3.7 Sarcoma, Lymphoedema, Vascular Malformations

12th & 13th October 2016
# Advanced Educational Courses in Plastic Surgery

## Sarcoma, Lymphoedema, Vascular Malformations

### 12th & 13th October 2016

### Day One- Wednesday 12 October 2016

**Sarcoma – Convened by Mr F Peart / Mr M Parry**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>07:50</td>
<td>Registration and Coffee</td>
</tr>
<tr>
<td>08:25</td>
<td>Welcome: Mr Umraz Khan</td>
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<tr>
<td>08:30</td>
<td><strong>Session 1 – Sarcomas and their treatment</strong>&lt;br&gt;Chair: Mr F Peart&lt;br&gt;Introduction to sarcoma – The basics&lt;br&gt;Mr F Peart/ Mr M Parry&lt;br&gt;09:00</td>
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<tr>
<td>10:50</td>
<td><strong>Session 2 - Sarcomas and their treatment continued</strong>&lt;br&gt;Chair: Professor L Kindblom&lt;br&gt;Sarcoma surgery and margins&lt;br&gt;Professor L Jeyes&lt;br&gt;11:40</td>
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<tr>
<td>13:50</td>
<td><strong>Session 3 - Reconstruction after sarcoma surgery</strong>&lt;br&gt;Chair: Mr M Parry&lt;br&gt;Bone oncology and reconstruction&lt;br&gt;Professor L Jeyes&lt;br&gt;14:20</td>
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<tr>
<td>15:50</td>
<td><strong>Session 4 - Reconstruction after sarcoma surgery continued</strong>&lt;br&gt;Chair: Professor L Jeyes&lt;br&gt;Free flap reconstruction&lt;br&gt;Mr M Ragbir&lt;br&gt;16:20</td>
</tr>
</tbody>
</table>
Day Two- Thursday 13 October 2016

Lymphoedema - Convened by Miss A Dancey/Mr F Peart

08:00 Registration and Coffee

Session 1 – Lymphoedema

08:40 Introduction to lymphoedema
09:00 Lymphoedema – pathology and management
09:40 Imaging in lymphoedema
10:10 Lymphovenous anastomosis
10:40 Lymph node transfer
11:10 Coffee and Trade Exhibitions

Session 2 - Lymphoedema continued

11:30 Liposuction for lymphoedema
12:00 Nursing support for lymphoedema
12:30 Group discussion
12:50 Lunch and Trade Exhibitions

Vascular anomalies - Convened by Mr H Nishikawa/Mr F Peart

Session 3 - Vascular anomalies

13:40 Introduction and the science and current classification of vascular anomalies
14:05 The management of congenital and infantile haemangiomas
14:30 The management of capillary vascular malformations and the role of laser in the management of vascular anomalies
14:55 Group discussion
15:10 Coffee and Trade Exhibitions

Session 4 – Vascular anomalies continued

15:30 The interventional management of low flow vascular anomalies
16:00 The radiological management of high flow lesions with interventions
16:30 The role of surgery in the management of vascular anomalies
17:00 Round table discussion
17:30 Close

CME Points: Day 1: 7.5 Day 2: 7 Whole Meeting: 14.5
Faculty Biographies

Dr Charles Candish

Charles has been the Consultant Clinical Oncologist at the Gloucestershire Oncology Centre, Cheltenham since 2004 having trained in Cambridge, London and Bristol followed by a Radiation Oncology Fellowship in Canada. He sub-specialisms is in the management of sarcomas working in conjunction with the surgical teams at the Royal Orthopaedic and Queen Elizabeth Hospitals in Birmingham. He has chaired the West Midlands Sarcoma Advisory Group and is the local Principal Investigator in many national sarcoma trials, most notably the VORTEX, GeDDIS and ImRIS trials. He also has an interest in patient safety/quality improvement work and recently graduated from the Improvement Advisor program at the Institute for Healthcare Improvement at Harvard.

Ms Julie Cunneen

Julie Cunneen qualified as a nurse in 1986 at East Birmingham School of Nursing and is the Lymphoedema Clinical Lead for Birmingham Community Healthcare Foundation Trust which consists of 3 well established services across Birmingham. She has 18 years’ experience in Lymphoedema and recently surgical related treatment for Lipoedema and lymph node transplantation.

Her nursing back ground is in surgery and medical oncology and she established one of the first Lymphoedema Services in the West Midlands in an Acute Sector Hospital in 1998.

She received her Master Degree in Health Sciences from the University of Birmingham in 2005 and other qualifications include: Oncology Diploma, Independent nurse prescriber and a Diploma in Manual Lymphatic Drainage (Vodder and Fluoroscopy Guided techniques).
Miss Anne Dancey

Anne studied medicine at Glasgow University, United Kingdom and completed her surgical training in the West Midlands. In 2010, Anne was appointed as a consultant at the Queen Elizabeth University Hospital in Birmingham. In 2015, she left the NHS to commit to working in the private health sector.

Anne is trained in all areas of aesthetic and reconstructive Plastic Surgery performing the full repertoire of procedures. Her specialist interest lies in aesthetic and reconstructive breast surgery, lymphoedema surgery and body contouring after massive weight loss. She completed a 6 month fellowship at the world famous breast reconstruction unit in Gent, Belgium, with some of the world’s best Microsurgeons. To her knowledge, Anne is one of only a few surgeons in the UK performing DIEP flap breast reconstructions and lymph node transfers for lymphoedema. In recent years, Anne has also increasingly focused on helping lipoedema sufferers.

Anne is a council member of the British Association of Plastic and Reconstructive Surgeons (BAPRAS), the British Lymphoedema Society (BLS) and also a Royal College of Surgeons (RCS) regional speciality advisor for Plastic Surgery. She is also a member of the British Standards Institute responsible for improving European and national safety standards in non-surgical treatment. Anne is a regular contributor to work done with the BLS and Lipoedema UK. Author of over 30 papers and several prestigious book chapters, Anne regularly conducts peer review articles for the major international Plastic Surgery journals.
Henk Giele schooled and trained in Western Australia, did his Masters in Surgery at the Bernard O’Brien Institute of Microsurgery, University of Melbourne, then surgical fellowships in Paris and Oxford. He has been the Consultant Hand and Plastic Surgeon in Oxford at the Radcliffe Hospitals and Nuffield Orthopaedic Centre (now merged to Oxford University Hospitals) since 1996.

Henk’s speciality interests are in orthoplastics (microsurgical reconstruction after trauma, musculoskeletal infection, bone and soft tissue sarcoma) and hand surgery including congenital upper limb anomalies, brachial plexus and peripheral nerve conditions, trauma and degenerative conditions. More recently, he has developed an interest in transplantation particularly vascularised composite allografts, of which he has performed a world-leading series of 25 transplants (19 abdominal wall, 5 sentinel forearm flaps and 1 facial nerve parotid composite).

His research interests are surgical innovation, clinical research into the genetic and molecular basis and treatment of congenital upper limb anomalies, the genetic basis and treatment of Dupuytren’s disease, the management of sarcoma, clinical trials in hand surgery, and the transplantation of composite vascularised tissue.

He is a specialist advisor to the NICE new technology assessment committee. He sits on the NHSE Clinical Reference Groups for both sarcoma and specialised children’s surgery. He has previously been editor for the journal of Hand Surgery (European edition) and deputy editor of JPRAS (Journal of Plastic Reconstructive and Aesthetic Surgery). Henk Giele has published over 110 peer-reviewed articles, 19 book chapters and a book, the Oxford Hand book of Plastic Reconstructive Surgery.
Marco Innocenti M.D.


He is currently the Director of the “Plastic & Reconstructive Microsurgery Department ” of Careggi University Hospital in Florence (Italy). He is Associate Professor of Plastic Surgery at the University of Florence and he also holds the position of Director of the Plastic Surgery residency program.

He acted as visiting professor at the “Henry Ford Health System” in Detroit [USA], at the “Duke University” in Durham [USA], at “Hirosaki Medical School” in Hirosaki [Japan], at Curtis Hand Center in Baltimore [USA], at “Victor Babes University of Medicine and Pharmacy” in Timisoara [Romania], at Larissa University [Greece], Beijing University [China], Penn University in Philadelphia [USA], Munich University [Germany] and Hong Kong University [Hong Kong].

Since 2002 he’s been the Consultant for Paediatric Hand and Reconstructive Microsurgery at “Ospedale Pediatrico Meyer” in Florence (Italy), since 2006 at Gaetano Pini Orthopaedic Institute in Milan, and since 1998 at Rizzoli Institute in Bologna.

Dr Innocenti’s clinical work is focused on post traumatic and post oncological functional reconstruction of bone as well as soft tissue with a special interest in the Vascularised Proximal Fibular Epiphyseal Transfer in the growing individuals and the application of perforator flaps and propeller flaps.

His clinical interest extents also to the treatment of the congenital differences of the upper extremity.

He has performed more than 800 microsurgical procedures and 3500 operations in Plastic Surgery and hand surgery.

He published 102 papers in international journals and 12 book chapters. He is past president of the Italian Society for Microsurgery (SIM) [2002-2005] for which he currently holds the position of European Delegate. He is member at large in the Council of the World Society for Reconstructive Microsurgery. He is a member of the American Society for Reconstructive Microsurgery (ASRM), the American Society for Surgery of the Hand (ASSH) and the World Society for Reconstructive Microsurgery (WSRM). He acted as Associate Editor for the “Journal of Hand Surgery [American]” and reviewer for the “Journal of Plastic Reconstructive and Aesthetic Surgery” and for the “Journal of Hand Surgery [European]”
Dr Steven James is the Consultant Musculoskeletal Radiologist and Honorary Senior Lecturer with the School of Sport, Exercise and Rehabilitation Sciences at the University of Birmingham, UK. He was appointed in 2006 after completing a fellowship at the Royal National Orthopaedic Hospital, London UK in Musculoskeletal and Spinal imaging with an emphasis on interventional techniques.

Dr James has developed a particular interest in the diagnosis and radiological treatments for primary bone tumours. He undertakes musculoskeletal and spinal intervention services at one of the leading UK specialist orthopaedic hospitals.

Dr James has a strong research interest and has over 75 publications in peer reviewed scientific journals on orthopaedic, spinal and sports injury related topics. He has edited 2 textbooks and written numerous book chapters. He regularly lectures at national and international meetings on musculoskeletal and sports injury related topics. He is currently on the executive committee of the British Society of Skeletal Radiologists.

Professor Lee Jeyes is the Consultant Orthopaedic Surgeon at the Royal Orthopaedic Hospital NHS Trust.

He performs around 400 operations per year including knee surgery (key hole surgery for torn cartilages), knee replacement, revision knee replacements, uni-compartmental knee replacement and conditions relating to a broken knee. Professor Jeyes also specialises in the treatment of bone tumours and soft tissue tumours.

Professor Jeyes has published over 50 scientific papers in the world’s most important orthopaedic Journals and has written three chapters in text books about surgery. He regularly lectures around the world on joint replacement and tumour surgery and is also a reviewer for leading Orthopaedic Journals, helping to decide whether research is robust enough to be published. Professor Jeyes sits on several national committees including the National Cancer Research Institute and the National Cancer Intelligence Network.
Mr Umraz Khan

Umraz Khan was the Council Member for the South West of England, sitting from 2012-2014. Mr Khan graduated from University College London in 1991. He went on to undertake general surgical training in Bath and higher surgical training in Plastic Surgery on the London rotation. He undertook a trauma fellowship at Liverpool, Sydney Australia before taking up a consultant job at Charing Cross Hospital in London in 2002. He was program director for training in London prior to taking up a post in Bristol in 2006. He has published many papers on limb reconstruction and remains actively involved in this area of surgical research. He is now an a faculty member in the UK and visiting professor to the Allama Iqbal Medical School in Lahore.

Professor Lars Gunnar Kindblom

Professor Lars-Gunnar Kindblom is an internationally renowned pathologist and researcher within the field of morphology and genetics of mesenchymal tumours. He has well over 200 original publications in peer-reviewed journals, more than 50 books, book-chapters, atlases and invited review articles. He has given over the last 40 years hundreds of national and international lectures, seminars and courses.

He has defined a number of new soft tissue and bone tumour entities and carried out ground-breaking research in the field of gastrointestinal stromal tumours. He has served as a reviewer for numerous medical journals and for grant committees and been a member of the WHO classification panel for bone-and soft tissue tumours and tumours of the digestive system.

He has primarily worked at the Sahlgren Academy University Hospital, Gothenburg, Sweden, the Armed Forces Institute of Pathology, Washington, D.C. and the last 11 years at the Royal Orthopaedic Hospital and School of Cancer Sciences, Medical School, Birmingham University, UK.
Hannu Kuokkanen completed his medical training at the University of Helsinki from 1989-2006 which includes Doctor of Medical Science, Specialist in General Surgery and Specialist in Plastic Surgery.

Hannu has been appointed as the Consultant Orthopedics Surgeon Lahti City Hospital 1994-1996, Consultant Plastic Surgeon Päijät-Häme Central Hospital, Lahti 1997-1998, Consultant Plastic Surgeon Helsinki University Hospital, Töölö 1998-2002, Head of the Dept of Plastic Surgery Helsinki University Hospital, Peijas 2003-2004, Head of the Dept of Plastic Surgery Helsinki University Hospital, Töölö 2004-2005, Head of the Dept of Plastic Surgery Tampere University Hospital 2005-2014 and Head of Division of Plastic Surgery. Hannu is at present the Professor Helsinki University Hospital.

Hannu is also the President of the Finnish Surgical Society.

After achieving the Medical Degree at Barcelona University did the Plastic Surgery training at Sant Pau University Hospital in Barcelona. He completed his training doing fellowships in Canniesburn Hospital (Glasgow) and in Queen Victoria Hospital (East Grinstead).

In 1999, he introduced DIEP flaps for breast reconstruction in Spain. He got a post as consultant in Plastic Surgery at Sant Pau University Hospital in 2001. Two years later became the Chief of Microsurgery Unit and in 2007 he won the position as Chief of Plastic Surgery Department and Professor in Plastic Surgery at Universitat Autonoma de Barcelona.

Prof. Masia was President of the Spanish Society of Plastic Surgery from 2011-13 and currently he is the President of Spanish Society of Plastic Surgery Foundation for Education. From 2010 he is the Director of the International Master Degree on Reconstructive Microsurgery at Universitat Autonoma de Barcelona. He has been invited as lecturer and visiting Professor in more than one hundred international meetings in Plastic Surgery. Author of several papers and books; his current main interests are perforator flaps, lymphedema surgery and medical education.

Currently his main interest working areas are breast surgery, lymphedema and some genital reconstruction. For many years he also worked in lower limb reconstructions and H&N oncology reconstruction. Perforator flap reconstruction has been his expertise after 20 years working on it. From 2005 he is the Chief of Plastic Surgery Department at Sant Pau Hospital and Professor in Plastic Surgery in Universitat Autonoma de Barcelona.
Dr Ian McCafferty
Consultant diagnostic and Interventional radiologist
Queen Elizabeth Hospital Birmingham & Birmingham Children’s Hospital

Dr Ian McCafferty qualified in London, University College Hospital, and undertook his radiology training in the West Midlands and an Interventional Fellowship at the John Radcliffe hospital before taking up a consultant post in Birmingham in 1999. He has a specific interest in uroradiology and embolisation, with a particular interest in the management of vascular anomalies. In 2000 he was persuaded to undertake the interventional service at Birmingham Children’s Hospital. It was at BCH after meeting with Mr Nishikawa and Mr Monaghan that the vascular malformation service developed with subsequent expansion and development at Queen Elizabeth Hospital. The service has now expanded to such a degree that we have developed separate craniofacial and peripheral vascular malformation clinics with 6 surgeons, 3 interventional radiologists, 2 dermatologists and a 2 histopathologists. The service offers management to the full range of vascular anomalies including full diagnostics and treatment with surgery and common sclerotherapy agents. The team has an active research and has published widely.

Mr Tobian Muir

Tobian Muir is the Consultant in Plastic and Reconstructive Surgery and has been based at the James Cook University Hospital in Middlesbrough since 2003. He has a subspecialist interest in treatment of vascular anomalies. His vascular anomalies unit sees 200 new patients per year with experience of 3000 sclerotherapy treatments of hemangiomas and vascular malformations over the last 12 years.
Mr Alex Munnoch

Alex Munnoch has been the Consultant Plastic Surgeon at Ninewells Hospital, Dundee, Scotland for the past 13 years. A graduate of Dundee University, he is also a Fellow of the Royal College of Surgeons of Edinburgh. He is a former chair of the British Lymphology Society and is currently a member of the executive committee of the International Society of Lymphology. He is also Patron of TalkLipoedema. His areas of interest are breast reconstruction, microsurgery, lasers, vascular malformations, lymphoedema and lipoedema. He has presented extensively on the surgical management of lymphoedema.

Mr Max Murison

Mr Murison was appointed as the Consultant Plastic Surgeon at Morriston Hospital, Swansea, Wales in 1995. He gained his medical training in Cardiff and has worked in Plastic Surgery units in Bristol and Belfast and has traveled widely teaching on a variety of subjects.

Aside from laser and cosmetic surgery, his areas of expertise include scars, burns and congenital skin problems. Mr Murison is a member of the British Association of Plastic Surgeons, the British Medical Laser Association and British Association of Aesthetic Plastic Surgeons.

Mr Hiroshi Nishikawa

Mrs Sarah Pape

Sarah Pape is the Consultant Plastic Surgeon at Newcastle upon Tyne Hospitals NHS Foundation Trust, based at the Royal Victoria Infirmary. Her specialist interests are burns and lasers.
Mr Michael Parry

Michael Parry is the Consultant Orthopaedic Surgeon at the Royal Orthopaedic Hospital specialising in orthopaedic oncology and primary and revision arthroplasty.

Michael undertook his undergraduate medical training at the University of Bristol qualifying in 2001. He continued his training in Oxford and the South East before returning to Bristol to complete his higher surgical training. He completed his Doctorate in Medicine in 2012 and was previously appointed as an NIHR clinical lecturer in orthopaedic surgery at the University of Bristol. He has completed fellowship training in lower limb arthroplasty in Vancouver and orthopaedic oncology here in Birmingham. Michael began working at the ROH in 2014 and is an Honorary Senior Lecturer at the University of Aston.

Michael’s interests in orthopaedic oncology, focus particularly on the management of sarcomas of the pelvis. He has developed a specialist practice in lower limb arthroplasty, with a particular interest in the management of infected joint replacements. Michael has published extensively in these fields and has continued to develop his research interests in both oncology and revision lower limb arthroplasty.

Mr Francis Peart

Mr Francis Peart has been a Plastic Surgery in Birmingham since 1995. He has been involved with the Sarcoma Service at the Royal Orthopaedic Hospital since that date, initially with an ad hoc service that evolved to one with dedicated lists, clinics and MDT attendance. The Plastic Surgery support now involves soft tissue sarcoma resections, complex reconstructions, and the treatment of complications that include post radiotherapy wound breakdown and implant infections. He is pleased to have this opportunity to draw together an esteemed group of professionals involved in sarcoma, to instruct on all its aspects and to foster awareness of the complexities of the problems involved.
Dr Florian Puls

Dr Puls qualified from Hamburg University (MD), Germany in 2002 and started to work in Gastroenterology at Hanover University Hospital, Germany. In 2004 he moved to the UK where he did a specialist training in Histopathology in the East Midlands and London (FRCPath 2009). In 2010 Dr Puls was appointed consultant histopathologist at the Royal Orthopaedic Hospital, Birmingham. 2015 he moved to Sahlgrenska University Hospital, Gothenburg, Sweden.

Diagnostic interests: Bone and soft tissue pathology. Genetics of soft tissue and bone tumours.

Research interests: Pathogenesis of soft tissue and bone tumours.

Mr Maniram Ragbir

Mr Maniram Ragbir is the Consultant Plastic Surgeon at the Newcastle upon Tyne Hospitals NHS Foundation Trust. He graduated from the University of West Indies in 1989 and completed his higher surgical training in Plastic Surgery in Trinidad, Exeter, Swansea and Newcastle. He has worked as a consultant plastic surgeon in both Trinidad and the UK.

A passionate trainer and educator he is currently the Training Programme Director for Plastic Surgery in the North East of England and the Programme Director for the Newcastle Surgical Rotation for SHO’s. He is the current lead for national selection in Plastic Surgery, a member of the SAC for Plastic Surgery and represents Plastic Surgery in the head and neck surgery training interface group. He is also an FRCS (Plast) examiner.

Clinically Mr Ragbir has a very busy practice with special interest in microsurgery, head and neck oncology and reconstruction, all areas of sarcoma surgery and reconstruction, abdominal wall reconstruction, chest wall reconstruction and surgery for facial palsy. He has presented and published widely in all of these areas.

Mr Alex Ramsden

Alex Ramsden is the Consultant Plastic and Reconstructive Surgeon who works at the Oxford Lymphoedema Practice and the NHS. He has specialised in lymphoedema reconstruction since 2012 and is a director of the Oxford Lymphoedema Practice. He has spent time operating and training in Tokyo at the University of Tokyo.

He is the full time Consultant Plastic Surgeon to the Nuffield Orthopaedic Centre which is part of the Oxford University Hospitals NHS Trust. His 2nd areas of interest are microsurgical reconstruction for osteomyelitis and trauma. He has completed further microsurgical training in Melbourne and has worked for the British Antarctic Survey.
Mr Kelvin Ramsey is the Consultant Plastic & Reconstructive Surgeon at the Royal Marsden Hospital in London. He is an experienced microsurgeon specialising in breast, abdominal and perineal reconstruction and super-microsurgery for lymphoedema. He is one of the few surgeons in the UK to offer lymphatico-venous bypass surgery for lymphoedema patients and he has written and lectured widely on this subject.
Abstracts

Day 1 Session 1 – 08:30 – 09:00

Mr F Peart and Mr M Parry

Introduction to sarcoma – The basics

This lecture is intended to provide a background to the subject matter of today, and the various challenges that a sarcoma service presents. This general introduction will be from both a Plastic Surgery and an orthopaedic surgery perspective.
Day 1 Session 1 – 09:00 – 09:30

Dr S James

**Radiology and Imaging, image guided investigations**

Imaging is key in the diagnosis of bone and soft tissue sarcomas. At initial presentation, radiographs remain vital in reaching a differential diagnosis for bone tumours and in some instances are all that is required to reach a diagnosis. MRI (magnetic resonance imaging) allows further information to be gleaned regarding a potential diagnosis and enables local staging of tumour extent. MRI also allows appropriate planning for diagnostic biopsy if this is required.

CT (Computed tomography) may aid in lesion characterisation and allows distant staging particularly for the presence of metastatic disease to the lungs. Bone scintigraphy or whole body MRI facilitates the identification of bone metastasis and PET is increasingly being utilised for staging purposes in some bone and soft tissue tumours. Image guided biopsy is the modality of choice for obtaining tissue for histological examination and this may be performed under ultrasound or CT guidance depending on whether the lesion is primarily a soft tissue or bony lesion.

In this talk, examples will be presented to illustrate the role of radiology, imaging and image guided intervention in sarcoma diagnosis.
Sarcoma subtypes and pathology and The genetics of sarcoma

Prof Lars-Gunnar Kindblom1 & Dr Florian Puls2

1 Department of Musculoskeletal Pathology, Royal Orthopaedic Hospital NHS Foundation Trust and Division of Cancer Studies, Medical School, University of Birmingham, Birmingham, UK, Department of Clinical Genetics and Pathology, Sahlgrenska University Hospital, Gothenburg, Sweden.
2 Department of Clinical Genetics and Pathology, Sahlgrenska University Hospital, Gothenburg, Sweden.

Histopathology and genetics of sarcoma

This talk gives an overview about the principles of histological and molecular classification of benign, borderline and malignant mesenchymal neoplasms. Within the last two decades, distinct and recurrent genetic alterations have been identified in the majority of mesenchymal tumours shedding light on their pathogeneses as well as providing diagnostic markers and potential targets for therapeutic use. The majority of genetic alterations include (1) fusion genes: chromosomal translocations result in the juxtaposition of two different genes and expression of fusion proteins with transformative capacity; (2) activating mutations in key components of signaling or metabolic pathways; and (3) genetic alterations resulting in loss of tumour suppressor gene expression. In soft tissue and bone tumours, modern pathological assessment integrates both morphological and genetic findings in correlation with clinical and radiological features in order to arrive at a diagnosis. Morphological, genetic as well as clinical features of several entities with particular relevance to the practice in Plastic Surgery (superficial lesions as well as tumours with propensity for the hands and feet) are illustrated and discussed.
Day 1 Session 2 – 11:00 – 11:40

Professor L Jeyes

Sarcoma surgery and margins
Day 1 Session 2 – 11:40 – 12:10

Dr C Candish

Adjuvant treatment of sarcoma
Sarcoma services in the UK and current practice guidelines

Sarcomas are a rare and diverse group of cancers with a common embryological origin. During their working lifetime, the average GP can expect to see only one or two patients with a sarcoma. Because of this, delays in diagnosis with a concurrent effect on outcome are not uncommon. Historically, these rare tumours were often managed by surgeons who may have had limited or infrequent experience in the more complex nature of these tumours. To combat the diverse outcomes seen across the country and the poor prognosis expected with a diagnosis of a sarcoma, services were centralised at a supraregional level to concentrate expertise and resources in a small number of centres. With greater concentration has come a greater understanding of the natural history of these tumours, particularly sarcomas arising from bone. With time, improvements in survival and patient experience have followed and there now exists a robust system for referral and investigation of suspected sarcomas. With peer review and ongoing audit of these services, it is expected that these measurable outcomes will improve.

The aim of this talk is to summarise the development of sarcoma services in the UK with an overview of the history culminating in the current situation. We will discuss the pathways for referral of patients with a suspected sarcoma of bone or soft tissue with a particular emphasis on the importance of early diagnosis.
Day 1 Session 3 – 13:50 – 14:20

Professor L Jeyes

**Bone oncology and reconstruction**
Day 1 Session 3 – 14:20 – 15:00

Professor M Innocenti

**Reconstruction in bone and soft tissue sarcoma**

The introduction of the concept of anatomical compartment and the definition of safe surgical margins, have significantly modified the surgical approach to bone and soft tissue sarcoma of extremities. Amputations dramatically decreased and a more conservative surgery was applied in the clinical practice. The potential of reconstructive microsurgery has been largely developed in oncologic surgery taking advantage of biological reconstructions such as those achievable by free tissue transfer. This is particularly true in dealing with children where most of the conventional options are difficult to apply. Current trends in microvascular bone reconstruction include some classical flap, such as the fibula in all its anatomical variations, but also some more innovative flaps such as the medial condyle flap, the epiphyseal transplant and a combined procedure where the vascularised fibula is associated with a frozen allograft shell. Nowadays a wide range of autologous vascularised bone transfer are therefore available increasing very much the possibilities offered by conventional orthopaedic surgery which are basically prosthesis and allograft.

Also soft tissue reconstruction after STS excision benefits very much from reconstructive microsurgery. Fasciocutaneous flaps, perforator flaps, propeller flaps, muscle flaps and functioning muscle flaps have been widely used to cover defects that could not be managed with conventional techniques, thus increasing very much the limb salvage in complex cases.

The personal experience refers to more than 400 patients, ranging in age between 7 months and 92 years, where reconstruction after bone and soft tissue sarcoma was achieved by means of microsurgical procedures

**Suggested readings**


Scoccianti G., Campanacci D., Innocenti M., Beltrami G., Capanna R “Total calcanectomy and reconstruction with free vascularized iliac crest flap” Foot Ankle Int. 2009 Jul;30(7):716-20


Rödl RW. Ozaki T., Hoffmann C., Böttner F., Lindner N. and Winkelmann W.:


• Lee KS, Han SB, Baek JR. Free vascularized osteocutaneous fibular graft to the tibia in 51 consecutive cases. J Reconstr Microsurg 2004;20:277–284.


Reconstruction of composite pelvic tissue defects after sarcoma surgery

Reconstruction of complex pelvic sarcoma defects

Hannu Kuokkanen, Prof. Head of the Division of Plastic Surgery, Helsinki University Hospital

Bone and soft tissue sarcomas around pelvis are uncommon. Achieving adequate margins in pelvic sarcoma surgery is more critical and more difficult to achieve in comparison to limb salvage surgery. Both orthopaedic and plastic surgical methods have to be combined in reconstructing major defects of pelvis.

From 2007 to 2012 21 pelvic sarcoma patients underwent pelvic resections performed by the Sarkoma Unit of Tampere University Hospital. There were 7 periacetabular resections, 6 sacrectomies, 4 partial sacrectomies with iliac wing resections and 2 anterior pelvic ring resections and 2 external hemipelvectomies.

The margins were wide in 10 and marginal in 9 patients. After orthopaedic implant reconstruction the defects were reconstructed by microvascular flaps in 7 (6 LD, 1 Filet), gluteus maximus in 5, pedicular vastus lateralis in 3, vertical rectus abdominis in 3 and sartorius in 1 patient. A fibula graft was used twice. The mean operation time was 580 min and mean blood loss 3900 ml (800 – 14000 ml)

All microvascular flaps were successful. Three pedicular musculocutaneous flap were lost.

Half of the patients underwent an unplanned reoperation within 30 days after the primary operation because of local complications.

In our hands microvascular flaps were more reliable than pedicular musculocutaneous flaps.

A planned one stage resection and reconstruction is usually performed. However, in cases with long lasting operations and substantial blood loss we have changed our policy. These operations are planned in two stages; first tumour resection and orthopaedic fixation followed with soft tissue and bone reconstruction one week later. If needed the two stages are bridged with negative pressure wound treatment.

With two stages the patients seem to tolerate massive operations better. Furthermore, the flap success rate was good without increasing the number of infections.

At the moment our conclusions in pelvic sarcoma reconstructions are:
• All operations are planned in a multidisciplinary team (Orthopaedic Oncologist, Spine Surgeon, Plastic Surgeons, Oncologist, Radiologist, Pathologist)
• In tissue reconstruction we easily go for robust free flaps instead of pedicled flaps to get proper filling of the tissue defect.
• Saphenous vein loop helps the placement of the flap in optimal position.
• A vascular bone graft is preferred if possible.
• A two-stage procedure with one-week delay between operations in massive operations is planned the recovery of patients and survival of flaps.
• The dead space is drained properly and skin closed primarily if possible; if not the defect is covered with a NPTD device between the two procedures.
Day 1 Session 4 – 15:50 – 16:20

Mr M Ragbir

**Free flap reconstruction**
Complex reconstruction

Sarcoma surgery offers some unique challenges in excisional and reconstructive surgery. These challenges are opportunities to test one’s diagnostic and technical expertise, and most importantly one’s creativity, and bravery.

It is all too easy to take the easy way out and recommend amputation or palliation. Way easier.

But ask yourself. Is that what you would wish for yourself? Or would you prefer a skilled experienced surgeon attempt to adequately excise and reconstruct the defect leaving you with a useful limb/ life?

I know what I would wish, but for that to work for me, when I am diagnosed with sarcoma, I need to train and inspire the next generation of surgeons. So that when I need treatment there is someone ready, willing, trained and bothered to look after me.

For limb salvage to work, complete radical excision of the tumour with an adequate margin must be achieved. One cannot rely on someone else such as an oncologist or radiotherapist completing the job for you. It is one surgical scenario when only cold hard steel will do. And it must be wielded boldly and definitely, to achieve its aim of complete clearance of the tumour. Only then, can consideration be turned to reconstruction of function and form.

As in post–trauma reconstruction, firstly consider
1. what is absent,
2. what is required for function,
3. what can be salvaged from remaining parts,
4. what can be sourced from orthopaedics,
5. what possible donor sites can be used
6. what special considerations are there – such as radiotherapy fields, chemotherapy timing constraints
7. operative planning
8. and finally, plan B and C.

The reference to complex reconstruction relates to the old adage that if three or more of the following structures [bone and joint, nerve, vessel, soft tissue/ skin cover] require reconstruction then amputation should be preferred, or operations avoided. Complex reconstructions challenge that adage.

It is possible to successfully reconstruct defects of bone and joints, nerves, vessels and soft tissue and skin resulting in disease-free, pain-free, functioning survival and survivability.
There are two main situations that warrant such reconstruction – either where the loss of function related to amputation is great, and prosthetic replacement poor; or amputation is not an option.

An example of the former is within the upper limb, and of the latter spinal or sacral disease. Several cases will be presented to illustrate the principles.
Implant salvage

Internal implant placement within human bodies is now commonplace. With use in trauma, joint replacement and following tumour ablation representing the majority in orthopaedic practice. Implants often fail either due to mechanical stresses or infection. When they do fail regardless of cause the outcomes for the limb are often devastating. Avoidance of implant loss is better than treating a threatened implant. Implant infection is a complex process, which is only recently being appreciated. It is accepted that the number of colony forming units is up to 10,000 times less when there is an implant is used. The formation of a biofilm takes time and a number of steps in the aetiology are required for a biofilm to become established. Simple implant retention can occur if certain requisites are fulfilled. These will be discussed. Prosthetic joint infection (PJI) will be defined and the surgical strategy to salvage the underlying implant as well as to avoid amputation will be discussed.

Bibliography:
Parvizi J. A New Definition for Periprosthetic Joint Infection. AAOS Now. August 2014 Volume 8 Number 8 pages 1-7.
GiRFT - Getting it Right First Time www.gettingitrightfirsttime.com
Introduction to lymphoedema

Lymphoedema is the result of disruption of the lymphatic transport system and leads to the accumulation of protein rich fluid in tissue. This causes swelling, fibrotic changes and eventually fat deposition. Lymphoedema occurs with an incidence of approximately 2% of the population in the UK. The majority of cases are a result of cancer surgery. This talk provides a general introduction to the normal lymphatic system as well as the lymphoedema state.

The learning outcomes from this talk are:

• To understand the normal lymphatic system
• To define lymphoedema and distinguish between primary and secondary lymphoedema
• To discuss the incidence in the general population and following certain procedures
• To understand the risk factors for lymphoedema
• To discuss the pertinent signs of lymphoedema and stage the disease
• To understand prognosis with an overview of treatment options

References and recommended reading


Objective: Secondary chronic limb lymphedema (SCLL) is a disabling side effect of groin and axillary lymph node (LN) surgery. Patients who do not respond to conservative therapy can benefit from microsurgical treatment. The aim of this session is to describe our surgical protocol (Combined Technique-BLAST) for SCLL treatment, its indications and results.

Despite various surgical techniques for SCLL treatment have been described, there is no consensus about the ideal one between the experts. Our experience shows that BLAST (Barcelona Lymphedema Algorithm for Surgical Treatment) can be considered as a safe and effective procedure to treat SCLL in selected cases.
Imaging in lymphoedema

The search for the ideal method of imaging the lymphatic system has been a source of extensive research with some invaluable recent advances. 19th century anatomists used materials such as mercury, wax and gelatine to perform lymphography on cadavers. In vivo studies have either used interstitial injections of contrast media which are then taken up by the lymphatic circulation (lymphoscintigraphy), or vital dye such as patent blue which is used to identify lymphatics into which contrast agents are directly injected (lymphangiography).

The introduction of fluorescent tracers, water soluble contrast agents and isotopes, in parallel with the advent of physiological surgical procedures, has re-invigorated the role of imaging in lymphoedema. Surgery planned to divert lymphatic fluid may only be successful if the surgeon can identify the position of the tiny lymphatic channels (on average 0.3 – 0.8mm diameter) and establish whether they are patent and functional. Near-infrared spectroscopy, lymphoscintigraphy and lympho-MRI have had particular success in the assessment of candidates for physiological procedures.

Lymphoscintigraphy is perhaps the most well recognised modality used for the evaluation of lymphatic function in lymphoedema. Although it provides quantitative assessment of lymphatic function and flow abnormalities, it is lengthy and expensive. It may however be crucial for excluding primary lymphoedema in the pre-operative setting.

Near-infrared spectroscopy allows real-time visualisation of lymphatic vessels with minimal invasiveness. It displays the flow of lymphatic fluid without the need for radioactive isotopes. It uses the principal of fluorescence lymphography, which detects near-infrared light emitted by a fluorophore (commonly indocyanine green) that has been injected into the affected limb. This not only demonstrates the position and path of lymphatic vessels within a limb, but also provides a dynamic functional assessment which is comparable to lymphoscintigraphy.

Lympho-MRI, a technique in which MR lymphangiograms are obtained by injecting standard intravenous dyes such as gadopentate in the subdermal plane, followed by a series of image acquisition, has been used to image lymphatics with some success. Imaging is generally performed with a 3 or 4 tesla scanner using a 3D spoiled gradient-echo sequence. Although this provides reasonable imaging of the lymphatics, it is both more invasive and expensive than near-infrared fluorescence. There have also been challenges in the ability of these scans to differentiate between the venous and lymphatic circulation.

Lymphatic function can also be assessed in terms of tissue clearance rate, by measurements of solute concentration ratios between plasma and lymph, as well as by direct measurements of lymphatic capillary pressures.
These and other imaging systems will be discussed along with their role in the guidance of lymphatic microsurgery.
Lymphovenous anastomosis

Lymphatic fluid normally drains from the tissues to the venous blood stream. Lymphoedema occurs when there is a failure of this transport of fluid with subsequent accumulation of interstitial fluid. Lymphovenous anastomosis is an approach to rerouting the lymphatic fluid back into the venous blood in the peripheries, bypassing any segment of the lymphatic system that is non-functioning. Lymphatic pressure is normally higher than venous pressures (it must be for the lymph to drain into the venous blood) and so if lymphatic vessels are anastomosed to veins then lymph will drain in to the venous circulation.

However, lymphatic channels are generally less than 1mm in size and the technique of anastomosis can be challenging. There are two main techniques. Koshima described multiple end to end supermicrosurgical anastomosis in affected limbs with improvements in limb volumes. Campisi described sleeve style anastomosis in the groin or axilla (with multiple lymphatic channels being sleeved into a large vein) and demonstrated the effective prevention of secondary lymphoedema in a randomized controlled trial.

Lymphovenous anastomosis are a low risk solution to lymphoedema in a wide range of patients but require a competent peripheral lymphatic system.
Lymph node transfer

This presentation will discuss the anatomy and physiology of autologous, vascularised lymph node transfers for both upper and lower limb lymphoedema. It will include a review of the current literature and a pilot study of 30 consecutive lymph node transfers both in combination with DIEP breast reconstruction and as an isolated free flap. Potential risks and complications as well as volumetric and quality of life outcome measures will be examined.

The learning outcomes from this talk are:

- To understand the physiology of ALNT
- To consider appropriate patient selection
- Consider various donor sites and the relevant anatomy
- Discuss suitable imaging for patient assessment
- Be aware of current evidence based medicine and key papers
- Understand the risks and complications of ALNT
- Understand the likely benefits of surgery

References and recommended reading


Day 2 Session 2 – 11:30 – 12:00

Mr A Munnoch

Liposuction for lymphoedema
Day 2 Session 2 – 12:00 – 12:30

Ms J Cunneen

Nursing support for lymphoedema

The surgical treatment of lymphoedema is becoming increasingly popular and proving to be an effective form of treatment. The majority of patients that have been treated surgically for their lymphoedema have had an acquired lymphoedema associated with their cancer treatment.

While lymphoedema is considered to be incurable successful conservative management of the condition can occur and is more likely following early diagnosis and intervention. The standard conservative management for lymphoedema consists of skin care, exercise, compression, psychological support, education and plus or minus Manual/Simple Lymphatic drainage. The surgical treatment however can be used as an adjuvant or means of prevention.

The presentation will look at how conservative management is performed and how this can be incorporated into a programme of pre and post-op care, for the patient undergoing surgical intervention in order to optimise the success and results.
Day 2 Session 3 – 13:40 – 14:05

Mrs S Pape

**Introduction and the science and current classification of vascular anomalies**

**Learning Objectives**
At the end of this session you will be able to:

- Explain the known pathological features of vascular anomalies
- Describe the typical clinical presentation of each type of lesion
- Identify vascular malformations according to the most up to date classification system

**Abstract**
Vascular anomalies of the skin and subcutaneous tissues are common at all ages but are one of the commonest conditions of childhood. Many are innocuous and self-limiting but some require specialist and urgent treatment and this requires expertise in their diagnosis to ensure timely and appropriate treatment.

Broadly speaking, they can be subdivided into congenital and acquired conditions. Those lesions that are not present at birth but appear within the first few weeks of life are classified alongside congenital lesions. They can be grouped as haemangiomas (benign tumours of blood vessels) and vascular malformations.

In this session we will examine the pathological features of vascular anomalies and their typical clinical presentation and use these features to classify the conditions in a manner that guides treatment.

**References**


**Further Reading**

The management of congenital and infantile haemangiomas

Learning objectives

At the end of this study day the trainees should be able to:

1. Understand the pathogenesis of infantile hemangiomas
2. Understand the current treatment options, indications and risks
3. Decide on active intervention options vs conservative management

Abstract

The current management of hemangiomas have changed to a much more active and intervention based approach due to better modern treatment options available.

The "watch and leave as they will get better again" historical approach is not the default position any more.

We will discuss current treatment options, their indications, benefits and risks. Hemangiomas are a curious pathology with an evolving and changing growth nature and we will discuss how and when to treat.

There will be interactive case study slide discussions and a list of relevant papers is included.

References and reading list:

The management of capillary vascular malformations and the role of laser in the management of vascular anomalies

There are a number of treatment options for the cutaneous changes from birthmarks. I will present the reasons we would use a vascular laser or a carbon dioxide laser for improving the appearance of the skin. Sometimes a combination of different lasers can provide the most improvement.
Mr T Muir

**The interventional management of low flow vascular anomalies**

**Learning objectives**

At the end of this study day the trainees should be able to:

1. Understand clinical assessment of low flow vascular anomalies
2. Understand the current non-surgical treatment of low flow vascular anomalies
3. Practice decision making in treatment options

**Abstract**

The treatment of low flow vascular malformations has moved away from traditional surgical approaches in many scenarios due to risks of recurrence and potential surgical collateral damage which can lead to disappointing results.

Non-surgical interventional sclerotherapy treatment options; the rationale, available drugs, success, risks and benefits will be discussed.

There will be interactive case study slide discussions and a list of relevant papers is included.

**References and reading list:**

Reference book (if interested):

Day 2 Session 4 – 16:00 – 16:30

Dr I McCafferty

**The radiological management of high flow lesions with interventions**

The talk will explain the clinical presentation and assessment of patients with high flow AVM’s including the recognised grading systems. The imaging modalities that can be used will be presented but Dr McCafferty will give his reasoned view to the correct imaging required to assess the nature and treatment options of these lesions. Treatment options and techniques will be covered with examples along with prognostic outcome expectations in this very complex group of malformations.
Day 2 Session 4 – 16:30 – 17:00

Mr H Nishikawa

The role of surgery in the management of vascular anomalies
Trade Exhibition

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