TAR). We aimed to study changes to gait after successful Mobility TAR.

METHODS: 20 patients who underwent a primary TAR, with a diagnosis of either OA or PTOA were recruited between October 2008 and March 2011. Gait analysis was carried out using the Helen Hayes marker system with VICON 3D opto-electric system pre-operatively, 3, 6 and 12 months post-operatively. Ankle kinematics and spatio-temporal parameters of gait were studied.

RESULTS: 20 patients were included. Mean age was 63.6 years (Range 43-84), mean BMI was 29.6 ± 4.08. Diagnosis was OA in 12 (52.2%) and PTOA in 8 (34.8%). Results showed increase in average and maximum range of dorsiflexion from (3° to 7°) and (11° to 17°) respectively from pre-op to 1 year, but statistically not significant ($p>0.05$). Of the temporal variables, Average Cadence increased from Pre-op to 1 year (102 to 106 steps/min); double support (0.35% to 0.31%), single support (0.41% to 0.39%) and toe off point at gait cycle (63.9% to 62.4%) decreased from pre-op to 1 year, but failed to achieve statistical significance ($p>0.05$). For distance variables, Step length showed a significant increase from pre-op to 1 year (0.21m/s to 0.58m/s; $p< 0.001$); stride length increased (1.05m/s to 1.13m/s), step time and stride time decreased (0.60secs to 0.58secs) and (1.19 to 1.14secs) respectively and Walking speed increased (0.90m/s to 1.00m/s) from pre-op to 1 year, but statistically not significant ($P>0.05$).

CONCLUSION: There was significant improvement in step length after TAR from pre-op to 1 year. Although the results showed a trend for improvement in average dorsiflexion, average cadence, stride length, walking speed, decreased step and stride length times, which showed improvement in walking pattern in these group of patients, but failed to achieve statistical significance.

FP39

What are the risks for early failure of total ankle replacement? Is there a valid classification?

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INTRODUCTION: Prompted by the success of hip and knee arthroplasty, total ankle replacement (TAR) has become increasingly popular as a treatment for end stage arthritic complaints of the ankle. Glazebrook et al proposed a three grade classification of complications to assist prediction of early implant failure. We have compared the experience of a tertiary referral centre in the UK to Glazebrook's proposed system.

METHOD: A retrospective review of the Sheffield Foot and Ankle Unit TAR database was performed from 1995 to 2010. All complications were recorded and categorised using Glazebrook's proposed system. Glazebrook described eight main complications of increasing severity. Low grade complications; Post operative bone fracture, Intra-operative bone fracture and wound healing problems were very unlikely to lead to revision. Medium grade complications; technical error and subsidence, lead to failure < 50% of the time. High grade complications; deep infection, aseptic loosening and implant failure lead to revision >50% of the time.

RESULTS: 217 TAR were implanted in 198 patients with a minimum follow up of 30 months. The complication rate was 23% with a revision rate of 17%. All complications recorded in our study except intraoperative bone fracture and wound healing had a failure rate of at least 50%.

CONCLUSION: The proposed classification system of Glazebrook et al was the first step towards an international system of classifying TAR complications. Most complications associated with TAR have a significant impact on the lifespan of a TAR. Glazebrook et al's proposed three tier system did not reliably reflect our experience. We would categorise complications as either high or low risk for early failure of TAR.

FP40

Tibiotalocalcaneal (TTC) fusion with a hindfoot nail and femoral head allograft for failed total ankle replacements (TARs)

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INTRODUCTION: TTC fusion for the salvage of failed TARs with significant bone loss using a hindfoot nail and femoral head allograft has been reported in a number of small series. We present our experience of this procedure.

METHOD: Review of the theatre records from 2006 to July 2011 identified twenty four cases using this technique. The case notes and imaging were retrospectively reviewed.

RESULTS: Overall eighteen of the twenty four cases had achieved union (mean time 18.8 months). Of this number two had under gone a revision hindfoot nailing and another case needed revision with a circular frame. A further three cases required dynamisation to unite.

There were five non unions and one loss to follow up (at two months). Complications included one deep infection (non union) and one case with chronic regional pain syndrome. Metalwork complications included five nail fractures and five cases that required prominent screw removal.

CONCLUSIONS: This is the largest series reported using this technique for the salvage of failed TARs with significant bone loss. Other smaller series using this technique have reported union rates around fifty per cent.

The time to union is long and half of these cases required further procedures during this course. This is important to reflect when consenting the patient for this type of surgery.

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Donor leg morbidity after Vascularised Free Fibula Flap: is there a difference between patients reported outcomes and dynamic ankle stability as assessed by Star Excursion Balance Test

J.P. Peehal[1], K. Shah[2], S. Crank[2], M. Cope[2]
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Fifth metatarsal fractures: is routine follow-up necessary?

K.B. Ferguson[1], J. McGlynn[1], C. Kumar[1], N.J. Madeley[1], L. Rymaszewski[1]
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Pilot study of local anaesthetic peripheral nerve block in forefoot day case surgery: does it work better when administered before the start of the surgical procedure?

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The effect of different methods of stability assessment on the rate of fixation in SER2/4 ankle fractures

E.J. Dawe[1], R. Shafafy[1], J. Quayle[1], N. Gougoulias[1], A. Wee[1], A. Sakellariou[1]
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M. Karski[1], A. Ajis[1], T. Clough[1]
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M. Quinn[1], J. O'Donnell[1], D. Bergin[1], S.R. Kearns[1]
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P. Fenton[1], N. Bali[1], R. Matheshwari[1], B. Youssef[1], K. Meda[1]
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The radiological prevalence of degenerative arthritis of the 1st metatarsophalangeal joint

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Surgical management of haemophilia-associated ankle arthropathy: open and arthroscopic ankle arthrodesis outcomes

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One year of ankle fractures on the Wirral: how was the syndesmosis managed?

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Emergency department reduction and casting of ankle fractures: satisfactory or not?

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POSTERS ABSTRACTS

P1

Donor leg morbidity after Vascularised Free Fibula Flap: Is there a difference between patients reported outcomes and dynamic ankle stability as assessed by Star Excursion Balance Test

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AIM: To look at the morbidity in the donor leg with vascularised free fibular Flap (VFFF) by using patient reported outcome measures, clinical examination and dynamic ankle stability assessment by using Star Excursion Balance Test (SEBT).

METHOD: Series of 13 consecutive cases of VFFF done at Hull Royal Infirmary between Aug 2009 and Aug 2012. For subjective assessment American Orthopaedic Foot and Ankle Society Score (AOFASS), Foot and Ankle Disability Index (FADI), Visual analog pain (VAP) score (0 to 10) and feeling of instability were recorded.

Clinical assessment included recording range of movements (ROM), drawer test, clawing of toes, abnormal gait, muscle weakness, any loss of sensation in leg-ankle-foot and SEBT was used for assessment of dynamic ankle stability.

RESULTS: Mean age of patients was 57 years, mean follow up period was 14 months. Three patients had superficial infection, five patients had persistent pain (mean VAP score was 3.5), three patients had reduced ROM and four patients reported feeling of instability in the ankle joint, but did not have instability on assessment. Mean AOFASS was 85 and mean FADI was 84. There was very good correlation between AOFASS and FADI (= 0.95). There was no significant differences between the corresponding reach distances by operated and non-operated legs during SEBT. Six patients had sensory loss (all had loss in the superficial peroneal nerve distribution area and 3 in addition also had in the sural nerve distribution area)

CONCLUSION: This study demonstrates over all very good patient reported outcomes following VFFF and this corresponds with SEBT finding that the dynamic ankle stability of the donor leg is not affected as compared to opposite non-operated leg. Some morbidity like pain, loss of sensation or restriction of movement of ankle joint can occur as a price for the procedure.

P2

Fifth metatarsal fractures: is routine follow-up necessary?

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INTRODUCTION: Fifth metatarsal fractures are common and the majority unite regardless of treatment. A sub-type of these fractures carries a risk of non-union and for this reason many centres follow up all 5th metatarsal fractures. In 2011, a standardised protocol was introduced to promote weight-bearing as tolerated with either a tubigrip or Velcro boot. No routine fracture clinic appointments were made from A&E but patients were provided with information and a help-line number to access care if required. Some patients still attended fracture clinics, but only after review of their notes/X-rays by an Orthopaedic Consultant, or after self-reported "failure to progress" using the special help-line number.

METHODS: Audit of a year prior to the introduction of the protocol and the year following it was performed. Patient satisfaction surveys sent at 1 year.

RESULTS: During 2009/2010, 279 patients presented to A&E with a 5th metatarsal fracture and were referred to a fracture clinic. 106(38%) attended 1 appointment, 130(47%) attended 2 appointments and 31 (11%) attended 3 or more appointments - 491 appointments in total. 3% failed to attend the clinic. Operative fixation was performed in 3 patients (1.07%).

In 2011/2012, of 339 A&E fractures, only 67 (20%) attended fracture clinic. 38 (11%) attended 1 appointment, 14 (4%) 2 and 9 (3%) 3 or more appointments - 102 appointments in total. 5 patients (1%) required operative fixation.

CONCLUSION: Our study did not demonstrate any added value for routine outpatient follow-up of 5th metatarsal fractures. Patients can be safely allowed to weight bear and discharged at the time of initial presentation in the A&E department if they are provided with appropriate information and access to a "help line" run by experienced fracture clinic staff. The result is a more efficient, patient- centred service. 77% of surveyed patients were satisfied with the service.

P3

Pilot study of local anaesthetic peripheral nerve block in forefoot day case surgery: does it work better when administered before the start of the surgical procedure?

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INTRODUCTION: The success of Day-case forefoot surgery depends on good post-operative pain relief to ensure that patients are confidently discharged home. We routinely perform all forefoot surgery as day-case procedure with pre-operative regional local anesthetic block with 0.5% Levo-Bupivacaine involving the superficial and deep peroneal, sural, posterior tibial and saphenous nerves. We hypothesized that pre-operative regional block has similar effectiveness if not better, compared to block administered after the surgical incision has been sutured.

METHODS: 42 consecutive patients undergoing day-case bony forefoot surgery were recruited and randomized to receive regional local anesthetic block performed by senior author, with 20mls of 0.5% Levo-bupivacaine either before the surgical incision or after the surgical incision has been sutured. Patient and the member collecting data were blinded to the allocation. Intra-operative and post-operative analgesia was standardized in consultation with the anesthetists and all patients received general anesthesia.Post-operative visual analogue pain scores at 2 and 6 hours were collected. Data collection also included time at which they required rescue analgesia and the amount of analgesia used in the first 24 hrs.

RESULTS: 3 patients required overnight hospital stay due to social reasons. Mean age of patients undergoing surgery was 59±1 years. Mean surgery time was 49±1 minutes in Post-operative group & 39±1 minutes in pre-operative group. Average of the sum of the pain scores at 2&6 hours were 2 and 1 respectively. Mean time to rescue analgesia was 9±1 hours in the post-operative group and 11±1 hours in the pre-operative group. The amount of non-opiate analgesia used after discharge was more in the post-operative group.

CONCLUSION: Pilot study power calculation suggests a sample size of at-least 67 patients to prove a statistical significance between groups. Results suggest Pre-operative regional anaesthetic block is better for longer pain relief in the initial 24 hours.

P4

The effect of different methods of stability assessment on the rate of fixation in SER2/4 ankle fractures

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INTRODUCTION: Non weight-bearing plain radiographs are frequently unreliable in distinguishing between stable Supination-External Rotation (SER) 2 and unstable SER 4 injuries. Gravity stress radiographs and, more recently, weight-bearing radiographs have been introduced to aid surgical decision-making. The aim of this study was to assess the effect of different radiographic stability assessments on the rate of fracture fixation.

METHODS: Radiographs of 1500 ankle injuries were assessed to identify SER 2/4 injuries. We determined inter- and intra-rater agreement of the need for stress radiography and divided patients into three groups. These were: Phase 1- the 'before gravity stress views' period (BS), phase 2- the 'gravity stress view' period (GS) and, phase 3 - the 'weight-bearing radiograph' period (WB). The rate of fixation was assessed based on the time-period and also the type of assessment.

RESULTS: We indentified 558 patients with SER2/4 injuries. Minimum follow-up was 8 months. Of those, 327 were classified as SER2/4 on initial radiographs. Median age was 50 years (IQR 35 to 65). Mean Inter-observer agreement (Kappa) for the need for stress radiographs was 0.82 whilst intra-observer agreement was 0.85. Only 51% of patients requiring a stress view received one. Significantly fewer fractures were fixed during the BS and the WB period than during the GS period (8.9% and 7.0% vs 25.7%, Chi Squared P=0.0001). In the BS period, two patients underwent late fracture fixation. In the GS period, two patients underwent metalwork removal. In the WB period, no patient underwent re-operation. Thirty of 58 patients assessed with Gravity Stress underwent fixation, compared with 3 of 55, assessed with weight-bearing views.

CONCLUSION: Patients assessed with gravity-stress radiographs for SER2/4 fractures were eight times more likely to undergo surgery than those assessed with weight-bearing radiographs. We recommend the routine use of weight-bearing views in assessing the need for fixation.

P5

Using service line reporting software to evaluate income and cost of hallux valgus surgery in an NHS Hospital: coding is critical!

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INTRODUCTION: Service line reporting (SLR) is a business intelligence software model that is a tool for evaluating a hospital's income and expenditure. We used our trust's SLR software to evaluate hallux valgus surgery.

METHODS: We used SLR software to search for the primary procedure codes of w153 (1st metatarsal osteotomy) and w791 (soft tissue correction of hallux valgus) for two Consultants patients in 1 year (2012/2013). 51 cases were analysed.

RESULTS: For 32 cases, the primary procedure code was W153 (1st metatarsal osteotomy). SLR showed these cases generated a mean income of £3280 (range £1955 - £4209). The mean cost per case was £1993. Mean profit per cases coded as W153 was £1,287.

In 19 cases, the primary procedure was coded as w791 (soft tissue correction of hallux valgus) and in all these cases a 1st metatarsal osteotomy was also performed. The mean income was £1168 (range £1048 - £1605). Mean cost was £1829. This resulted in a mean loss of £661 per case coded as W791.

DISCUSSION AND CONCLUSION: Cases with a primary procedure code of W791 (soft tissue correction of hallux valgus) received a mean income that was £2112 less than those cases coded as W153 (1st metatarsal osteotomy). The W153 code generates an "intermediate foot procedure" HRG tariff for the majority of cases, compared to a "minor foot procedure HRG tariff" for W791.

This has resulted in an estimated £40,128 loss of income to our hospital for the 19 cases identified.

The soft tissue correction is coded as the primary procedure code, even if a metatarsal osteotomy is also recorded, as per the national NHS coding rules, which specifically state that the W791 code must be used as the primary procedure code. National coding guidelines may need to be changed to address this issue.

P6

Hyaluronic acid injection for ankle sprains: a randomised controlled trial

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INTRODUCTION: A double blinded randomised controlled trial was conducted to ascertain the effectiveness of hyaluronic acid injection in acute ankle sprains, confirmed with magnetic resonance imaging (MRI). Primary end points were that of return to optimal ankle function as assessed by both visual analogue pain scores (VAS) and American foot and ankle score (AFAS). A secondary endpoint was to investigate, in the case that, peri-articular injection (PI) showed benefit, that a perhaps more technically straight forward technique of intra-articular injection (II) produced similar results.

METHODS: Patients were selected through identification by either emergency department or general practice referrals on clinical suspicion of a grade 2 or 3 ankle sprains, and MRI was performed to confirm lateral ligament injury. Patients with occult fractures or other significant pathology were excluded. Those identified as having lateral ligament injury were then randomised to Hyaluronic acid (HA) or placebo (PL) injection, either peri-articular or intra-articular. Patient outcomes were assessed at day 10 and day 42, with the VAS and AFAS.

RESULTS: Among the 4 groups of 8 patients, those who received HA injection rather than PL, showed improved pain and function scores at day 10, assessed with both, VAS (Intra-articular HA v Peri-articular placebo : Mean difference 1.63 p=0.02 CI 95% 0.3-2.95) and AFAS (IAHA v PAPL, Mean difference =13.88, P=0.0016 CI 95% 6.24-21.51) scores. However, results were similar in all groups at day 42. There was no significant statistical difference between both the PI and II groups.

CONCLUSION: This study finds that early identification and intervention with hyaluronic acid injection of lateral ligament complex injuries can result in a more swift resolution of symptoms, and earlier return to function, which is statistically significant. It also suggests delivery of the therapeutic agent can be either peri or intra-articular.

P7

Complications of tibio-talo-calcaneal fusion using hindfoot nails

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INTRODUCTION: There are many methods of achieving fusion in the hindfoot utilising internal or external fixation. Hindfoot nails have been increasingly used particularly in patients with significant deformity or compromised soft tissues. Good results in terms of union and clinical outcomes have been reported. However significant complications can occur. The purpose of this study was to assess the rate and type of complications following use of hindfoot nails at our institution.

METHODS: We identified patients from a prospective database. All underwent hindfoot nailing under the care of the senior author using a standard technique. Casenotes, operation notes and radiographs were reviewed for all patients. Union at the fusion site was assessed together with the final hindfoot alignment. Details of complications were recorded.

RESULTS: We identified 52 patients undergoing 55 procedures. Mean follow up was 44.8 months (18-69). Eleven had a neuropathic cause of hindfoot deformity, 17 idiopathic arthritis, 12 previous fracture. Nineteen required additional procedures. Forty patients achieved ankle fusion and 36 subtalar joint fusion.

The commonest complication was prominent metalwork with 13 patients requiring metalwork removal. In addition 5 patients developed CRPS and 1 sustained a peri-prosthetic fracture at the tip of the nail. Nine patients developed a deep infection. In six patients limb salvage was achieved by removal of metalwork, debridement and insertion of antibiotic loaded cement beads. One patient required a period of stabilisation in a monolateral external fixator. Three of the infected cases underwent below knee amputation.

CONCLUSION: Hindfoot fusion with tibio-talo-calcaneal nails can achieve good clinical and radiological results. However significant complications can occur resulting, in a small minority, in amputation although limb preservation was possible in most cases of deep infection. We believe hindfoot nailing should be used as salvage procedure in selected cases.

P8

The radiological prevalence of degenerative arthritis of the 1st metatarsophalangeal joint

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INTRODUCTION: The prevalence of osteoarthritis of the 1st metatasphalangeal (mtpj) joint has been incompletely defined in a population-based study. The aim of the study was to determine the age and gender related prevalence of radiological 1st mtpj arthritis.

METHODS: 517 consecutive radiographs of adult patients who presented with acute foot injuries to the accident and emergency department over a six month period were used. X rays were assessed independantly by the 2 authors using the Hattrup and Johnson grading system for osteoarthritic changes in the 1st MTPJ. Grade 1 - mild osteophytes with good joint space preservation, grade 2 - moderate osteophyte formation with joint space narrowing and subchondral sclerosis and grade 3 - marked osteophytes with loss of visible joint space, with or without subchondral bone cysts. If there was a discrepancy between the 2 authors results the x ray was graded by a consultant radiologist.

RESULTS: The radiographic prevalence of MTPJ arthritis in our population was 25%. Overall incidence was higher in females with 31% affected in comparison to 18% of males. Variance between the 2 sexes was insignificant until the age of 60 where the prevalence rose to 66% in females compared to 47% in males of the same age.

CONCLUSIONS: The development of 1st MTPJ arthritis follows a typical pattern as degenerative arthritis in other joints, with increasing age being an important factor. The results of this study suggest that it is a condition that begins to appear in most cases in middle age and is more apparent in females.

P9

Surgical management of haemophilia-associated ankle arthropathy: open and arthroscopic ankle arthrodesis outcomes

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INTRODUCTION: Arthroscopic ankle arthrodesis has been shown in non-haemophiliac patients to provide similar or superior rates of fusion to open ankle fusion. However, the literature regarding ankle arthrodesis in patients with haemophilia is markedly limited. The aim of this study was to compare the rate of successful fusion between open and arthroscopic approach in patients with haemophilic arthropathy of the ankle and subtalar joints performed at a single orthopaedic unit supported by the regional haemophilia centre.

METHODS: Retrospective analysis of all patients with haemophilia who underwent ankle arthrodesis at our tertiary referral centre was undertaken. Information on patient demographics, type and severity of haemophilia, surgical approach, surgical outcomes including peri- and post-operative complications were extracted from paper chart review and electronic patient records. The rate of successful arthrodesis was determined from radiographs.

RESULTS: We identified 12 cases of surgical fusion for haemophilia-associated ankle arthropathy from a regional haemophilia centre and performed by a single orthopaedic unit. The mean age at the time of primary fusion procedure was 42 years (range 23-62). There were 8 patients with severe haemophilia of which 7 were of Type A. There were 4 cases of primary arthroscopic fusion and 7 primary open procedures, with a mean follow-up period of 9.2 years.

The success rates of arthroscopic and open tibiotalar arthrodesis were 100% and 85.7% respectively. There were 3 reported complications following open procedures, including revision arthrodesis, wound haematoma, and a superficial wound infection. In the arthroscopic group, one patient had surgical resection of a painful tibiofibular pseudoarthrosis.

CONCLUSIONS: Our study demonstrates that arthroscopic ankle fusion for haemophilia-associated arthropathy has a rate of successful fusion comparable to open procedure, albeit in a limited patient group. The results were also comparable with the reported rate of success in the literature for non-haemophiliac patients undergoing similar procedures.

P10

Morton's neuroma: the clinical picture revisited

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Various tests to clnically detect Morton´s neuroma (MN) have been described but none are pathognomonic and the most reliable technique has yet to be established.

A prospective study was undertaken on 54 feet with symptomatic Morton's neuroma (MN) to identify the most common reported symptoms and clinical signs. Patients in a foot and ankle clinic with features of MN had their symptoms and clinical signs recorded. An ultrasound was subsequently performed by a radiologist who was kept blind to clinical findings.

MN was detected on ultrasound at the site of symptoms in all but one case. Adjacent webspace neuromas were symptomatic in 27% and asymptomatic in 5%. Forefoot pain was the presenting feature in 96% and 72% characterised the pain as burning. 60% complained of altered sensation. The sensation of ´like having a pebble in the shoe´ was reported in only 52%. The thumb-index-finger squeeze test was the most consistent clinical finding (94%). Mulder's click was only positive in 63% and was size dependent (10.9mm in positive tests vs. 8.5mm in negative tests, p=0.016). Other tests were less consistent and were positive in 42% for foot squeeze, 35% for plantar percussion, 31% for dorsal percussion and 28% for sensory changes.

The diagnosis of MN can be reliably made through clinical assessment (98% chance of having an ultrasound detectable MN). A history of forefoot 'burning' pain with a positive thumb-index-finger squeeze test may be considered as pathognomonic of MN.

P11

Minimally invasive cheilectomy for the treatment of grade I-III hallux rigidus: a prospective study reporting on early patient outcome

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INTRODUCTION: Hallux rigidus is a benign condition that tends to be slow to progress that commonly affects adults of working age, leading to significant restriction of everyday function and recreational activities. We report a prospective case series of 41 patients treated for grade I to III hallux rigidus with minimally invasive cheilectomy. Patients were evaluated and outcomes quantified using the AOFAS-HMI scoring system

METHODS: 54 feet formed our patient cohort. The mean age was 43 (range, 16-61).

A 1cm incision is made proximally and over the dorsomedial aspect of joint capsule. The tissues are cleared off the bone and a 3.1mm conical burr is used to shave the dorsal osteophytes. All patients were discharged on the same day.

RESULTS: Mean follow up AOFAS-HMI scores at 17 months (range 6-30 months) was 87.1. Most patients (88%) return to the clinic in their own shoes at two weeks (36 out of 41) and all of them at six weeks. Thirty patients (73%) had returned to some sporting activities by six weeks post the procedure, 24 (59%) to non impact (swimming, cycling, cross trainer) and six patients (14%) had return to impact activities (tennis, squash). The rest of the patients did not participate in any sports or reported postoperative problems. There were no intra operative or post operative wound complications. All patients were discharged home on the day of operation. Isolated cases of painful scars and altered sensation on the dorsum of the great toe completely resolved by three to six months

CONCLUSION: Minimally invasive cheilectomy is a new, attractive and currently successful method of treating grade I to III hallux rigidus. The minimally invasive approach has the benefit of less soft tissue disruption which causes minimal pain and hence a fast return to daily activities and work.

P12

Patient expectations of hallux valgus surgery

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BACKGROUND: There is a paucity of research regarding patient expectations of corrective hallux valgus surgery. The assumption is that improved cosmesis is one of the main reasons why patients undergo surgery, however, there is no substantive evidence to support this. The hypothesis therefore, is that cosmetic improvement is the main factor that motivates patients into wanting surgery.

METHOD: Thirty female patients took part in a semi-structured interview. They filled in a questionnaire rating factors on a scale of 1-10 on how important each factor was. Secondly, they were encouraged to discuss their bunion and post-operative expectations.

RESULTS: The most important pre-operative expectation was reducing pain at the site of deformity (median score of 10). Improving the appearance of the toe (median score of 7.5) and achieving a narrower foot overall (median score of 6.5) were rated lower down the scale.

CONCLUSION: Inevitably, appearance of a bunion and prospect of narrower feet is a natural desire amongst patients when it comes to opting for hallux valgus surgery, however, the overwhelming reason for surgery is pain caused by the bunion which in turn leads to inability to find suitable footwear and be able to walk in comfort. Cosmetic improvement was not demonstrated to be a main factor influencing patients' decisions to want corrective surgery.

P13

Ankle arthroscopy for managing the sequelae of fractures involving the ankle and distal tibia

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INTRODUCTION: The role of ankle arthroscopy in managing the consequences of ankle fractures remains controversial. This study aims to assess this procedure in terms of the accuracy of pre-operative diagnosis, re-operation rate and patient-reported outcomes.

METHODS: We identified 66 patients (mean age 40 years, range 17-81) who had undergone ankle arthroscopy following a fracture of the distal tibia or fibula. Medical case-notes were reviewed to ascertain details of the index injury, intra-operative findings and identify any further procedures. Patients were then contacted using a standardised questionnaire to assess satisfaction and return to normal function.

RESULTS: Injury occurred a median of 2 years 8 months before arthroscopy (Range 6 months to 24 years). Forty nine of 66 fractures (74%) had been managed operatively. The commonest indication for arthroscopy was anterior impingement (45%) followed by degenerative change (30%) and osteochondral lesion(OCL) (18%). Intra-operative findings revealed an unexpected OCL or frank degenerative change in 20% of patients. Using a Kaplan Meier estimate one year after arthroscopy 10% of patients had undergone further surgery. This had increased to 34% by four years after arthroscopy. Four patients underwent ankle fusion.

Questionnaires were completed by 55/66 patients (84%). Only 28 patients (50%) felt surgery allowed them to return to normal activity. Thirty nine patients reported a benefit from surgery (75%) whilst 43 were satisfied (77%) and 48 (86%) would recommend the procedure to a friend.

CONCLUSIONS: Intra-articular pathology was significantly underestimated pre-operatively for one patient in five. Arthroscopy may improve symptoms in 75% of patients who complain of ankle symptoms after fracture of the ankle or distal tibia. However further procedures may be required in 34% of cases.

P14

Proximal first metatarsal opening wedge osteotomy: geometric analysis on saw bone models

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INTRODUCTION: For hallux valgus correction, a general consensus exists with regards to the use of distal first metatarsal osteotomy for minor to moderate deformities and diaphyseal osteotomy for moderate to severe deformities, with basal osteotomy reserved for severe deformities with a large intermetatarsal angle. Several types of basal osteotomy have been described, but all have disadvantages, so there has been renewed interest in opening wedge basal osteotomy. Little has been written about the geometry of this osteotomy, so we undertook this study in order to understand its power and limitations.

METHODS: Proximal opening wedge osteotomies were performed in four orientations on saw bone models: 1. Perpendicular to the ground (PG); 2. Perpendicular to the shaft (PS); 3. Perpendicular to shaft with 30 degrees of declination (DEC); 4. 30 degree oblique (OB). Pre- and post-osteotomy measurements were made using reference wires to compare axial and plantar translation and change in intermetatarsal angle.

RESULTS: Plantar translation and intermetatarsal angle correction all increased with increasing wedge size. The DEC osteotomy produced the largest increase in length of metatarsal shaft, while the PS osteotomy gave the least. Good plantar translation was achieved with the PS and DEC osteotomies. Overall, the PS osteotomy gave the best correction of the intermetatarsal angle.

CONCLUSION: The proximal metatarsal opening wedge osteotomy is a powerful osteotomy in achieving hallux valgus correction. An osteotomy perpendicular to shaft is ideal for achieving correction of the intermetatarsal angle and plantar translation with minimal lengthening. This study provides useful information about the geometry of the basal opening wedge osteotomy of the first metatarsal, which may be used for correction of a severe hallux valgus deformity, often in conjunction with a distal chevron and/or Akin osteotomy.

P15

Post-operative patient satisfaction after tarsal tunnel decompression

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INTRODUCTION: Tarsal tunnel syndrome (TTS) is a compressive neuropathy of the tibial nerve within the fibro-osseus tibial tunnel posterior and inferior to the medial malleolus. This study examines the management of TTS in a secondary care setting correlating duration of symptoms and the investigations organised and with clinical outcome and patient satisfaction.

METHODS: Retrospective case note review of 30 patients diagnosed with TTS who underwent 34 tarsal tunnel decompression procedures between April 2008 and April 2011 at Calderdale and Huddersfield NHS Trust.

Data collected included duration of symptoms, presence of Tinel's sign, ratio of patients undergoing nerve conduction studies and other imaging modalities. Clinical outcome was recorded from clinic letters.

In 2013, 24 patients were interviewed using the validated Association of Foot and Ankle Surgery Outcome Survey about pain, activity and level of function. Patient satisfaction and recommendation to relatives with surgery were recorded.

RESULTS: Out of the 30 patients, 16 were male with average age 54 (21-83). 18 patients were symptomatic for more than 12 months. For the remainder, the average was 4.6 months. 18 patients were positive for Tinel's sign. All patients underwent nerve conduction studies. Median duration between initial presentation and surgery was 174 days. 24 patients demonstrated good outcome up till discharge. 3 patients showed slight improvement. Median time for follow-up was 1212 days.

17 (70.8%) said they were satisfied with the surgery. 15 (62.5%) patients said they experienced no to mild, occasional pain. 13 (54.1%) patients said they faced no limitation in their daily activities. 16 (66.6%) patients said they could walk between 4-6 or greater than 6 blocks (1/3 mile) non-stop.

CONCLUSION: Tarsal tunnel decompression offers symptomatic relief to most patients. Most patients enjoy a good quality of life post-operatively. Further research is needed to understand why satisfactory outcomes are sometimes not achieved.

P16

The pharmacological management of Charcot neuroarthropathy

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Acute Charcot neuroarthropathy is a devastating condition and its incidence is increasing. Currently, treatment consists of immobilisation and off-loading of the involved extremity. Outcomes are frequently poor and novel treatments are being sought urgently. This review aims to outline advances in the pharmacological treatment of this condition.

PubMed and the Cochrane Database of systematic reviews were searched. Relevant papers were cross referenced.

Eleven original studies and three reviews were found. The limited data available suggest pamidronate, alendronate and calcitonin provide some clinical and biochemical improvements while zoledronic acid is deleterious and increases off-loading times. However, the data is not robust enough to convincingly demonstrate clinically meaningful effects. The studies were predominantly low quality and heterogeneous. They differed markedly in study type, pharmacological agent used, dosing regimen, disease aetiology/stage/location, concurrent off-loading regimen, outcomes and follow-up. Few were rigorous in controlling for associated confounding variables and none investigated long term outcomes.

The routine use of pharmacological treatment modalities for this condition is not recommended in the United States by the Food and Drug Administration or in the United Kingdom by the National Institute for Health and Clinical Excellence. Given the evidence available this is justified and further, higher quality, research is required.

P17

Could Weber type A fractures result in long term ankle problems?

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INTRODUCTION: The literature contains few studies providing more than 5 year follow up respect to ankle fractures. Our aim was to objectively score long term outcome in respect to fracture injury patterns at our institution.

METHODS: Our trauma database identified 152 adult ankle fracture patients from 2004-2007 (5-8years follow up) treated with ORIF or conservative management appropriately according to standard fixation techniques for simple fracture patterns. 70 patients were unavailable at time of follow up due to incorrect contact details, death or inability to participate due to confusion or medical illness leaving 82 patients (42 male, 40 female) mean age 52 years (range, 19 to 92) for analysis. Each patient completed the foot and ankle disability index (FADI) score (0-100). Radiographs were analysed for fracture pattern.

RESULTS: Overall mean FADI score was 90 (range, 15 to 100). 3 fracture patterns were associated with above average functional scoring ($p< 0.01$): uni malleolar fractures of the medial side (n = 6, FADI: 99), isolated Weber B (n = 30, FADI: 93) and Weber C (n = 3, FADI: 100) injuries. Fracture patterns with below average outcomes were: tri-malleolar (n = 12, FADI: 87), bi-malleolar (n = 17, FADI: 86), isolated Weber A (n = 11, FADI: 85) and miscellaneous injuries including isolated posterior malleolus or syndesmotic injuries (n = 3, FADI: 88). These injury patters were significantly associated with worse functional outcome at 5-8 year follow up ($p< 0.01$, unpaired students t test).

CONCLUSIONS: Although Weber A injury patterns are traditionally considered benign our study suggests below average functional recovery for a large proportion of these injuries, this may be due to unreported fiberous / non union, instability or peroneal symptoms for this patient group. We aim to undertake further investigation into possible causes for these findings.

P18

The use of extracorporeal shockwave therapy (ESWT) for severe resistant plantar fasciitis

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INTRODUCTION: Plantar fasciitis (PF) is typically self-limiting and the vast majority of patients are successfully treated with conservative measures. However, for a small number of patients, symptoms persist and may require alternative treatment. In 2009, NICE found ESWT to be a safe treatment option for refractory PF and recommended further clinical research. This audit aimed to investigate the effectiveness of ESWT for resistant PF.

METHODS: Patient enrolment took place during an 18-month period in an outpatient department of a DGH. Patients were recruited from referring primary care providers (GPs, podiatrists, physiotherapists). Inclusion criteria included a history of at least 3 months of chronic plantar heel pain that proved resistant to at least 3 months of conservative treatment. Patients with bilateral symptoms were not excluded. Diagnosis was confirmed by clinical examination and by excluding other causes of pain with an MRI scan.

A total of 32 heels (25 patients) received 3 shockwave interventions, each two weeks apart. 2000 pulses were delivered each intervention using the Swiss Dolorclast radial shockwave device without local anaesthetic. Effectiveness was measured using the Foot Function Index (FFI) pre-treatment and 3 months post-treatment. A reduction in FFI >10% was defined as a responder.

RESULTS: There were 7 missing outcomes at 3 months, giving a total of 25 completed outcome scores. At baseline, the mean FFI score was 53.0% +/-21.0. At 3 months, the mean FFI score was 28.7% +/-26.6. The mean difference was 24.3% (95% CI: [13.88-34.84]: $P< 0.0001$).

14/25 heels (56%) achieved >10% reduction in FFI scores at 3 months. No side effects were observed.

CONCLUSION: This audit demonstrated that ESWT is a safe treatment option for the management of severe resistant PF. However, due to the small sample, it is not possible to provide robust clinical evidence of its effectiveness. Further research is warranted.

P19

What proportion of patients eventually require joint fusion following simple ankle fractures?

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INTRODUCTION: The literature contains few outcome studies providing long term follow up for ankle fractures, to our knowledge no studies have defined the medium to long term probability of significant further surgery for this group of patients.

METHODS: Using our institutions coding database we identified a cohort of patients (n = 2137) treated for ankle fractures over a 10 year period (Jan 2001 to Dec 2011). Primary data of interest was collected in respect to whether the fracture was managed conservatively or with open reduction internal fixation (ORIF) and further procedures each patient underwent at our institution.

RESULTS: 73% of the identified fractures were managed non-operatively (n = 1552), 28% (n = 585) underwent ORIF. Of patients treated with ORIF, 58 (8.8%) required metalwork removal. Ankle joint fusion was the eventual outcome for 15 patients (0.7%). 10 patients required ankle joint injections (0.5%) and 2 patients underwent ankle arthroscopy following their fracture (0.1%). Significantly more of the patients requiring eventual joint fusion were from the ORIF group (p = 0.001 Pearson Chi-Squared test, n = 10 vs 5 patients, relative risk 5.3, CI 1.7-17.7). Mean time to fusion or arthroscopy was at 23months (range 1-50months) and 30months (range 9-52months) respectively.

CONCLUSION: It is practical to assume that more serious fracture patterns would prompt treatment with ORIF and be more likely to result in subsequent ankle arthritis and eventual fusion. Our data supports this hypothesis as the relative risk for ankle fusion was over five times higher for fracture patterns treated with ORIF. Patients can be reassured that overall the probability for significant surgical procedures other than metal work removal is low however our sample may underestimate the additional surgical morbidity and fusion rate.

P20

Tendo-Achilles electromyography (EMG) activity and ground reaction force during functional rehab: a comparison of two designs of walker boot

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INTRODUCTION: Functional rehabilitation has been advocated for both post-operative and non-operative management of achilles injuries. A key component is weight bearing in a plantar-flexed walker boot. There are two different designs: an articulated boot with a hinge at the ankle and no heel support, versus a static boot where equinous is effected by the insertion of heel wedges within the boot.

We conducted a study to explore whether there was a difference between the achilles load in each different type of boot. We measured ground reaction force and the EMG activity of the gastrosoleus in healthy volunteers wearing the boots.

HYPOTHESIS: There will be no difference in ground reaction force or muscle activity when weight bearing with either walker boot.

METHODS: 10 male and 10 female volunteers were recruited and each walked on a running track with embedded force plates while wearing EMG electrodes on the gastrosoleus. The experimental conditions were: control (trainers), ProtecROM at 20 degrees, and Aircast FP with adjustment wedges at 20 degrees. Results were controlled for walking speed and body weight.

RESULTS: Both boots lead to a significant decrease in both EMG muscle activity and ground reaction force when compared with normal trainers. The articulated boot had lower muscle activity than the fixed boot (p=0.0005). The fixed boot lead to lower ground reaction force than the articulated (p=0.001). Males had more muscle activity than females while wearing the walker boots (p=0.03).

DISCUSSION: This study demonstrates significant differences between two types of boot commonly used in functional rehabilitation of achilles rupture. There were also significant differences between male and female subjects. We recommend that these findings are considered when designing rehabilitation protocols and when evaluating the literature.

P21

Cadaveric, MRI assessment of the hallucal metatarso-phalangeal joint: implications for fusion surgery

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Non union following hallucal Metatarso-Phalangeal (MTP) joint fusion has been reported to be as high as 15% following preparation of the articular surfaces with a dome shaped reamer and fixation with a dorsal plate. Flat cuts to prepare the articular surface are, arguably, more likely to help achieve union at the fusion site. However, they are more likely to lead to rotational or axial malalignment at the fusion site.

We wished to identify, via cadaveric specimens, the normal thickness of articular cartilage at the hallucal MTP joint. We did this by amputating the first ray from a fresh, frozen cadaver. This specimen was then scanned using a 7 tesla MRI scanner.

This is the first scan that we have performed. We have funding, via a BOFAS research grant, to perform further scans.

We have identified the articular cartilage thickness within 9 zones of both the metatarsal head and the proximal phalanx at the MTP joint. We also describe the cartilage thickness of the sesamoid articular surface.

Such information is of use to the forefoot surgeon who performs fusion surgery. An understanding of the thickness of the articular cartilage thickness at the MTP joint will aid in the adequate preparation of the joint surface. This will improve the incidence of successful fusion. Our finding are also likely to be of interest to the basic scientist who wishes to utilise MRI scanning technology to orthopaedics - ours is the first report, as far as we are aware, of the use of a 7 tesla MRI scanner in orthopaedic research.

P22

The interim results on estimation of a forefoot surgery quality-adjusted life years (QALY)?

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Planned reduction in expenditure can be expected to result in rationing of NHS services. A method of assessing the financial benefit of a treatment is to estimate the quality-adjusted life years (QALY's). The aim of this study was to perform a cost-utility analysis of forefoot surgery.

During a period between October 2011 and March 2012 all forefoot procedures were prospectively followed with the MOXFQ up to 1- year. We followed the health economic analysis as identified by Jenkins et al 2013. Health states derived from the MOXFQ were converted to a single summary index on a scale of -1 to 1, where 1 represents perfect health, and 0 represents no change. Using life expectancy tables we calculated the time spent in that state (in years) to derive the QALY's gained or lost. Surgical costs were identified as per the HRG code to calculate the cost per QALY. Statistical analysis was undertaken to test the normality of data and 95% confidence intervals.

36 patients, with an average-age of 63.4yrs underwent forefoot surgery between Oct 2012- March 2012. All patients had hallux valgus correction with correction of lesser toe deformities and completed pre-operative MOXFQ and post-operative 1 year MOXFQ. We found a 33.4% (29.4-36.7%) positive improvement in MOXFQ at 1-year and identified the mean QALY gained is 4.9, as the average age at death on the Wirral 78.2 meaning any foot health improvement could potentially last 14.8 yrs. Our coding department identified the mean cost of surgery, was £3082.42 in this group and the mean lifetime cost-per-QALY is £733.90 if patient health remained static.

Forefoot surgery appears a cost-effective and compares favourably with both THR and TKR. We advocate further study into the QALY value for specific forefoot procedures and variance due to yearly change in NHS-payment structures.

P23

One year of ankle fractures on the Wirral: how was the syndesmosis managed?

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INTRODUCTION: Ankle fractures are operated on by most trauma surgeons regardless of sub specialty. The subtlety of the Syndesmosis injury is very important and must not be missed.

METHODS: We analysed 124 consecutive operated ankle fractures over 12 months in our institution. Data was collected on all patients who underwent surgery for ankle fractures from initial management to discharge. Radiographs, intra-operative data and clinical notes were reviewed by a single foot and ankle surgeon (DM). Exclusion criteria were; patients who had a manipulation only, skeletally immature patients, and non-ankle fractures.

All should have had an intraoperative, radiographically documented syndesmosis test and, if unstable, fixation.

RESULTS: Female:Male 77:47, mean age 49.0, range 14-97. The primary surgeon: senior registrar 46.8%, foot and ankle fellow or consultant 33.9%. Weber classification was A = 1.6%, B = 62.9%, C = 31.5%, isolated medial malleolar fractures = 4.0%.

A documented intraoperative syndesmosis test was performed in 29.8% (hook = 37.9%, rotation = 56.8%, tap test = 5.4%) and of these 7 went on to have a syndesmosis fixation. Of the patients who did not have a documented intraoperative syndesmosis test, 2 patients progressed to revision surgery to fix the syndesmosis.

The syndesmosis fixation used was (1 screw = 59.5%, 2 screws = 35.7%, 1 tightrope = 2.4%, 2 tightropes = 2.4%). A total of 5 patients (4.0%) who were operated on at the trust, went on to require revision surgery; 2 of these for an unstable syndesmosis post primary operation. Neither had a documented intraoperative Syndesmosis test. There was 1 patient who had their primary fixation elsewhere that required revision surgery at our trust for syndesmotic stabilisation.

CONCLUSION: We have demonstrated the importance of routinely testing and documenting the stability of the syndesmosis intraoperatively in all cases. This will help to decrease revision surgery.

P24

Emergency department reduction and casting of ankle fractures: satisfactory or not?

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INTRODUCTION: The initial management of ankle fractures is carried out in the Emergency Department (ED). It is important they are adequately reduced and appropriately splinted in cast to alleviate pain and help protect the soft tissues. Often the ankle is left in an inappropriate position prior to operative intervention.

METHODS: 124 consecutive ankle fractures were operated on at a single centre over a 12 month period from March 2012 to April 2013. Radiographs and clinical notes were reviewed by a single foot and ankle surgeon. Reduction and tibiotalar angle in cast were assessed. Neutral tibotalar angle is 115 degrees.

RESULTS: Female:Male 77:47, mean age 49.0, range 14-97. Weber classification was A=1.6%, B = 62.9%, C = 31.5%, isolated medial malleolar fractures = 4.0%.

55.6% of patients had a satisfactory reduction in cast from the Emergency Department. 25.8% of patients reductions were not satisfactory. 14.5% of patients did not have radiographs in cast. 3 patients (2.4%) had fractures that were misdiagnosed initially and therefore were not placed into cast. 13.7% of patients required more than 1 attempt at reduction in the ED. 14 patients (11.3%) required a manipulation in theatre to reduce the ankle after failure in the ED.

The range of tibio-talar angles in first cast from the ED was 109-156 degrees, with a mean angle of 128.4 degrees.

CONCLUSION: Over a quarter (25.8%) of patients did not have satisfactory reduction of their ankle fracture prior to definitive treatment, with 14.5% not having imaging post application of cast.

We highlight the importance of the initial management of ankle fractures in the ED. That is, the reduction, appropriate cast application and imaging of the ankle in cast. Our plan is to hold lectures and casting sessions for ED practitioners and junior orthopaedic trainees.

BOFAS
British Orthopaedic Foot & Ankle Society

PROGRAMME AT A GLANCE

WEDNESDAY 6TH

07.30	Registration
08.00	**SYMPOSIUM: BOFAS /ARUK** The Way Forward in Foot and Ankle Surgery Research
09.00	Welcome *Mr S A Henderson, President*
09.05 - 10.45	**INSTRUCTIONAL 1 - Talipes Equino Varus**
09.05 - 09.25	Embryology / Pathophysiology/ Epidemiology/ Anatomy *Paula Kelly*
09.25 - 09.45	Standard Management *Catherine Duffy*
09.45 - 10.05	Management of the Complex Club Foot *Gavin DeKiewiet*
10.05 - 10.25	Reconstrucion for Neglected / Recurrent Deformity *Sunil Dhar*
10.25	Discussion
11.15 - 13.00	**Free Papers 1**
14.00 - 15.30	**INSTRUCTIONAL 2 - Trauma (Ankle and Hindfoot)** Calcaneal Fractures - Where are we now?
14.00	UK RCT: Surgery vs Conservative Treatment *Prof. Damian Griffin*
14.20	Discussion
14.30	**DEBATE** The Majority of Calcaneal Fractures should not be managed surgically *Jim Barrie*
14.40	The Majority of Calcaneal Fractures should be managed surgically *Mark Easley*
14.50	Discussion
15.00 - 15.30	Guest Lecture: Lisfranc Injuries *Mike Aronow*
16.00 - 18.00	**INSTRUCTIONAL 3 - Infection in the Foot and Ankle**
16.00 - 16.15	Revascularisation in Patients with Foot and Ankle Infection *Paul Blair*
16.15 - 16.35	Implant Sepsis in the Foot and Ankle - Diagnosis / Management *Tony Berendt*
16.35 - 16.55	Infection in the Diabetic Foot *Ben Lipsky*
16.55 - 17.10	An American Perspective *John Kennedy*
17.10 - 17.20	Optimal Care in the Community for Patients with Foot Sepsis *Honor Prout*
17.20 - 17.45	Discussion

THURSDAY 7TH

08.00	Registration
09.00 - 10.30	**PROBLEM CASES** : Library Bar
09.30 - 10.30	**JOINT INSTRUCTIONAL COURSE with AHPs :** Main Hall Tibialis Posterior Tendon Dysfunction
09.30 - 09.50	The Role of Orthotics *Julian Livingstone*
09.50 - 10.10	The Role of Physiotherapy *Gillian Walker*
10.10 - 10.30	Surgery for Types 1 and 2 *Mike Aronow*
11.00 - 12.30	**JOINT INSTRUCTIONAL COURSE with AHPs :** Tibialis Posterior Tendon Dysfunction
11.00 - 11.20	Surgery for Types 3 and 4 *Mark Easley*
11.20 - 11.30	Discussion
11.30 - 11.50	Multidisciplinary Team Working: The Heel Pain Clinic *Matt Solan & team*
11.50 - 12.00	Discussion
12.00 - 12.30	Networking for AHP's - The Role of AFAP *Noelene Davis*
10.30 - 13.00	**WORKSHOPS** (1) Tornier Workshop - Copenhagen Room (2) WG Healthcare Workshop - Dublin Room 1 (3) DuyPuy Workshop - Dublin Room 2 (4) OrthoSolutions Workshop - Rotunda Room
14.00 - 15.30	**Free Papers 2**
16.00 - 17.45	**INSTRUCTIONAL 4 - Cartilage Injury and Repair in the Ankle**
16.00 - 16.15	Chondral Injury - Diagnosis, Imaging, Classification *Stephen Kearns*
16.15 - 16.30	Chondral Injury and the Pathogenesis of OA in the Ankle *James Calder*
16.30 - 16.45	Cartilage Healing and How can it be Enhanced? *John Kennedy*
16.45 - 17.00	Arthroscopic Management of Cartilage Injury *Niek van Dijk*
17.00 - 17.15	Allograft for Massive Osteochondral Damage - Current Status *Mark Easley*
17.15 - 17.45	Discussion

FRIDAY 8TH

07.45	Registration
08.00 - 08.45	**Early Bird sessions : Outcomes - SOFA**
08.45 - 08.55	The Foot *Rami Abboud*
09.00 - 10.30	**Free Papers 3**
11.00 - 13.00	**INSTRUCTIONAL 5 - Miscellany**
11.00 - 11.15	**Total Ankle Replacement** NJR : 3 Year Update *Andy Goldberg*
11.15 - 11.45	Guest Lecture: The Evolution of Total Ankle Replacement in the USA *Mark Easley*
11.45 - 11.55	**Surgical Podiatry** UK Issues *Fred Robinson*
11.55 - 12.05	USA Issues *Mike Aronow*
12.05 - 12.15	Discussion
12.15 - 12.25	**Revalidation: Where are we now and Where are we going?** Revalidation: Where we are now *Alan Walker (GMC)*
12.25 - 12.35	Revalidation : What can the BOA do to help *Tim Briggs (BOA)*
12.35 - 12.45	Revalidation for Foot and Ankle Surgery - Where are we going *Steve Bendall (BOFAS)*
12.45 - 13.00	Best Paper / Best Poster Prizes
13.30 - 15.15	AGM
15.15 - 15.30	Presidential Handover to Steve Bendall
	Close