Winter Scientific Meeting 2015- Poster Abstracts

(abstracts are listed in alphabetical order by presenter Surname)

BAPRAS European Scholarship: an aesthetic and reconstructive microsurgery fellowship in Belgium

Mr R Agha
Guy's and St. Thomas' NHS Foundation Trust

I was awarded the BAPRAS European Scholarship for 2015. As suggested in the award letter, I would like to present my experience at the winter meeting.

This was a high-volume breast reconstruction and aesthetic surgery boot camp. We operated four full days a week and I kept a technical notes logbook in which I documented techniques, observations and reflections. My validated logbook shows I was involved in 163 operations. Nearly 50% of these were related to the breast either reconstruction or aesthetic. 30% were aesthetic surgery (other than breast). The remaining 20% related to flap reconstruction of other areas, skin oncology, wound and scar management. I also documented my visit on on ISCP, where I sat down with Prof. Hamdi (my Assigned Educational Supervisor - AES) and set objectives, performed WBAs (two in total including one on perforator selection for the DIEP flap) and completed a final review and AES report at the end of the placement.

I gained an intensive experience in breast surgery – both reconstructive and aesthetic. Reconstructive cases included 12 DIEPs, implant-based reconstruction as well as two cases of breast sharing using internal mammary artery perforator based flaps. I learnt much about perforator selection for the DIEP flap and technical 'pearls' to dissecting them. Other learnings included; how to enhance the shape of a DIEP flap making it look more like a native breast, reducing the skin-patch appearance, utilising the mastectomy flaps to enhance projection and dealing with vessel calibre mismatch. Indeed, I have changed my microvascular anatomosis suturing technique on the basis of what I have seen on this trip. I also saw my first lymphatico-venous anastomosis whilst on the trip.

Free mid-abdominal TRAM flap reconstruction for a recalcitrant thoracic empyema defect and bronchopleural fistula: a case report

Dr F Aloraifi, Ms M Kitcat, Mr A Coonar, Professor C M Malata
Addenbrookes Hospital, Plastic & Reconstructive Surgery

TRAM flaps are widely used in chest wall reconstruction because of their reliability and large soft tissue bulk. Although rare, postoperative bronchopleural fistulae and empyemas carry a high morbidity and mortality risk. A thin 52-year old man presented with a post-pneumonectomy empyema associated with a large skin defect and a resistant bronchopleural fistula after lung cancer surgery. The upper lateral

thoracic cavity was jointly debrided prior to repair of the fistula and empyema cavity with a free mid-abdominal TRAM flap.

The proximal end of the rectus muscle was parachuted down to the mediastinum and used to seal the fistula. The remaining flap obliterated the dead space with the de-epithelialised zone 3 inset into the deepest part of the cavity. Microvascular anastomoses were performed end-to-end to the virgin thoracodorsal vessels. There were no intra or early post-operative problems and the patient was discharged on day 10 after a 48-hour ICU stay. At 3 months there was no clinical evidence of fistula recurrence and he has excellent cutaneous coverage.

A mid-abdominal free TRAM flap was employed to facilitate donor site closure. The upper lateral location of the fistula necessitated the use of a free TRAM rather than its pedicled variety to maximise its reach. This configuration also enabled the harvest of an adequate amount of well vascularised tissue to ensure primary healing of both the fistula and the cutaneous defect while maintaining the bronchial seal.

Alveolar bone graft in cleft lip and palate: donor site review of 100 consecutive cases

Mr K Amin, Mr W Sim Khor, Miss A Rosich-Medina, Miss V Beale
University Hospital South Manchester

Background
Secondary alveolar bone grafting during mixed dentition is now accepted practice worldwide. Success rates are closely monitored in the United Kingdom after the Department of Health charged the Clinical Standards Advisory Group to investigate outcomes in the UK. Central to this is survival of the graft with low donor site complications with the 'Gold Standard' currently the iliac crest.

Aims & Objectives
To evaluate current donor site outcomes under the care of a single surgeon in the North West of England, with primary focus upon inpatient analgesic requirements, length of inpatient stay (days) and complication rates (major and minor).

Methods
A retrospective review was conducted for 100 consecutive cases by a single surgeon (June 2011 to December 2014).

Results/Conclusion
Over 95% of patients were discharged by 24 hours, 96% requiring simple oral analgesia only with a complication rate in keeping with current literature. Alveolar bone graft procedures utilising iliac crest harvesting is a safe technique. Patients can be safely discharged after the first postoperative day with minimal restrictions on mobility both minimising inpatient stay and side effects from complicated

analgesic protocols. We aim to discuss our current approach to the donor site during the perioperative period.

Tissue expansion in paediatric plastic surgery

Dr R Amine, Dr S Taquafi, Professor M Diouri, Professor N Bahechar, Professor A Chlihi
Ibn Rochd Casablanca

Indications-Subject
Tissue expansion belongs to the therapeutic arsenal of plastic surgery. It provides a comparable skin tissue in colour, texture, hair to the receiving site. However, this technique is responsible for a significant rate of complications, capable of compromising the reconstruction. The purpose of our study is to analyse the different complications and to highlight the correlation factors.

Equipment and methods
We performed a retrospective study of five years, including 101 skin expansions in children under 15 years. We collected extensive information about patients, indications, equipment, surgical characteristics and complications. From these data, a correlation test was established between complications and potential risk factors.

Results
63 patients were included for 101 expansions: 52 reconstructions for congenital nevi, 31 burn sequelae, 15 scarring and 3 microties. The average age was7 years [4 months-15 years]. The age, location, gender, size and volume of the expander, surgical indication, the surgeon's experience, do not seem to be predictors of complications. Major complications occurred in 22.77% of cases: 42.87% of complications during iterative expansions and 14.29% during primary expansions.

Conclusion
The skin expansion exposes to a significant rate of complications and failures. Our results show that the main failure risk factor is the iterative expansion. These results force us to reconsider our management strategy, minimising the number of expansions in the same patient.

Lipofilling in aesthetic and reconstructive surgery: experience of national centre of burns and plastic surgery: Morocco

Dr R Amine, Dr S Taquafi, Professor M Diouri, Professor N Bahechar, Dr A Chlihi
Ibn Rochd Casablanca

Introduction
Use of adipous tissue transfer for volume restoration was reported at the end of XIXth century. Ideas have greatly changed and adipocyte transfer has antiacted renewed interest in recent years due in particular to the development of lipostructure®. It's a procedure based on strict methodology and the use of specific material. Initially with the treatment of facial ageing, the lipostructure® extended to the various fields from plastic surgery. The goal of this work is to bring through certain indications, out experience on this technique of filling.

Material and Methods
A retrospective study undertaken to the National Burn's Center and Plastic surgery, CHU Ibn Rochd of Casablanca on 130 patients who profited from a lipostructure® during one period being spread out over six years.

Results
The average age of our patients is of 37 years with a clear female prevalence. The indications are represented by the depressed scars 40 % of cases, the syndrome of Parry-Romberg 30 % of cases, cutaneous ageing 20 % of cases, an increase in the volume of the penis 7 % of cases and a facial lipoatrophy in 3 % of cases. The results are collected after an average retreat 20 months and a subjective satisfaction is noted in 86 % of the cases. Complications with type of pseudokystes, hypercorrection and asymmetry are observed respectively in two cases, one case and one case.

Conclusion
The lipostructure® is a simple and reproducible process making it possible to obtain good results and constitutes for us the best means of volumetric correction. Its application to the various fields of plastic surgery in fact a therapeutic tool essential not to neglect.

The Montgomery ruling: the end of consent on the day of elective surgery?

Miss S Bagirathan, Dr B Choudhry, Mr J Pollock, Mr J Neil-Dwyer
City Hospital Campus, Nottingham University Hospitals NHS Trust

Introduction
The Montgomery ruling in March 2015 has resulted in a change of consent legislation. Consent should be a process rather than a one-off event, and the emphasis being on the autonomy of patients to make informed decisions. Patients should be given sufficient time to do this and the doctor is to ensure they are aware of any material risks of surgery and alternative treatments, i.e. *"a risk to which a reasonable person would attach significance"*. We audited the consent process of elective procedures in a regional plastic surgery department against this new regulation and existing guidelines.

Method
Data was collected retrospectively over one month for all elective plastic surgery procedures. All non-

elective procedures were excluded. Data included: type of surgery, date of consent, responsible consultant and surgeon performing consent.

Results

103 patients were identified (minor procedures n= 86, major procedures n= 17). 52% were consented by a registrar or fellow and 33% by a consultant. 90% were consented on the day of surgery. Of those undergoing major surgery, 47.1% were consented on the day of surgery. 64% were consented by the team who initially reviewed the patient in clinic.

Conclusion

Our current practice is potentially vulnerable to legal action and we need a more robust consent process to be compliant with the Montgomery ruling. This situation is likely to apply to many plastic surgery units in the UK. Explaining not only the options we as surgeons consider available but all options a reasonable patient may wish to know about, requires considerable time that must be factored in to job plans and clinic scheduling. We recommend all departments audit their practice to provide evidence for the necessary change in practice.

An improved surgical headlight

Dr W Beswick, Mr R Kerstein
Salisbury District Hospital

Head mounted LED torches have been widely repurposed for surgical use, offering significant improvements over alternatives such as the cumbersome fine optic headlights or the low power portable lights. Such repurposed systems however suffer limitations in comfort, ease of use, and battery life. We present a system with modifications to improve battery ultilisation and aid use with a small surgical team by means of a remote switch operable through a surgical gown without compromising the sterility of the operator, and an improved ventilated semi-rigid mounting system. We hope that the combination of the two cheap and simple modifications requiring minimal skill or facilities presents an opportunity to improve light delivery in a vast array of situations including minor operations in non-bespoke theatres and operating in third world hospitals.
We present the cost to make and the steps necessary.

Reconstruction of the calvarium & scalp with a chimeric free flap: a case report

Mr N Brierley, Mr B Mathew, Mr P Matteucci
Castle Hill Hospital

Introduction & Aims
A 51-year-old lady presented to clinic with a full thickness defect of her calvarium, with exposed dura. The lesion had been present for over five years. Biopsies around the periphery confirmed basal cell carcinoma. CT scan revealed invasion up to and possibly involving, but not through the dura. A plan was formulated across the skin cancer and neurosurgical MDTs to perform radical resection, and autologus free tissue reconstruction. Given the patient's age and the likely need for adjuvant radiotherapy autologus calvarial reconstruction was felt to be preferable to prosthetic material.

Materials & Methods
A two team surgical approach was undertaken, with neurosurgical resection of the calvarial margin & external dural layer over the saggital sinus. Reconstruction was achieved with a chimeric free flap of split ribs, serratus anterior and latissumus dorsi, anastomosed to the superficial temporal vessels. Routine free flap monitoring was undertaken on the ward.

Key results
The patient was discharged uneventfully. Partial flap necrosis was debrided and covered with a scalp transposition flap on day 14. Repeat CT scans revealed satisfactory healing of the split ribs & surrounding ossification. Adjuvant radiotherapy was completed with no flap or wound problems.

Conclusion
We believe this procedure provided a versatile, robust, and lifelong solution to fix a complex problem, with minimal complications.

A disappearing act: which side now? Complete resolution of a nodular peri-orbital BCC following incision biopsy

Miss L Carys, Mr J Morton
Whiston Hospital

A 75-year-old gentleman presented with a five year history of an exophytic lesion approximately 10mm in diameter at the right inner canthus. To avoid disturbing the deep margin in anticipation of Mohs excision, histology was obtained using an incisional curette biopsy (4 x 3 x 2 mm) which confirmed the lesion as a nodular basal cell carcinoma (BCC). The patient was subsequently listed for Mohs excision and reconstruction. Within four weeks of the biopsy the lesion began to spontaneously regress and had completely resolved within six months, so much so to the point that the patient was unable to correctly recall the side of the lesion! Quite contrary to the typical evolving course of this disease where lesions

steadily enlarge in a destructive manner, complete resolution was demonstrated. There are very few case reports demonstrating this fascinating and noteworthy phenomenon, and only one on the periocular region. The basis for regression may be immunological, mediated via the CD4+ pathway involving cytokine release.

Septic arthritis of the temporomandibular joint as a complication of acute otitis media in a child: a rare case and the importance of real-time PCR for diagnosis

Miss P Chadha, Mr F Bast, Mrs S Collier, Mr J Collier
St Thomas' NHS Trust

Introduction
We document the case of a 7-year-old boy who presented with pain in his left ear and trismus after a diagnosis of acute otitis media one week previously. His blood inflammatory markers were raised and magnetic resonance imaging (MRI) showed significant left temporomandibular joint (TMJ) effusion and partial attenuation of the left mastoid.

Methods
We retrospectively analysed the results of a single case using medical case notes, blood results, intraoperative examination findings and imaging results. The patient underwent two washouts of the TMJ under anaesthesia and samples were then analysed by real time polymerase chain reaction (PCR).

Results
Results of the investigations undertaken led to a clinical diagnosis of septic arthritis of the TMJ and the patient was commenced on broad-spectrum antibiotics. Analysis using real time PCR enabled identification of the offending organism, confirmation of the diagnosis and antibiotic treatment to be specifically tailored. The patient made a full recovery after a course of intravenous antibiotics and is left with no impairment of mandibular growth or impairment to the TMJ.

Conclusions
Septic arthritis of the TMJ is a rare complication of acute otitis media, which to our knowledge, has not yet been documented in the literature. The use of real time PCR can enable a specific diagnosis to ensure that antibiotic treatment is targeted to a known organism in a timely fashion, which is of paramount importance.

Mental rehearsal and cognitive visualisation in microsurgery training

Miss P Chadha, Miss N Hachach-Haram, Mrs S Shurey, Ms P Mohanna
St Thomas' NHS Trust

Introduction

A number of factors are known to influence the performance of surgeons within the operating theatre. The effects of mental rehearsal and cognitive visualisation on microsurgical skills have not yet been assessed.

Materials and Methods

36 subjects recruited over a six-month period at the Northwick Park Microsurgery Course were randomised into three groups;

i) control group (C) with no mental rehearsal script, ii) visual anastomosis group (VA), with a detailed rat anastomosis script and iii) visual relaxation (VR) group with a relaxation script, unrelated to the anastomosis. Participants were given the opportunity to run through the relevant scripts as part of the mental rehearsal process from day two to five of the course and were assessed through a recorded arterial rat anastomosis, which was scored using the structured assessment of microsurgery skills (SAMS).

Results

Results were analysed by 2-blinded assessors. No statistically significant difference was found between the groups on Monday and Tuesday (first day post intervention).

A statistically significant difference was noted at the end of 4 days of consecutive intervention; $p<0.001$ (VA vs VR) and $p=0.001$ (VA vs C). Domains within the global rating scoring system also showed statistical significance for the following only; i) dexterity; VA vs VR, $p=0.001$, ii) visuospatial skills: VA vs VR $p=0.001$, VA vs C, $p=0.002$ and iii) operative flow VA vs VR, $p= 0.044$ and VA vs C; $p=0.026$.

Conclusion

The benefits of mental rehearsal in microsurgery may result in fewer complications from errors and thus lead to enhanced patient safety and better operative outcomes. Further work is required to ascertain how mental rehearsal can be incorporated into daily practice.

International Collaboration of Breast Registry Activities (ICOBRA): why the world needs it

Dr P Z H Chan, Dr P Coghlan, Mr R Cooter
The Queen Elizabeth Hospital

Since the late 1990s, scientific reports have suggested an association between breast implants and anaplastic large cell lymphoma (ALCL). However, analysis has been challenging due to the inconsistent methods of reporting worldwide. The 2011 United States FDA analysis described the risk of ALCL in women with breast implants; however, many questions were left unanswered due the lack of cases. The most recent analysis of 173 cases by Brody *et al* highlighted the difficulty in obtaining clinical and laboratory information internationally, resulting in incomplete data. Some literature is potentially compromised by conflict of interests. As mentioned in his report, the infrequency of this condition "precludes the confirmation of cause [or treatment recommendations] with any statistical certainty." Thus, the world needs a robust collaboration like ICOBRA to magnify the data to the point of statistical certainty.

Using existing data, it is possible to demonstrate the number of women who would need to receive breast implants before one case of ALCL could be attributed to this intervention. The time taken to detect one case of ALCL in each country's registry and internationally can be calculated. With full participation from ICOBRA members, it will only take one month to detect one case of ALCL. All these will be depicted as infographics to highlight the need for ICOBRA for the understanding of ALCL.

Vismodegib for management of basal-cell carcinomas: what we know today

Dr P Z H Chan, Mr R Rahdon, Mr P Callan
University Hospital

Introduction

Vismodegib, the first-in-class hedgehog pathway inhibitor, is a novel oral therapy for treating advanced and metastatic basal cell carcinomas (BCC). The hedgehog signalling pathway regulates cell growth and differentiation during embryogenesis and has been implicated in the pathogenesis of cutaneous BCCs. Studies have shown 40 to 60% response rate for advanced BCC and 30% for metastatic BCC with a favourable safety profile. Sekulic *et al* demonstrated complete responses in 21% of the locally advanced BCCs treated with vismodegib. We present an extensive review of literature plus a case of neglected BCC that was successfully treated with vismodegib as a neoadjuvant to surgery at the University Hospital, Geelong.

Case

An elderly gentleman presented with a fungating, advanced nodular BCC of his right posterior chest measuring over 24 x 22 x 4 cm. The lesion had been slowly growing and bleeding over the last decade before he presented with collapse and hypotensive shock. Given his medical condition, we opted for

vismodegib and assessed the response monthly with serial MRI scans. Tumour volume reduced by over 90% in 6 months. Chemoresistance was noted from the 4th to 6th months. The tumour was then excised and skin grafted. Histological clearance was achieved.

Conclusion

Surgical treatment of advanced BCCs can be challenging and result in disfigurement. In certain cases, especially those involving high-risk patients, there is a potential role of vismodegib as a neoadjuvant to surgical management. A thorough review of literature has demonstrated varying clinically efficacies with minimal associated adverse effects. However, clinical response has shown to plateau, suggesting the development of chemoresistance.

Management of proboscis lateralis: The Australian Craniofacial Unit experience

Dr P Z H Chan, Dr C Shaheel, Mr M Moore, Professor D David
Women's and Children's Hospital

Introduction

Arrhinias (nasal dysgenesis) consist of three rare groups of craniofacial malformations: total arrhinias, hemi-arrhinias, and proboscis lateralis. These are associated with facial and ocular anomalies such as nasal bone agenesis, micromaxillism, poorly pneumatised maxilla, telecanthus, nasolacrimal passage obstruction, and coloboma. We present three cases of unilateral and bilateral proboscis lateralis managed at the Australian Craniofacial Unit (ACFU) in Adelaide from 1984 to 2015.

Cases

The three cases included two patients from Malaysia and one from the Solomon Islands. These included one male and two females, aged from one to four years old at the time of treatment. The first patient (Kenzi) presented with bilateral proboscis, while the other two had unilateral proboscis. The patients were reviewed by the multidisciplinary team at ACFU and surgery was planned accordingly. In one patient (Kenzi), the neo-nose was reconstructed in a single stage procedure. The other two patients (Siti and Sathiya) had multi-staged reconstructions to recreate cosmetically appealing and functional noses.

Conclusion

Arrhinia is a rare craniofacial condition, which poses a formidable challenge for the reconstructive surgeon. Excellent outcomes can be achieved with either a single or multiple stage procedure.

Case reports of the free second dorsal metacarpal artery flap: when you cannot go local, you can go free

Dr M Chowdhry, Mr I Delikonstantinou, Mr F Iwaugwu
St Andrew's Centre for Plastic Surgery and Burns, Broomfield

Introduction and Aims

Significant finger defects can cause notable disability and morbidity. Local reconstruction options may be inappropriate, non-viable or simply unavailable. In these circumstances, use of a free flap may be the most appropriate option for reconstruction.

We aim to highlight our positive experience using free second dorsal metacarpal artery (SDMA) flaps to cover soft tissue defects for two of our patients.

Methods

Case 1
A 73-year-old lady had a 3-year, non-healing necrotic ulcer on the ulnar aspect of her right middle finger after radiotherapy. She was reconstructed with a free SDMA flap and primary donor closure.

Case 2
A 37-year-old lady presented with a right thumb dorsal defect following multiple debridements to treat infection of her thumb, index finger and first web space. She had soft tissue and extensor pollicis longus loss and was treated with a free SDMA flap and free vascularised tendon graft and primary donor closure.

Results were obtained by retrospective review of the clinical notes and by review of the patients in outpatient clinics.

Results

Both patients had uneventful post-operative courses with uncomplicated flap survival. Excellent like-for-like skin coverage was achieved and further de-bulking was not required. At six months, the patients had a satisfactory range of motion.

Conclusions

The second metacarpal artery is an anatomically consistent and reliable method for SDMA free flap reconstruction of the digits and is a useful addition to the armoury of the reconstructive hand surgeon when local flaps are inappropriate.

Extended scope practitioner telephone follow-up of elective hand surgery cases: patient safety and satisfaction

Ms R Clancy, Miss R Rollett, Mrs F Jones, Mr D Thornton
Leeds General Infirmary

Introduction and Aims

Postoperative patients are subject to delays in routine follow-up with prolonged waiting times due to overbooking provoking patient dissatisfaction. There is increasing pressure on the health service to provide a more efficient service whilst maintaining patient safety. We trialled a system to assess whether patients undergoing elective carpal tunnel decompression, trigger finger release, and ganglion excision could be safely followed up via Extended Scope Practitioner (ESP) telephone consultation alone.

Materials and Methods

A retrospective review of a single consultant surgeon's NHS outcomes in teaching and private hospitals over a six-month period was performed. Patients were consulted regarding their preferred methods of follow-up. Comparison was made between traditional clinic review and newly instigated telephone follow-up methods.

Key Results

The average patient follow-up following request for a three-month appointment was 30 and 12 weeks for NHS patients seen in teaching and private sector hospitals respectively. Of those, 82% of patients were discharged at first follow-up, with 89% of patients consulted preferring telephone follow-up. Telephone consultation significantly reduced clinic demand and delays in patient review.

Conclusions

We present a comparison of our follow-up outcomes before and after instigation of ESP telephone follow-up confirming safe practice, more timely review and increased patient satisfaction.

Free radial forearm flap: can the donor site be attractive?

Ms R Clancy, Mr J Wiper
Leeds General Infirmary

Introduction

There are many advantages of using a free radial forearm flap for soft tissue reconstruction. Structural and functional advantages; such as reliable anatomy, long pedicle, thin skin, options for transfer as a sensate flap and the flap being technically easy to raise make it a valid choice for reconstruction However, one of the main drawbacks of this flap is the visibly obvious donor site, which can appear unsightly. We present a single surgeon series where the donor site is covered by Acellular Dermal Matrix (ADM) Matriderm combined with a Split Skin Graft (SSG) to yield an aesthetically acceptable donor site

Materials and Methods

A SSG is often used to cover the donor site of a radial forearm flap. Overtime the graft can contract; resulting in a poor cosmetic appearance and some functional restriction. In this study the radial forearm

flap is raised in a suprafascial plane and then Matriderm used in conjunction with an SSG and negative pressure dressing to reconstruct the donor site.

Key Results
There was 100% graft take with no wound breakdown or functional or sensory deficit to the hand. Patients did not experience graft contracture. The cosmetic appearance of the donor site was acceptable to patients.

Discussion
An attractive/acceptable donor site following a free radial forearm flap may increase the use of an already versatile flap. In addition a cosmetically appealing appearance with reduced scar contracture may improve patient satisfaction overall.

Conclusions
An ADM (Matriderm) in combination with a SSG and VAC dressing provides an entirely acceptable cosmetic result for the donor site of free radial forearm flaps.

Extensor Digitorum Brevis (EDB) muscle flap, the forgotten flap: a reconstructive option in the elderly

Ms R Clancy, Ms R Rollett, Miss A Gargan, Mr J Wiper
Leeds General Infirmary

Introduction and Aims
Soft tissue defects of the foot and ankle in elderly populations present a challenge to reconstructive surgeons. Systemic co-morbidities, reduced mobility, poor wound healing, decreased vascularity and poly-pharmacy are considerations when planning reconstruction. The presence of bony prominences, reduced muscle mass, thin skin and terminal vascularisation make wounds of the lower extremity difficult to reconstruct. Extensor Digitorium Brevis (EDB) is a reliable option for use as a regional or pedicled flap when reconstructing these typically low energy open fractures.

Materials and Methods
This department reports cases of patients over 70 years who sustained an open ankle/distal tibial fracture who were managed with an EDB flap. All had orthopaedic internal fixation and soft tissue cover with a pedicled EDB flap in one sitting, under spinal or general anaesthetic.

Key Results
Patients underwent soft tissue coverage within 72 hours of injury as per BOAST 4 guidelines. No complications with either the flap or donor site were encountered and there were no flap breakdowns. Patients were mobile and independent at follow-up.

Conclusions
A prolonged hospital stay following lower extremity injury brings with it increased morbidity and

mortality. The ideal management is a minimally invasive short procedure to enable soft tissue coverage, early mobilisation, rehabilitation and early discharge. EDB flap for lower limb reconstruction is safe, technically easy to raise, with a reliable consistent blood supply. Surgery can be performed under regional anaesthetic as a one-stage procedure. Using the EDB flap ablates the need for VAC and prolonged dressings or longer anaesthetics for microsurgical reconstruction.

Paraneoplastic syndrome as a rare presentation of soft tissue sarcomas of the extremities

Ms R Clancy, Ms R Rollett, Miss A Gargan, Mr I Smith
Leeds General Infirmary

Introduction
Soft tissue sarcomas of the lower extremity most commonly present with a painless enlarging mass. However, we present three unusual cases where patients with soft tissues sarcoma presented initially with Paraneoplastic Syndrome (PNS).

Materials and Methods
A retrospective review between 2013-2014was carried out of patient case notes, biochemistry, haematology, histology, and imaging of patients who presented with PNS and were subsequently diagnosed with soft tissue sarcomas.

Key Results
Three patients (age range 32-69 yrs) who presented with PNS were found to have large high- grade sarcomas of the lower limb. Clinically, these patients initially presented feeling systemically unwell, fatigued, and reported night sweats. On examination patients were tachycardic with pyrexias of up to 40 degrees. Patients were anaemic, with elevated white cell counts and platelets as well as clotting abnormalities. All patients were subsequently found to have a large soft tissue mass in the lower extremity, which on biopsy was diagnosed as high-grade sarcoma. Following resection of the tumour systemic upset resolved almost immediately (pyrexia and general feeling of being unwell) and haematological and biochemical markers returned to normal over a matter of days.

Conclusions
Constitutional symptoms of soft tissue sarcoma are rare and PNS remains a rare presentation of soft tissue sarcoma. In this case series symptoms resolved following tumour excision. Although uncommon, a diagnosis of soft tissue sarcoma, should be considered in patients presenting with PNS. The underlying diagnosis of a soft tissue sarcoma can often be missed or delayed causing an increase in morbidity and mortality.

The Bamboo-Foam-Tape (BFT) digit: an innovative training model for Kirschner wire fixation of phalanges

Dr E Cochrane, Mr J Smith, Mr S Majumder
Pinderfields General Hospital

Introduction
Hand trauma is common accounting for around 20% of attendances in Accident and Emergency departments. Kirschner wiring is a common treatment modality for phalangeal fractures requiring operative management, but can be technically difficult to master. Currently available training models are expensive and do not adequately simulate the handling properties, and challenges posed by, the swollen fractured finger.

Materials and Methods
The principle author (SM) has modified his previously described bamboo model for metacarpal fracture fixation. The BFT digit is constructed from bamboo pieces connected longitudinally by tape (bones and joints) and enveloped in foam and tape (subcutaneous tissue and skin). The BFT digit is then fixed onto a table mounted vice clamp with a universal joint to allow optimal positioning and stabilisation and allow K-wire fixation to be performed safely. The foam and tape envelope accurately simulates the swollen soft tissues surrounding the bone of a fractured digit, whilst the bamboo "phalanges" with its hard, radio-opaque "cortex", and medullary components, completes the 3-dimensional model. The BFT digit allows for realistic simulation training of reduction and K-wire fixation of digital fractures under X-ray control. Simulation training of fixation with plates & screws, or lag screws, is also easily performed on the BFT digit. These advantages of the model are further enhanced by the wide availability and low cost nature of the components of the BFT digit.

Conclusion
The authors commend the BFT digit as an inexpensive model to enable uniquely realistic simulation training of reduction and K-wire fixation of digital fractures under X-ray control.

The clinical and financial benefits of implementing a daily consultant led ward round on the plastic surgery unit

Dr G Coleman, Mrs S Tucker
John Radcliffe Hospital

Introduction
Consultant led ward rounds have been shown in medical specialties to reduce morbidity and length of stay. A daily consultant led ward round was implemented at a large tertiary plastic surgical unit. Following this, an audit was designed to see if similar benefits could be demonstrated in the plastics department.

Methods
A retrospective audit was undertaken following implementation of daily consultant led ward rounds on 1/11/14. Data was collected on all emergency admissions over a two-month period after this implementation and compared to the same period of the previous year. Diagnoses, length of stay and re-admission rates were recorded. Data was collected from ward lists, patient notes and theatre records.

Results
The number of admissions were 131 and 139 in 2013 / 2014 respectively. Human and animal bites accounted for the highest number of admissions (26% and 23% respectively) followed by lacerations and cellulitis. These admissions had a short average length of stay. Over all, the average length of stay was decreased by 1.15 days in 2014. This translated to a saving of £198,000 per anum based on the cost of an overnight stay. In 2013 the longest average stay was accounted for by open fractures, necrotising fasciitis, flexor sheath infections and abscesses. It was in these patients the reduction in length of stay was demonstrated most dramatically. No readmissions or deaths were recorded in either period.

Conclusions
In one tertiary plastic surgical unit, a daily consultant led ward round resulted in a safe reduction in the average length of stay for emergency admissions. This translated into significant cost saving, making a compelling business and clinical case for recruiting additional consultants in the department.

Point of technique: The Rusch® Balloon as a vaginal mould in a revised version of McIndoe vaginoplasty

Dr C Daly, Mr K Khan, Dr J Price
Belfast City Hospital

Introduction and Aims
Pelvic radiotherapy as a treatment for cervical cancer can lead to damage to the vagina resulting in tissue fibrosis and vaginal stenosis. The McIndoe vaginoplasty aims to restore vaginal function and utilises an autologous skin graft wrapped around a vaginal mould which is placed across the reconstructed cavity. We describe our approach with the Rusch® balloon as an inflatable, pneumatic and commercially available vaginal mould.

Methods/ Materials
Under general anaesthesia, the patient is positioned in lithotomy and washed and draped. A bladder catheter is inserted and the proximal vaginal dissection is carefully carried out by an experienced operator to avoid bladder and rectal injury. Meticulous haemostasis is achieved. An autologous split thickness graft is draped over a partially inflated Rusch® balloon (0.9% sodium chloride used to inflate) to facilitate insertion. Following insertion of the improvised vaginal mould with the skin graft mounted over it, further inflation of the balloon maintains graft position until it sits comfortably in place within the

cavity. Extra advantage is seen at removal on day three. The balloon is fully deflated (unlike traditional moulds) and it slips out with the graft staying in place. The patient is educated in vaginal douching and use of vaginal dilators to maintain patency post-operatively.

Results
The Rusch balloon is a commercially available, inflatable soft device which lends itself well as a mould in vaginoplasty. We have found success with this mould in several cases.

Conclusions
We continue to use this mould as the preferred choice in a revised version of McIndoe vaginoplasty.

Sentinel lymph node biopsy and survival in merkel cell carcinoma: a 10 year review

Mr J Dunne, Ms J Steele, Dr A Roney, Dr S Crane, Ms J Odili
St George's Hospital

Introduction and Aims
Merkel cell carcinoma (MCC) is a rare and aggressive neuroendocine tumour of the skin, predominating in the elderly. Sentinel lymph node biopsy (SLNB) may identify occult nodal metastases, but its value in predicting survival is disputed.

The aim of this study was to evaluate the prognostic value of SLNB in MCC.

Methods
A retrospective review of all patients presenting to our unit with MCC from 2005-2015 was performed.

Results
39 patients with MCC were identified. 11 patients (28%) underwent SLNB (mean age 74 years) and 28 patients (72%) did not (mean age 80 years). Of patients having SLNB, 4 had a negative biopsy (stage I/II), while 7 had a positive biopsy (stage III/IV). Amongst patients who did not have SLNB, 14 had stage I/II disease (50%) and 14 had stage III/IV disease (50%).

		Survival	Mean time diagnosis to death (days)
SLNB	Stage I/II	100%	N/A
	Stage III/IV	43%	677
Non-SLNB	Stage I/II	36%	730
	Stage III/IV	36%	420

Table 1. Survival rates and mean time from diagnosis to death.

Conclusions
Our results suggest SLNB has an important role in determining prognosis for MCC. Markedly improved survival rates for stage I/II disease having SLNB suggests there is occult regional disease in those with stage I/II disease not having SLNB. Due to the rarity of MCC, a collaborative approach is imperative to determine the significance of these results.

A national audit of compliance with specialist skin cancer quality improvement guidelines

Mr J Dunne, Dr E Kissin, Professor B Powell
St George's Hospital

Introduction and Aims
The Cancer Quality Improvement Network System (CQuINS) is an online platform for provision and improvement of cancer care in England. It involves self-assessment by individual cancer teams and external assessment by the National Cancer Peer Review (NCPR).

Our aim was to audit compliance with national CQuINS guidelines for surgical management of skin cancer.

Materials and Methods
Data was retrieved from the CQuINS website for all 44 trusts with specialist skin multi-disciplinary teams (SSMDT's). Data for surgical procedures from April 2012-March 2013 was audited (published in 2014).

Results
6 trusts (13.7%) were compliant with all audited measures, and all have only two named surgeons. 37 trusts detailed the surgeon's specialty, with 80 of 87 surgeons (92%) being Plastic Surgeons. 38 trusts (86.3%) were non-compliant, of which 3 trusts (7.9%) have not published any data.

Of those that were non-compliant, the requirement for two surgeons performing block dissections was not met by six trusts (15.7%) who had only one operator. 18 trusts (47.3%) had at least two named surgeons, however each surgeon was not achieving the required number of 15 axillary and groin block dissections per year, while 12 trusts (31.6%) have not published data. Four trusts (10.5%) performed block dissections at more than the required one named hospital.

Conclusions
A single SSMDT covers a population of 750,000 currently, but further centralisation of services may improve adherence to guidance. Contracting for future specialist services will be primarily outcome-related, and purchasing of skin cancer services by CCG's may be centred on adherence to guidance. This audit suggests the number of SSMDT's managing current surgical volume is not justified.

Extraneural brachial plexus lipomata presenting with thoracic outlet syndrome illustrating anatomy with clinical and radiological correlation

Mr S Dustagheer, Mrs N Roberts, Mr D Power
Queen Elizabeth Hospital

We present three cases of extraneural brachial plexus lipomata presenting with neurogenic and venous thoracic outlet syndrome. Impingement of the neurovascular structures within the thoracic outlet can lead to an array of clinical symptoms. It should be considered as the cause of upper limb neurological symptoms and when more common pathology has been excluded.

The thoracic outlet forms the communication between the superior boundary of the bony thorax, composed of the first thoracic vertebra and the upper margins of the first rib, the manubrium and the sternum. It is a conduit through which neurovascular structures pass, and can be anatomically divided into three potential spaces where compression can occur: the interscalene, the costoclavicular and subpectoralis minor. These cases occurred at each of these levels and illustrate the anatomy of these spaces with reference to the clinical and radiological findings. The symptoms of obstruction at these levels can be arterial, venous, but most commonly neurogenic.

Each of these cases was successfully managed surgically. All three patients recovered well with resolution of symptoms at follow-up. In the presence of unilateral thoracic outlet syndrome, a tumour causing an extrinsic compression should always be included in the differential diagnosis. These cases serve to illustrate the anatomy of this region with the pathological implications to these important neurovascular structures.

Lymphoscintigraphic mapping of truncal malignant melanoma

Mr A El Muntasar
University of Manchester

Introduction and Aims
Mapping of sentinel node for truncal malignant melanoma based on the anatomical location of the primary tumour on the trunk.

Methods
Patients diagnosed with malignant melanoma on the trunk and had a sentinel lymph node biopsy from 2006-2015 were identified in the Christie NHS foundation trust. The anterior and posterior surfaces of the trunk were divided into four sections each.

Key results with supporting statistical analysis
212 patients were evaluated. Median age was 58, majority males (64%) with a mean Breslow thickness of 1.92 mm. Malignant melanoma above the spine of the scapula mostly drained to axillary basins

(98.5%). Melanomas inferior to the posterior superior iliac spine drained to both groin and axillary basins. Malignant melanoma on the middle back had a complex lymphatic draining pattern, with potential draining to any of the four major basins regardless of their relation to the sagittal plane. Malignant melanoma of the superior anterior trunk drained to the axilla (96%). Whist the primaries around the umbilicus were mostly on the right and drained to both axillary and groin basins.

Conclusion
The location of the sentinel lymph node could be predicted more accurately for posterior compared to anterior truncal malignant melanoma.

Complete upper limb venous thrombosis following brief application of an operative arm tourniquet: a case report

Dr R Ghedia, Mr J Dunne, Miss Jessica Steele, Miss Sonja Cerovac
St George's Hospital

Introduction
Upper extremity compartment syndrome and deep vein thrombosis (DVT) secondary to operative tourniquet application are rare outcomes of established practice. This case describes a sudden, limb threatening venous thrombosis/incompetence following a brief tourniquet application and presents clinical steps undertaken.

Materials and Methods
A fit and well 54 year old female underwent elective removal of a right olecranon plate under general anaesthetic with a mid-arm tourniquet inflated for 34 minutes at 250mmHg. In recovery, she developed a swollen and erythematous forearm, without significant pain and paraesthesia. Coagulation screen was normal and she was a non-smoker.

Results
Examination by Plastic Surgery seven hours post-operatively identified a blue and tense forearm distal to the tourniquet level, and diminished sensibility in all fingers. Hand movement was normal with good arterial inflow and without significant pain. Dual phase CT angiogram identified no venous outflow proximal to the brachial vein.

Emergency fasciotomies of the right forearm and hand were performed and muscles were healthy. Superficial and deep veins had in-situ thrombosis throughout the forearm, and attempted thrombectomy was unsuccessful. The patient continued an IV heparin infusion and venous outflow improved over seven days. An aetiological factor for thrombosis has not been identified.

Conclusions
Extensive upper limb venous thrombosis from tourniquet application is a rare limb-threatening condition, which may develop in well patients. Fasciotomies precluded use of thrombolytic agents. Early

anticoagulation can optimise recovery of severe venous incompetence, with prompt surgical management ensuring limb survival.

Electrochemotherapy for the treatment of non-melanotic and melanotic skin cancer within the head and neck: a case series

Miss D Grech Marguerat, Mr J Ward, Miss G Mitsala, Mr A Orlando
Southmead Hospital

Introduction

Electrochemotherapy (ECT) is increasingly being used to treat melanotic and non-melanotic skin cancer. Utilising the concept of electroporation, ECT increases the permeability of non-permeable or poorly permeable drugs like bleomycin, enabling the use of a dose far below the cytotoxic concentration. We present our initial experiences at North Bristol NHS Trust and the early post-operative results.

Methods

All patients treated with ECT for primary cutaneous skin cancer within the head and neck between January 2014 and March 2015 at North Bristol NHS Trust were included in the study. Patient demographics, clinical characteristics, oncological outcomes and any complications were extracted by case-note review and analysed.

Results

Five patients (two basal cell carcinoma and three melanoma patients) were treated with ECT during the study period. The two basal cell carcinoma patients had a partial response to treatment. One patient reported ongoing post-operative pain which settled at six weeks. No other complications were reported. Two melanoma patients developed new lesions outside the treated area at three months follow-up. One patient died of disseminated metastases three months post-operatively. The other four patients were agreeable to further ECT at follow-up.

Conclusions

ECT is a promising treatment modality for patients with cutaneous melanotic and non-melanotic skin cancers within the head and neck. It is especially useful for patients with a high burden of disease for whom surgery may be too disfiguring or morbid.

Primary cutaneous myxoid spindle cell squamous cell carcinoma: case report of a rare skin cancer

Dr C Harris, Dr R Green, Mr I Khan
Wrightington, Wigan and Leigh NHS Foundation Trust

Introduction

Primary cutaneous myxoid spindle cell squamous cell carcinoma (MSC SCC) was first described by Yang et al. in 2009. They reported six cases of this new variant of SCC. No other literature regarding MSC SCC has been published since. We describe a further case. Due to the rarity of MSC SCC, it is not possible to predict prognosis. This case highlights the diagnostic criteria Yang et al. introduced to differentiate MSC SCC from other SCCs and the need for close monitoring to help predict patient prognosis.

Case

A 72-year-old Caucasian female presented with a round nodular lesion to her right shin. It had increased in size, but was slow growing. Her skin was markedly sun-damaged, with a history of actinic keratosis. Initially the lesion was thought to be a naevus or a basal cell carcinoma. Histological findings were consistent with a MSC SCC.

Current literature

The Yang et al. cases described were primary cutaneous and mucocutaneous SCCs with prominent extracellular stomal mucin deposition, and with an epithelial spindle cell component. The Yang et al. criteria was used as guidance in this case to help diagnosis. There is no further literature to date surrounding this rare form of SCC.

Conclusion

This case met the majority of Yang et al.'s diagnostic criteria, confirming MSC SCC. Several of their cases had local recurrences. One had metastatic disease. MSC SCC is such a rare carcinoma, it is difficult to determine prognosis. The lesion was deeply invasive, indicating MSC SCC may be an aggressive neoplasm. It highlights the value of the Yang et al. criteria for diagnosing MSC SCC and preventing misdiagnosis. Careful patient follow up will help understand the nature and history of this exceedingly rare neoplasm and contribute to the limited literature.

Withdrawn The quality of health information on the internet regarding rhinoplasty: what are patients being exposed to?

Mr A Haymes
East Surrey Hospital

Introduction
This study aimed to assess the quality of information available on the internet to patients considering an elective rhinoplasty for therapeutic or cosmetic reasons.

Materials and methods
The three most trafficked search engines in the UK (Google, Bing and Yahoo) were searched using medical and colloquial phrases relating to rhinoplasty. The first 30 web links in each search were screened and evaluated with the LIDA Instrument (accessibility, usability and reliability criteria), DISCERN score (quality) and the Flesch Reading Ease Score (FRES).

Results
Of the 360 possible links, 66 were analysed. The average LIDA accessibility score was 47/54 (87%), usability score was 7/12 (61%), and reliability score was 7/30 (22%). The average DISCERN score was 40/75 (54%) and the average FRES was 57.7 (range 39.2-77.1). There was no correlation between a websites LIDA score (r_s = -0.058) or DISCERN score (r_s = 0.071) and its search result rank. There was no difference in the quality of websites resulting from the medical search term 'rhinoplasty' vs the colloquial term 'nose job'.

Conclusions
The quality of patient information on rhinoplasty available on the internet varies greatly and patients are at risk of being misled by inaccurate or commercially motivated information.

Analysing breast implant outcomes using a departmental implant registry database

Mr J Henton, Mr O Ashour, Mr P Sugden
University Hospital of North Durham

Introduction
Following the PIP breast implant scandal, our department instigated a breast implant electronic database. Prosthesis details, surgical data, outcomes and complications are collected. Prospective data was recorded from 2012, alongside retrospective data for previous patients returning for secondary surgery.

Methods
The database was interrogated and details obtained for all patients who underwent breast implant procedures. We analysed our practice across the database and compared our complications over the last five years to figures quoted in the literature.

Key Results
Between 1984 and 2015, 1602 individuals underwent 2582 procedures (1342 bilateral, 1240 unilateral, mean 1.6 procedures/patient). 1602 patients underwent primary procedures with 980 undergoing revision surgery. 3912 implants were used. Surgical indications: exchange 19%, reconstruction 11%, hypoplasia 10%, Asymmetry 6%, explantation 2%, tuberous breast, 0.5%, not recorded 50%. Complications: rupture 4.5%, capsule necessitating redo 2.9%, Infection (return to theatre) 0.9%. There was no statistical correlation with drain use and haematoma, or antibiotic use and infection.

Conclusion
Our complication rates are comparable to the published literature and the results provide an interesting insight into breast implantation procedures in an NHS setting. The older, retrospective, dataset is incomplete which highlights the benefit of prospective data collection, accurate operative records and mandatory input fields in the database. Collecting this data provides an easily searchable record of our unit's implant patients which can be used for audit, monitoring, or for easy recall of patients in the event of future manufacturing problems.

A two nipple technique: nipple areola reconstruction for the hypoplastic nipple areola complex (Point of technique)

Dr R Holmes, Miss J Goodenough, Mr O Koshy
Whiston Hospital

Introduction and aims
We describe a novel approach to reconstruction of the hypoplastic nipple areola complex (NAC) with the aim of retaining sensation of the nipple and avoiding scars on the upper pole of the breast.

Material and methods
We used this novel approach for a 38 year old lady with right sided Poland sequence. She had a previously (ruptured) subcutaneous right breast implant and subsequent DIEP breast reconstruction. The hypoplastic NAC remained superiorly placed. Nipple reconstruction was then required, along with superior pole breast lipofilling and a left sided symmetrising mastopexy. A modified CV flap was used to reconstruct the right nipple using stored cartilage (from previous DIEP surgery) shaped into a peg. The new nipple was sited close enough to the existing hypoplastic nipple to allow this to be incorporated into the new areola, which was created from a full thickness areola graft from left breast.

Results
With the addition of tattooing, the hypoplastic nipple is disguised within the new areola with appearance

more suggestive of a Montgomery tubercle. The patient retains neurovascularity and hence sensation within this area, and there is no need for any scars above the NAC.

Conclusions
We hope this novel approach can be considered for other patients who would benefit from hypoplastic NAC reconstruction in the future.

The Adult Exceptional Aesthetic Referral Protocol: an audit of 310 referrals for breast reduction in the East of Scotland

Mr A Ibrahim, Mr M Sinha, Miss F Hogg
Ninewells Hospital

Introduction and Aims
In Scotland, the *Adult Exceptional Aesthetic Referral Protocol* contains a series of aesthetic procedures, which, as they are not treating an underlying disease process, are not routinely available on the NHS, and can only be provided on an exceptional basis where there is clear evidence of benefit to the patient. We aim to audit this process for bilateral breast reduction referrals.

Material and Methods
Referrals are screened by a vetting panel consisting of a plastic surgeon, a nurse specialist and a clinical psychologist. These are either accepted for psychology/clinical review or rejected. The patients then undergo the assessment process, where, if they are supported by clinical psychology they then undergo clinical review. If found suitable clinically, they are then offered the procedure.
Referrals from the East of Scotland were prospectively recorded for3½ years from 2012 for a total of 310 patients for breast reduction.

Results
A total of 310 referrals were received of which 185 patients were assessed by psychology of which 88 were supported. Following a clinical assessment,16% (51 / 310) underwent the procedure. Included in this group were 37 referrals for mastopexy, where, 13 were accepted for psychology review of which seven were supported for consideration of procedure.

Conclusions
In our centre, the AEARP has been instrumental in streamlining breast reduction referrals in a transparent and fair manner. Our current acceptance rate for breast reduction procedure is 16% of the initial referrals. We aim to discuss our findings in details.

The Adult Exceptional Aesthetic Referral Protocol: an audit of 257 referrals for abdominoplasty in the East of Scotland

Mr A Ibrahim, Mr M Sinha, Miss F Hogg
Ninewells Hospital

Introduction and Aims
In Scotland, the Adult Exceptional Aesthetic Referral Protocol contains a series of aesthetic procedures, which, as they are not treating an underlying disease process, are not routinely available on the NHS, and can only be provided on an exceptional basis where there is clear evidence of benefit to the patient. We aim to audit this process for abdominoplasty referrals.

Material and Methods
Referrals were screened by a vetting panel consisting of a plastic surgeon, a nurse specialist and a clinical psychologist. These are either accepted for psychology/clinical review or rejected. The patients then undergo planned review, where, if they are supported by clinical psychology undergo clinical review. If found suitable clinically, they are then offered the procedure.

Referrals from the East of Scotland were prospectively recorded for 3½ years from 2012 for a total of 310 patients.

Results
A total of 257 referrals were received of which 144 (56%) patients were assessed by psychology of whom 56% were supported. The remaining 113 were deemed as not eligible at the initial vetting process and hence rejected. Of the 56 patients supported by psychology (39%), two patients received psychological therapy. The remainder were supported and clinically assessed for suitability of procedure.

Conclusions
In the East of Scotland, the AEARP has been instrumental in streamlining abdominoplasty referrals in a transparent and equitable manner. We aim to discuss our findings in details.

An unusual case of hamstring pyomyositis: nocardia and the risk of disseminated infection

Miss P Jackson, Dr N Foster, Mr J Wiper
Leeds General Infirmary

Case History
A 57-year old man receiving immunosuppressive medication following renal transplant was admitted with cellulitis of the left posterior thigh. The history was suggestive of a hamstring rupture with secondary infection of the haematoma. Ultrasound guided drainage yielded haemoserous fluid and pus

were which sent to microbiology for analysis. *Nocardia farcinica* was isolated from the pus by conventional culture and MALDI-TOF identification. The patient was commenced on an empirical regimen of amikacin and meropenem, however his fevers continued and open surgical drainage was performed. At surgery the intramuscular cavity was matted with tissue oedema suggesting pyomyositis. After five days the patient remained febrile despite adequate source control prompting change in antibiotics to ceftriaxone and linezolid based on preliminary susceptibilities and concerns over the nephrotoxicity of amikacin.

Discussion

Nocardia sp. is a bacteria exhibiting weak Gram positive and acid-fast staining branching filaments, which behaves as a fungus.*Nocardia* most frequently causes opportunistic infections in immunocompromised patients but can also rarely cause infection in patients with an intact immune system. *Nocardia* is a ubiquitous environmental organism entering the body by inhalation or inoculation. Infection is usually contained to the site of entry by the immune system but impairment of these defenses can lead to disseminated disease with the formation of abscesses in the brain, lungs, and skin.

This case highlights the importance of microbiological examination and demonstrates an unusual infection in an immunocompromised patient that could result in life-threatening dissemination if not adequately treated.

Successful treatment of a digital recurrent hyperkeratosis in a full thickness skin graft with a CO2 Laser

Mr M Javed, Mr W Norbury , Mr M Murison
Welsh Centre for Burns and Plastic Surgery

Introduction

Irregularities of skin texture such as hyperkeratosis in skin grafts following surgery is a common cosmetic problem. Several treatment modalities including dermabrasion, surgical excision and laser resurfacing (Er:YAG) have been used to treat hyperkeratotic and hyperpigmented skin grafts. We report a case of recurrent hyperkeratosis of a full thickness skin graft in a digit treated with a CO2 laser.

Methods

A 68 year old, retired policeman, presented with a history of hyperkeratosis over the volar aspect of his right ring finger. Seven years earlier he had sustained an injury to the same finger which was reconstructed with a full thickness skin graft. Few months after the surgery he developed hyperkeratosis of the grafted area with recurrent breaks in the skin. Hence the graft was excised and re-grafted however the patient developed recurrence of hyperkeratosis. The patient underwent single treatment with UltraPulse® CO2 Laser (Lumenis, UK) set at 175mJ with a 2mm collimated beam. Multiple passes were carried out over hypertrophic areas until the separation of the epithelium. This was followed with Deep Fx treatment (15 mJ, 300 Hz, 2-6-1-10%). Antibacterial ointment was applied at the end of the procedure.

Result
At the two month follow up, all the areas had healed completely with no evidence of any recurrence of hyperkeratosis. Patients scar had also softened immensely.

Conclusion
In appropriately selected patients the CO2 laser is an effective treatment for skin texture irregularities and wound healing problems secondary to the hyperkeratosis in skin grafted areas. It also has a significant impact on the scar pliability in full thickness skins grafts.

Ten year epidemiology and cost analysis of paediatric burns undergoing fluid resuscitation and treatment at the Welsh Centre for Burns and Plastic Surgery

Mr M Javed, Dr M Vilivan, Dr M Eales, Miss S Hemington Gorse
Welsh Centre for Burns and Plastic Surgery

Introduction
Globally, burns injuries are the third leading cause of unintentional death amongst childrenThis study evaluates the ten year Welsh experience of the epidemiology and cost of paediatric burns that required fluid resuscitation.

Methods
The study was conducted at the WCBPS Swansea, United Kingdom. Data of all paediatric (age ‹16 years) burns that required admission and resuscitation was analysed retrospectively from 2003-2013.

Results
A total of 3870 patients underwent assessment, of which 32 % were acute injury admissions (n=1250), of which 2% (n=82) required resuscitation. A minimum of 3 and a maximum of 17 patients underwent resuscitation each year between 2003-2013, 39% were male (n=32) and 61% female (n=50). The mean age was 5.3 years. A total of 49% (n=40) sustained partial thickness burns, 5% (n=4) full thickness and 46% (n=38) sustained mixed thickness burns. The average TBSA % burn was 20%. The majority of patients sustained scald injuries (56%) followed by flame burn injuries (31%). Average length of ventilation was 1.5 days and average length of stay (LOS) in ICU was 6.4 days. The total LOS averaged 17 days. The average cost of ICU stay was £20,000 (£3,131/day). There was a downward trend in regards to patients requiring burn surgery.

Conclusion
The cost of treatment of burns remains high. There has been a steady decline in paediatric burn injuries requiring resuscitation and operative management in our unit. This could be attributed possibly to the prevention of burn injuries by improved awareness, fire prevention & safety initiatives. In addition, this data provides a valuable resource for developing health initiatives targeted at the public for further reducing the incidence of paediatric burns.

A role of post-operative negative pressure wound therapy in multi-tissue hand injuries

Dr Y J Jeong, Dr Y H Kim, Dr B F Seo, Dr H Shim, Dr S Jung, Dr H Kwon, Dr J Byeon
Department of Plastic and Reconstructive Surgery, Uijeongbu St.Mary's Hospital, the Catholic University of Korea

Introduction

Negative pressure wound therapy (NPWT) is well known for good therapeutic method not only for skin or soft tissue defects but also for complicated wounds. Because authors' institution is the head emergency center in our state, we encounter many patients with complicated soft tissue injuries of the hand. We introduce the NPWT applications in severely injured hands for rapid wound healing and fast start of physical therapy, and their favourable results.

Methods

A total of 27 patients with multi-tissue hand injuries with 20-50 points in Hand Injury Severity Scoring (HISS) system from January 2009 to December 2013 in our centre were involved. Group I included 12 patients that were treated with simple polyurethane foam dressing, while Group II included 15 patients that were treated with NPWT. We applied 80mmHg of negative pressure in continuous manner and changed it every 2-3days, until removal of stitches. We compared the time reached 80% level of range of motion and the Disabilities of the Arm, Shoulder and Hand (DASH) score between two groups one month after surgery.

Results

There were no significant difference between two groups in age and HISS score. But the postoperative period until the 80% ROM was significantly longer in Group I (p<0.01), and the DASH score was significantly lower in Group II (p<0.01).

Conclusion

Because the hand is a dynamic organ, delayed wound healing in patients with multi-tissue hand injuries can lead permanent deformity and dysfunction. In this study, we found that NPWT is more effective than conventional dressing in the patients with multi-tissue hand injury. Therefore, postoperative NPWT can be a one good therapeutic option in patients with severely injured hands.

Head mounted devices in plastic surgery: its applications, limitations and legal pitfalls

Mr W Khor, Mr B Baker, Mr K Amin, Mr J Wong
University Hospital of South Manchester NHS FT

Introduction

Head Mounted Displays (HMDs) offer integration of real time visual information, enhanced visualisation and augmented reality in surgery. We present a review of various HMDs and their potential applications to Plastic and Reconstructive Surgery.

Methods

Publications on the use of HMDs across surgical specialities were identified through Ovid MEDLINE and PubMed and assessed using PRISMA. Current prospects, future developments and potential legal limitations for implementation were explored.

Results

Three HMDs have been investigated for its' use in surgery: Google Glass, MIST-VR, Microsoft Hololens and Oculus Rift. The benefits of these devices are: imaging and documentation; telementoring and education; intraoperative benefits and patient benefits:

Imaging and documentation: Improve assessment of and monitor progress in burns and wounds, ease access of electronic patient records and improve clinical documentation.
Telementoring and education: Point-of-view surgical training, surgical simulation, off-site multidisciplinary video-conferencing and off-site expert teleconsulting.
Intraoperative benefits: Hands free communication and picture-in-picture augmentation of the surgical field.
Patient benefits: Distraction software for burns physiotherapy.
Continuous recording and cloud storage may prohibit confidential use.

Conclusion

Despite the demise of Google Glass, the enthusiasm of HMDs has not diminished. The continuing innovation of Microsoft HoloLens and Oculus Rift opens new avenues for HMDs in PRS. A major movement to use of these devices in routine practice is acceptance and familiarisation. Application of such devices will require further exploration into clinician and patient satisfaction.

Anatomy in medical school

Dr Andrew Kilshaw
Hull Royal Infirmary

Introduction

Studies have suggested that de-emphasis of anatomy teaching could have serious consequences on the preparation of anatomically competent medical graduates, this study was produced to explore final year medical students' perceptions of their anatomical knowledge.

Aim

The aim of the study is to explore final year medical students' perceptions of their knowledge of anatomy, so as to inform the MBBS programme team of any potential developments to the curriculum

Method

All final year medical students at Newcastle University were requested to participate. An online questionnaire was produced. The quantitative data was analysed using SPSS while the qualitative data from the free text boxes underwent conventional content analysis.

Results

The study found that though students appreciate that anatomy is important, other subjects were deemed more important and took priority in learning.

Despite students believing that their knowledge of anatomy is inadequate, the majority perceived their anatomical knowledge to be sufficient for their clinical placements.

Students suggested that other subjects taking priority in learning, lack of anatomy teaching and time constraints are the reasons which limit their ability to learn anatomy at medical school Integration of anatomy throughout the five years of medical school and refresher courses would help improve their anatomical knowledge.

Conclusions

The first is that an optional refresher course in anatomy is offered to final year students. The second recommendation is that the medical school request clinicians teaching medical students during their clinical placements to teach as much anatomy as possible whether in outpatient clinics, in theatre or at the bedside.

Keeping up with the 21st century: photo apps in plastic surgery

Miss Michelle Lo, Mr Ian Mackie
North Bristol NHS Trust

Introduction
Plastic Surgery is a fundamentally visual specialty with a large scope for the use of medical photography in managing patients. Images can be used for disease/treatment monitoring, teaching, research and gaining advice from peers/seniors (1).

Many of us carry good quality cameras on our smartphones; however, current clinical photography guidelines and the Data Protection Act (1998) inhibits the use and storage of photos with smartphones. Mobile phone apps have been developed by companies and can provide a legally compliant solution.
We will assess some of the current apps, and discuss advantages that these can provide highlighting barriers that need to be overcome to allow their use in practice.

Discussion
Current apps offer a number of useful features; most offer basic patient information and photo documentation with some facilities to upload. However, the majority fail to address patient consent.
A medical photo app should be readily available to healthcare professionals and be compatible with popular mobile and desktop platforms. Consent should be a necessity for the user to take photos and different levels of consent should be offered. The app should ensure that these are transferred only through secure networks. As part of GMC guidelines, secure arrangements should be available from the app to ensure long-term record and accessibility (2).

Conclusion
There is vast opportunity for photo apps in Plastic Surgery and possibly a natural evolution of our note keeping. Obtaining valid consent from patients is the overriding factor to allow the use of this technology. Many apps are already available and Trusts have already or are developing these that refer to these essential components.

B lymphocyte-induced maturation protein 1 induces allograft tolerance via modulation of T cell development

Mr C Loh, Dr A Wang, Dr S Chen, Dr C Lin, Professor H Sytwu, Mr S Chuang, Mr H Yu, Professor F Wei
Chang Gung Memorial Hospital

Background
Hand transplants allow for the restoration of form and function, but issues of chronic immunosuppression have limited it widespread use. Skin is the most immunogenic component of a composite tissue and therefore is the primary target of T cell-mediated rejection. Blimp-1 transcription

factor is a regulator for the terminal differentiation of B cells into plasma cells. Its role in skin allograft tolerance is unknown. We used transgenic (Tg) C57BL/6 mice, with overexpression of Blimp-1 in T cells, to directly study its potential role in inducing allograft tolerance.

Methods
Skin grafts from the tails of BALB/c mice were transplanted to Tg(-) or Tg(+) mice. Skin graft survival and immune cell profiles were evaluated. Rejection was defined when necrosis was first observed. Specific T cell populations and cytokines related to allograft tolerance were determined.

Findings
Tg(-) mice consistently showed rejection around day 7 whereas Tg(+) mice showed partial tolerance of the skin allograft. Peripheral blood from Tg(+) mice showed remarkably decreased IFN-γ-producing Th1 cells and increased regulatory T cells (Treg) as well as an altered lymphocyte composition compared with Tg(-) mice after skin transplantation. The increase in anti-inflammatory responses and suppression of inflammatory processes creates a 'graft protective microenvironment' that promotes allograft survival and tolerance.

Conclusion
Blimp-1 orchestrates a T cell-specific modulation of immunological tolerance in skin grafting by creating a allograft protective milieu. This provides us with further understanding of mechanisms behind allograft tolerance induction and potentially applying this in the clinical setting utilising Blimp-1 inducers.

Eyelid burns: a lateral tarsorrhaphy with forehead hitch to pre-empt and treat burns ectropion with literature review of eyelid burn management

Mr N Lymperopoulos, Mr D Jordan, Mr R Jeevan, Professor K Shokrollahi
Pinderfields Hospital

Introduction
The management of facial burns around the eyes and lower eyelid ectropion can be challenging. We undertook a review of the published articles to manage or prevent ectropion along with describing a surgical technique to mitigate ectropion facial burns with peri-ocular involvement.

Materials and methods
We reviewed all studies by searching both the Pubmed and EMBASE databases using terms "burn" and "ectropion". An illustrative case with our surgical technique is described also.

Results
A total of 17 papers were found to actually discuss the management of burn injuries to the eyelids with subsequent ectropion. Treatment options involved the use of a full thickness skin graft with or without concurrent scar contracture release but also use of a local flap reconstruction with or without a tissue expander or release of the underlying muscle. Other techniques included canthoplasty, a combination of

a Z-plasty with full thickness skin grafting, forehead flaps, fat transfer, and tarsorrhaphy with full thickness skin grafting.

Procedure
Here we describe our initial experience of a novel technique for temporary lateral tarsorrhaphy to help minimise subsequent ectropion formation and to protect the cornea in the acute phase.

The cases involve large surface area burns with extensive facial involvement requiring facial and eyelid skin grafts. We undertook lateral tarsorrhaphies with the novel modification of a hitch to the brow.

Discussion
Facial burns pose a difficult problem to the burn surgeon. The optimal surgical management of eyelid burns remains unclear. We describe a safe method of lateral or complete tarsorrhaphy that can help to miti

In vitro investigation into how haemodilution with crystalloid and colloid fluids effect clot microstructure: implications on burn resuscitation

Mr N Marsden, Dr M Lawrence, Dr G Davies, Mr J Kaczynski, Dr K Morris, Dr K Hawkins, Dr A Sabra, Professor I Whitaker, Professor P Williams, Professor P Adrian Evans
Welsh Centre for Burns & Plastic Surgery

Introduction
The decision to use crystalloid or colloids for burn resuscitation is an ongoing debate. Balancing the positive effects of different fluids against their negative effect on haemostasis in an important issue in fluid resuscitation. We compared the effects of saline and albumin dilution on coagulation using routine laboratory tests and a new rheological test – the Gel Point technique, which measures clot strength ($G`_{GP}$) and quantifies clot microstructure (d_f) at the incipient stages of fibrin clot formation.

Methods
90 healthy volunteers were recruited after informed consent and 20ml of blood was obtained from each. Five dilutions were investigated for both 0.9% Normal Saline and Human Albumin Solution (0,10,20,40 and 60% dilutions, n = 10 for each). The Gel Point technique was compared to routine coagulation tests.

Results
PT/APTT showed a gradual increase in clotting time (significant change from baseline at 40%) and haematocrit, platelet count and fibrinogen all decreased (significant change at 20%) as dilution increased for both fluids. Significant changes from baseline in d_f / $G`_{GP}$ were recorded at lower dilutions for Albumin compared to saline (10 vs 20%).

Conclusion
This pre-clinical in vitro study demonstrates that haemodilution with albumin produces a weaker, and more permeable clot than with saline. This new technique demonstrates this effect is not purely down to dilution, but due to the varied intrinsic properties of colloids, which effect fibrin polymerisation and

platelet activity more than crystalloids. The choice of fluid type may have implications on blood loss when performing early burn excision surgery in the resuscitation period.

A rare case of zygomycosis infection in the upper limb: case report and literature review

Miss C McArdle, Mr A Morritt
Northern General Hospital, Herries Road

Zygomycosis infection is an extremely rare and aggressive fungal infection that has a mortality rate of approximately 15% in the upper limb[1]. Penetrating trauma is the most common mode of innoculation of zygomycosis spores into the soft tissues and once infection in the upper limb is established local control is extremely difficult to achieve and amputation may be necessary[1].Clinical diagnosis of zygomycosis infection can be difficult without a high index of suspicion. The behaviour of the infection can be variable, ranging from localised cutaneous and subcutaneous disease to widespread gangrenous and haematogenous dissemination, which may ultimately be fatal.

We present a case of cutaneous zygomycosis infection in the degloved hand of a farmer in order to raise awarenesss of this rare infection and its potential limb and life threatening sequelae and also review the literature.

Functional hand salvage was achieved through a combination of radical surgical debridement, high dose systemic antifungal therapy and robust soft tissue cover in the form of a pedicled radial forearm flap.

[1]Cutaneous zygomycosis. Review Article. Clinical Microbiology and Infection, Volume 15, Supplement 5, 2009, Pages 41-45. A.Skiada, G.Petrikkos

3D printing provides unrivalled bespoke teaching tools for autologous free flap breast reconstruction

Mr S Mehta, Dr N Byrne, Dr N Karunanithy, Mr J Farhadi
St Thomas Hospital

Introduction

3D printing is commonplace in other surgical specialties including Neurosurgery and Maxillofacial Surgery. It allows interactive planning of surgery on bespoke, actual size, three dimensional models printed from preoperative scans of the patient. In this study, we applied 3D printing to autologous reconstructive breast surgery to create a patient specific model to help plan and teach bilateral DIEP flap breast reconstruction.

Methods
The preoperative abdominal CT angiogram of a healthy, middle aged female patient undergoing bilateral prophylactic mastectomy and DIEP flap breast reconstruction was used to create a computerised 3D image for printing. The abdominal muscle and relevant vascular structures in the CTA image were segmented using program "Mimics Research". This image was then printed with an Objet500 Connex1 3D printer which is a true 3D printer using polyjet technology to create layers of liquid resin photopolymer which are then cured under UV light.

Results
A bespoke, life size model of the patient's abdominal wall, DIEP vessels and their intramuscular course was successfully printed. The model was then used to plan, guide and teach surgery both pre- and intra-operatively. Anecdotal comments from trainees involved in the case were that the model allowed them to visualise the intramuscular course of the perforators better than a 2D reconstructed CT image. (The model is available for display at the conference.)

Conclusion
3D printing offers an unrivalled planning and teaching tool to reconstructive breast surgery. Its application could be made commonplace in the United Kingdom to further enhance the cutting edge surgical teaching available for Plastic Surgery trainees in this country.

PBNR: percutaneous blunt needle reduction of bony mallet injuries

Mr B Miranda, Mr L Murugesan, Mr A Grobbelaar, Ms B Jemec
Royal Free London NHS Foundation Trust

Mallet finger injuries are common; treatment goals include achieving joint stability, preventing extensor lag, and subsequent swan neck deformity. We describe a simple technique for improving intraoperative bony mallet reduction, which may avoid the requirement for closed Ishiguro extension blocking wires or open fixation, and present a prospective case series (n = 12). Intraoperative percutaneous blunt needle reduction (PBNR) is achieved under image intensifier guidance. Using artery forceps, a blunt fill needle tip is manipulated onto the proximal avulsed fragment; this is then guided into a reduced position and maintained using a well-formed Zimmer splint across the distal interphalangeal joint in 15- to 30-degree extension. There were 5 injuries involving ›1/3 of the articular surface (Doyle's classification IVb) and 7 injuries involving ›1/2 of the articular surface (Doyle's classification IVc). Mean hand therapy follow-up was 10.6 ± 1.0 weeks, extensor lag was 4.6 ± 1.7 degrees, and all patients achieved full functional recovery with return to normal daily activity. No complications were reported. Closed techniques, for example, Ishiguro extension blocking wires, may reduce the risks associated with open reduction, but do not avoid further articular surface damage. PBNR offers the surgeon a useful adjunct to the treatment options for bony mallet injuries, without excluding progression to surgical fixation if required. PBNR represents a less-invasive management option for bony mallet injures where surgical fixation may also be indicated.

A hand trauma application for Apple (iOS) and Android

Mr R Murphy, Mr D Markeson, Mr M Dalal
Royal Preston Hospital

Introduction and aims
The aim of this project is to provide a readily accessible and easy to use guide on the initial examination and management of acute hand injuries for trainees and junior doctors from a wide range of disciplines including: casualty departments, orthopaedic surgery and plastic surgery.

Methods
We are currently producing an application available on the Apple (iOS) and Android application stores that encompasses the key: anatomy, examination skills and indications for management of hand trauma. We are producing the application with a clinical software company lead by clinicians who practice as surgeons within the NHS.

Key results
This application will be free to download and use. We will update the application as necessary throughout the year based on feedback from end-users, ensuring appropriate bug fixes.

Conclusions
An educational reference tool in the palm of the hand is an excellent way to learn in the clinical environment with extreme time pressures often imposed upon clinicians. There is currently no other available guide on the iOS or android application stores that provides this service. With approximately 80% of clinicians using a smartphone, tablet or other mobile device during their working day a hand trauma application on a readily accessible device will create an easily disseminable educational resource for the future.

The Ignaz handbook app: its application in plastic surgery units

Mr S Nicholson, Mr D Thornton, Dr A Cheang, Mr C Chang
Leeds General Infirmary

The 'Ignaz Handbook' is a password-protected Smartphone App available to any healthcare professionals. It provides readily accessible local hospital and clinical details pertinent to staff working across a range of hospital departments. Information available includes ward location, contact telephone numbers, job roles and shift details; as well as clinical aids to assist and support junior doctors in their induction to new unfamiliar specialties. It is currently in use, being live for 10 NHS trusts with plans to extend cover further in the future.

We have developed specific content for the app relevant to our plastic surgery unit, in addition to generic clinical information about emergencies and acute cases commonly encountered by Plastic Surgery units that is applicable to any plastic surgical trainee.

Since instigation of EWTD compliant rotas we have experienced a shortage of SHO grade cover, with those doctors employed having little or no previous experience in plastic surgery. Similarly, agency appointed locums are often unfamiliar with the case mix or local working practices. Our Ignaz App content provides a useful resource to familiarise the user with the working practices in our unit, as well as providing background information regarding the management of common conditions, particularly trauma.

We believe this app is a valuable resource tool for junior doctors new to an unfamiliar department or specialty, helping them to improve their experience and efficiency post-induction. We present the Ignaz app and feedback from juniors accessing the information.

An original technique for the correction of congenital inverted conchal bowl deformity in an adult: case report

Mr O Osmani, Mr R Matthews
UHCW NHS Trust

Congenital deformities of the ear are a relatively common occurence. We describe the management of a case of "Inverted Conchal Bowl" in an adult. This is a rare congenital deformity of the ear, with only few reported cases in the paediatric population and no reported cases in an adult. The authors describe the techniques in management of this case which is innovative and will be a useful adjunct for surgeons who perform ear reconstructions.

Clinical indicators of mortality in necrotising fasciitis: analysis of 31 cases at a single institution

Mr D Othman, Ms J Caddick, Ms H Le Cocq, Mr U Anwar, Mr S Majumder
Pinderfields General Hospital

Background

Necrotising fasciitis (NF) is life & limb threatening surgical emergency causing necrosis to the superficial fascia, subcutaneous tissue & skin. Prognostic outcomes mainly depend on perioperative supportive therapy, early & adequate surgical debridement and appropriate antimicrobial therapy. Prompt diagnoses can be sometimes challenging due to paucity of skin manifestations caused by earlier antimicrobial therapy.

Method
A retrospective analysis of 31 consecutive NF patients referred & treated ultimately by our plastics surgery team.

Results
Mean age was 58.9 years. Diabetes & IVDU were the commonest comorbidities (51.6%,N=16). Survival rate was 51.6% (N=16), with 32 days average hospital stay & 3.9 operations per patient. A single pathogen was identified in 38.7% (N=12, mainly Group-A streptococcus), multiple pathogens (48.3%,N=15) & nil growth (12.9%,N=4). Pre-operative scans, bloods results, antimicrobial therapy & microbiology cultures did not significantly affect mortality rate.

Analysis
Delayed surgical intervention has significantly increased mortality ($p<0.05$) & mainly caused by misdiagnoses & multiple medical & surgical specialities referrals. Of the survivals, 68.7% (N=11) were reviewed by plastics at an early stage within their admission. On the other hand, of those who passed away, 30% (N=5) have been reviewed by plastics at an earlier stage. Unemployed or retired patients were 96.7% (N=30), with only one employed patient, who eventually returned to work.

Conclusion
A high index of suspicion is the key, with prompt diagnoses & referral to plastics team, allowing early & adequate surgical debridement, are the major clinical indicators in reducing the mortality rate in NF patients.

Paediatric burns with epilepsy or learning disabilities do not have increased risk of hospitalisation or increased length of hospital stay compared to the adult burns

Mr D Othman, Dr A Thacoor, Mr A Phipps, Mr M Anwar
Pinderfields General Hospital

Introduction
Patients' hospitalisation & length of stay (LOS) in an acute clinical facility has financial, social & clinical consequences (1). Previous adult burns studies have shown increased risks caused by medical & psychological problems (2), specifically epilepsy (E) & learning disabilities (LD) (3). We examined the hospitalisation risk & LOS of paediatric burns patients with epilepsy or learning disability & compared this to the established risk reported in the adult population.

Method
Retrospective review of acute paediatrics burns referrals to our regional burns centre. The admission rate & LOS measured & the LOS per percentage of the TBSA were used as morbidity indicators. Over a period of 6 months, 309 cases were included, with 9 cases with E or LD representing the study group. The mean values of age, LOS, %TBSA & LOS/%TBSA were calculated.

Results

There was no increased risk of hospitalisation or greater hospital LOS in the study group. In fact, this E & LD study group had even reduced hospitalisation & LOS, which was statistically insignificant ($P<0.05$). Both study& control groups were homogenous for other comorbidities injury mechanism & burn sites. The acute admission rate for control & study groups was 24.7% & 22.2% respectively.

Group	N	% of sample	Mean age	Mean LOS	Mean TBSA	Mean LOS/TBSA
Total group	309	100%	7.4	6.7	1.7%	3.9
Control group	300	97.1%	7.5	6.6	3.3	2
Study group	9	2.9%	6	4.5	3.5	1.2

Conclusion

Paediatric burns with E or LD have reduced risk of hospitalisation & LOS compared to adults. This could be caused by a closer parental & carer monitoring for these patients, reducing the injury severity & improving the first aid given. Further comparative studies between the two groups are encouraged to explore these results.

Ameloblastoma: a plastic surgical perspective

Mr A Alke Pai, Mr U Sarwar, Mr M Kulkarni, Professor B Kumar Majumdar, Dr A Udyavar Pai
Wexham Park Hospital

Introduction and Aim

Ameloblastomas are rare tumours commonly affecting the lower jaw with an annual incidence of 1-2 per million. Males and females are equally affected with ameloblastomas representing 1% of all oral tumours. Histologically, they are thought to derive from epithelial cells are locally aggressive with a high recurrence rate. Given their destructive nature, they are often treated by way of surgical excision and reconstruction.

We report on our units experience in the surgical management of three cases of adamantinomas affecting the mandible.

Methods and Materials

Two females (28 and 27 years old) and one male (29yrs old) underwent unilateral segmental mandibulectomies. All defects were reconstructed by way of free osteocutaneous fibular flap. No patients opted for dental implants due to financial constraints.

Results

Patients underwent one operation for the excision and reconstruction. Reconstruction was successful in all three cases with no flap losses. One patient had slight wound dehiscence which was treated by way of delayed secondary closure. Satisfactory aesthetic and functional outcomes were reported by all three patients on patient reported outcome measure questionnaires. Histological analysis confirmed the diagnosis. No tumour recurrence was noted in any of the patients after three months follow up.

Conclusion

Our opinion is in concurrence with the literature available that in case of ameloblastomas local radical surgery with immediate reconstruction as a single stage procedure has better outcome for the patient in terms of tumour control and functional and aesthetic outcome.

The dorsal distally based flap: a novel approach to the distal interphalyngeal joint

Mr N Pantelides, Mr S Iyer
Royal Preston Hospital

Introduction

The skin circulation at the dorsum of the terminal finger is precarious, such that dehiscence and delayed healing are frequent complications of surgery in this region. Various incision patterns have been described for dorsal exposure of the DIPJ but some provide limited access to the joint and the skin flaps tend to fall back inwards, requiring strong retraction that can traumatise them. Moreover, the confluence of the flaps falls over the area of the joint line or fusion line.

We present a new incision to approach the dorsum of the finger in the region of the DIPJ.

Methods

The incision is designed as follows. A point is marked on both the radial and ulnar aspect of the digit, halfway between the nailfold and the palpable middle phalynx head, a millimeter dorsal to the midlateral line. A further point is marked in the midline of dorsum of the finger, over the proximal aspect of the distal dorsal crease. The three points are joined to give a lazy curvilinear incision. A distal skin flap is raised in a plane above the paratenon of the extensor mechanism and a suture is placed from the tip of the flap to the nail plate to retract the flap.

The dorsal distally based flap was used for access over the DIPJ in over 100 patients between 2003 and 2013. Indications included DIPJ arthrodesis, tendon repairs, fracture fixation and tumour excision.

Results
All wounds healed uneventfully- there were no cases of dehiscence, delayed healing, skin flap necrosis or wound infection.

Conclusion
The dorsal distally based flap allows wide, unimpeded access to the DIPJ. The resulting scar falls slightly proximal to the joint/fusion line and its broad base helps preserve the marginal dorsal skin blood supply, thereby reducing the morbidity of surgery in this area.

Smartphone use in plastic surgery

Mr N Patel, Mr W Rozen, Mr T Vickers, Miss L Khan, Mr V Ramakrishnan
St Andrew's Centre for Burns & Plastic Surgery, Broomfield

Introduction & Aims
Advances in mobile telecommunication, improved mobile internet and affordability have lead to a significant increase in smartphone use within plastic surgery. We developed an education app useful for plastic surgeons and sought out to examine which other apps plastic surgeons have found useful.

Methods
We explored the use of smart phone apps by plastic surgeons and described the most useful apps specifically beneficial in the perioperative care of plastic surgery patients.

Results
Useful Apps:
? ***Communication Apps – Multimedia Messaging, WhatsApp, PicSafeMedi:*** Allow efficient communication via text, picture and video messages leading to earlier assessment and definitive management patients
? ***Storage Apps – Notability, Elogbook:*** Electronic storage of patient cases and notes
? ***Educational Apps – FlapApp, Touch Surgery, PubMed on tap:*** Step by step guides to surgical procedures to aid learning and online access to medical journal database
? ***Flap monitoring app – SilpaRamanitor:*** Free flap monitoring app based on photographic analysis for earlier detection of compromised flaps

Conclusion
There has been remarkable growth in smartphones use among plastic surgeons with apps being developed for every conceivable use. Apps are become more specific and increasing complex with the flap monitoring app being a key example. This app is crossing boundaries from a simple app to a medical device affecting patient care. The FDA recognize this and are producing new guidelines to help with this grey area. The capability of instant messaging, photography, videography, word processing, drawing and internet access allow significant potential in this small portable device.

Increasing options in autologous microsurgical breast reconstruction: four free flaps for 'stacked' bilateral breast reconstruction

Mr N Patel, Mr W Rozen, Mr V Ramakrishnan
St Andrew's Centre for Burns & Plastic Surgery, Broomfield

Introduction

Autologous breast reconstruction is often considered a preference to alloplastic options. There are cases, however, where a free flap cannot provide the volume of autologous tissue required for unilateral breast reconstruction, and the concept of 'stacked' bilateral deep inferior epigastric artery (DIEP) flaps was developed, in which hemi-abdominal flaps are raised on each DIEA, and both flaps transferred to the chest recipient site. In cases of bilateral breast reconstruction, stacked flaps may be required to achieve volume replacement, however options have not been described. We demonstrate the use of stacked free flaps for bilateral breast reconstruction, using one DIEP flap stacked with one TUG flap for each side.

Case Report

We describe the use of four free flaps for bilateral breast reconstruction in a 49 year old woman, with BRCA1 mutation, who presented for risk reduction mastectomies. Flap design was planned in a manner to achieve maximal projection and primary nipple reconstruction. This was able to be achieved by using the DIEP flap de-epithelialised and completely buried, with the flap orientated with the pedicle on its superficial surface, and the TUG flap lying superficially with its skin paddle used for nipple reconstruction and able to be monitored clinically. There were no flap or donor related complications and good aesthetic outcomes were achieved.

Conclusion

We describe the use of stacked free flaps for bilateral breast reconstruction, using one DIEP flap per side stacked with a TUG flap from each side. The technique offers a further option in microsurgical breast reconstruction for patients in whom there is a paucity of abdominal tissue for reconstruction.

Novel use of the superficial inferior epigastric vein lifeboat in DIEP flap harvest

Mr N Patel, Mr W Rozen, Mr V Ramakrishnan
St. Andrew's Centre for Burns & Plastic Surgery, Broomfield

Technical Tip

Deep inferior epigastric artery perforator (DIEP) flap reconstruction has become a well-established procedure for breast reconstruction. While vascular compromise is not common, venous congestion is the most commonly reported cause of such compromise, and of those that may require re-exploration, insufficient venous drainage is the most common cause. In such cases, flap salvage may require establishment of a secondary venous outflow source. In a standard unilateral breast reconstruction with a DIEP flap, zone IV is discarded, with the intra-flap segment of the superficial inferior epigastric vein

(SIEV) unused. We describe the novel approach of harvesting the SIEV within zone IV and banking within the breast pocket near the contralateral superficial vein should it be required for further salvage surgery. Our approach involves harvest of the SIEV on a side table (which allows simultaneous operating), flushing the graft with heparinized saline, and tagging the proximal end with an 8/0 nylon suture. This vein graft is then transferred and banked at the breast recipient site, near the flap vein where it is likely to be required. This simple step prevents further morbidity of a secondary donor site and reduces operative time should re-exploration be required.

Plastic Surgery Trauma Proforma: a compliance, efficiency and documentation tool

Dr D Pettitt, Mr F Al-Hassani, Mr F Urso-Baiarda
Wexham Park Hospital

Introduction and Aims
Accurate and comprehensive documentation is an essential component of good surgical practice. This audit examines the standard of surgical documentation prior to and following the implementation of a trauma proforma in a busy regional plastic surgery unit.

Material and Methods
Admission documentation for 40 patients was retrospectively reviewed and compared to the standards recommended by the GMC and Royal Colleges. Following implementation of the trauma proforma, a further 40 were subsequently reviewed.

Key results with supporting statistical analysis
Key demographic data and significant elements of the patient history were omitted in pre-proforma surgical clerkings. Following implementation, the proforma increased documentation compliance (range 2.6 – 277.8%), particularly with regards to specialist history elements. Physical form completion time was also significantly reduced.

Conclusion
Trauma proformas serve an important role in improving the quality of documentation, in addition to acting as an aide-memoir and efficiency tool. In an era of increasing pressures, litigation and financial penalties, they are likely to have an increasing role in patient management and in the stream-lining and digitalisation of services.

A case report of anatomic mirroring of symmetrical lesions in identical twins with Juvenile Hyaline Fibromatosis

Miss A Plonczak, Mr J Ong, Miss N Haram, Mr B Fu, Mr P T Anh, Mr R Young, Mr S Eccles, Mr N Kirkpatrick
Chelsea and Westminster Hospital Trust

Juvenile Hyaline Fibromatosis (JHF) is an autosomal recessive disorder of the connective tissue, characterised by the abnormal growth of hyalinised fibrous tissue. It presents with nodular lesions in the skin and other organ involvement (gingiva, joints, and bones). There are fewer than 70 cases described in literature to dates, with only one report of identical twins.

We present two cases of JHF in identical Vietnamese twins, whose diagnoses were based on typical clinical manifestations and subsequently confirmed by histopathologic analyses and genetic studies. The clinical features, surgical management, genetic analysis and follow-up are described.
These cases are unique in that they demonstrate a symmetrical distribution of skin nodules, with mirroring between the two identical twins.

Histological examination confirm features of JHF and genetic sequencing studies reveal mutations in the gene encoding the anthrax toxin receptor 2 protein (ANTXR2) located on chromosome 4q2.
Surgical management of these patients is described with no recurrence at 1 and 2 year follow-up. We believe this is the first report demonstrating the mirroring phenomenon in identical twins with juvenile hyaline fibromatosis.

Colloid based resuscitation in major burns using modified Muir-Barclay formula: forgotten but effective

Dr K Rao, Mr B Khoda, Miss A Murray, Mr C O'Boyle
Nottingham University Hospitals

Introduction and Aims
Acute burns resuscitation in UK burns centres is predominantly carried out using crystalloids as per the Parkland's formula. Although the formula is just a guide, there is a significant risk of over resuscitation. At the Nottingham University Hospitals major burns are resuscitated using the modified Muir and Barclay formula. The authors aimed to evaulate the results, safety and efficacy of colloid based resuscitation using a Muir and Barclay formula.

Materials and Methods
Data was collected by retrospective analysis of patients with major burns over a four year period. Parameters included burn %TBSA, burn depth, colloid volume predicted by formula, total fluid received,

urine output during resuscitation phase and haematocrit. All patients underwent resuscitation as per the Muir and Barclay formula with six infusions of 4.5% Human Albumin at a volume of 0.5 x Weight x %TBSA.

Results
The patients included in the study had an average size of 26% TBSA burn. The mean presentation delay was 4.6 hours and during this period all patients received Lactated Ringer's solution as per Parkland's formula. The resuscitation regime was changed to a colloid based regime around 8 hours post burn. All patients needed "top up" crystalloids in addition to the colloid administered. None of the patients developed complications from over resuscitation. The mean haematocrit was 35.7 at 36 hours with a mean urine output of 1.27 mls/kg/hr.

Conclusions
Our results demonstrate that colloid based resuscitation using Muir and Barclay formula is a safe and effective regime that can be monitored using a combination of urine output and serial haematocrit. The study adds further to the continued debate on the ideal fluid resuscitation regime.

Evaluation of the use of anti-microbials in the management of open fractures of the lower limb: a two-centre audit of compliance with BOAST 4 national standards

Mr B Rymer, Miss E Dimovska, Mr D T S Chou, Mr R Choa, Mr B Davis, Mr S Huq
Royal Stoke University Hospital

Introduction and Aims
Open fractures represent a threat to bone and soft tissue viability due to direct introduction of micro-organisms to the wound. The BOAST 4 document produced by BOA and BAPRAS gives clear standards for the use of anti-microbials in such injuries. This audit assessed compliance with these standards in two hospitals within the UK trauma network.

Materials and Methods
Patients admitted to Norfolk and Norwich University Hospital (TU) and Royal Stoke University Hospital (MTC) with open lower limb fractures between 2009 and 2014 were included. Data were gathered from notes and endpoints based on the BOAST 4 document.

Key Results
Overall, full data was gathered on 79 patients. Correct antibiotics were given on admission in 73 cases (92.4%). Thirty patients (40.0%) were correctly given gentamicin before initial debridement. Antibiotics were stopped at the correct time-point in 25 patients (31.6%). In those that were incorrectly continued, a total of 407 additional days were given, equating to a mean of 7.5 additional days per patient, with a range of 2-25 additional days. This represented a minimum of £3200 of unnecessary anti-microbial therapy.

Conclusions
This study demonstrates a vast need for improved anti-microbial vigilance within the management of

open lower limb fractures. Further study is needed to assess awareness of the current standards among involved surgeons and physicians. The authors believe simple interventions would greatly improve compliance within this area.

A cross-sectional study of cutaneous squamous cell carcinomas presenting in patients over 90 years of age

Mr S S Sandhu, Miss R Zarb Adami, Mr J N Rodrigues, Mr M Brotherston, Mr Z Shariff
Sheffield School of Medicine and Biomedical Sciences

Introduction
Squamous cell carcinoma (SCC) has increased in incidence and is associated with increasing age. The proportion of very elderly patients within society is also rising. SCCs in this vulnerable group are expected to become a greater problem. This study described key aspects of SCCs in patients over 90 years of age managed through South Yorkshire's Specialist Skin Cancer Multidisciplinary Team (SSMDT), to identify targets for future research and service improvement.

Methods
A cross-sectional study of all SCCs treated at the SSMDT in Sheffield from October 2013 to October 2014 was conducted. Patients with a histological diagnosis were dichotomised into those below 90 years (‹90yrs) versus those 90 years and over (↗90yrs). Sub-group demographics were compared.

Results
A total of 544 cases of SCC in 518 patients were included (mean age 78, range 26-100). 62 (11.4%) lesions occurred in 58 patients ↗90yrs (33 male: 25 female). ↗90yrs accounts for only 0.8% of the UK population. Twenty (32.3%) ↗90yrs lesions presented at pT1, 31 (51.2%) at pT2 or above, and 10 (16.1%) had no staging listed. In ‹90yrs sub-group, 151 cases (31.3%) presented at or below pT1, 215 (44.6%) at or above pT2, and 116 (24.1%) were not listed. The proportion presenting at an advanced stage (pT2 or above) was not significantly different between sub groups, (p=0.343, Fisher's Exact test).

Conclusion
Proportionally, patients over 90 years of age were much more likely to present with SCCs. This sub-group was similar to younger demographics, including a significant proportion presenting at advanced stages. Given the predicted increase in burden of these malignancies, study of treatment, outcomes and specific needs of the very elderly with these tumours is advocated.

Plastic surgery undergraduate clinical rotation: how it can affect the medical students' perception and career choice

Ms S Shaharan, Mr C Joyce, Dr K Lawlor, Mr K Joyce, Professor J Kelly
Galway University Hospital

Introduction

The postgraduate training in surgery has transformed in to shorter training pathway in UK and Ireland. The trainees are required to choose their specialty at an early stage. This crucial decision would have been made based on their preconceived ideas on the different specialties with varying degree of exposures during undergraduate training.

Aim

The focus of this study is to assess final year medical students' perception of plastic surgery as a career and to measure the influence of a two-week plastic surgery rotation on their future career choice.

Methods

Final year medical students of the National University of Ireland, Galway were asked to fill out a questionnaire before and after a two-week plastic surgery rotation. The questionnaire consisted of four parts and students were asked about their perception of plastic surgery as a career as well as the personality traits required to be a plastic surgeon.

Results

The majority of students felt that it is a rewarding specialty (89%) yet highly competitive (77%) and involves long working hours (66%). Ninety-percent of students perceived plastic surgeons as focused and confident. The percentage of students associated plastic surgeons as good teachers increased by 41%. Before the rotation, 27% of respondents were interested in becoming a surgeon and 8% listed plastic surgery as their preferred specialty. This changed significantly post-rotation. However, there were only 38% of the students who felt that they had the capabilities to be a plastic surgeon.

Conclusion

We have shown that undergraduate exposure to plastic surgery significantly influences student perceptions on the specialty. This may facilitate them in making an informed decision when choosing their future career.

The nomenclature of groin dissection for melanoma: time to simplify

Dr O Smith, Dr L Lee-Rodgers, Mr G Ross
University of Manchester

Introduction

A wide variety of terms are used to describe different extents of groin dissection for stage three melanoma which may result in confusion and reduce effectiveness of research. We aim to evaluate the published terminology.

Methods

A PubMed review was conducted using the terms 'melanoma' plus 'inguinal'; 'groin'; 'pelvic'; 'ilioinguinal' dissection. 63 papers were included from 1956 to March 2015. A review of anatomy and coding was also conducted.

Results

Inguinal dissection was described using 8 terms from 56 papers with 7 papers using multiple terms for the same procedure. 'Superficial dissection' was the most common term despite inguinal-nodal tissue being separated into superficial and deep layers anatomically. ICD10PCS and OPSC code for 'inguinal' with no anatomical definition, CPT codes for 'inguinofemoral/superficial'.

Combination inguino-pelvic dissection was described using 11 terms from 51 papers with 15 papers using multiple terms for the same procedure. 'Ilioinguinal' and 'Deep' were the most common despite most pelvic dissections including obturator nodes. ICD10PCS and OPSC code for 'pelvic' with no anatomical definition and CPT codes for 'superficial plus pelvic'.

Conclusion

Many different terms are used to describe the same procedures, often within the same article. The lack of clarity can confuse readers, hinder comparative research and jeopardise patient care. Imprecise documentation of anatomical definition limits surgical outcome reporting and can impede planning for revision surgery. Standardisation is necessary and groin dissection should be defined by anatomical boundaries e.g. 'superficial' and 'deep' inguinal; 'pelvic'; 'inguino-pelvic' with clear documentation of extent.

The use of post-operative prophylactic antibiotics in fat grafting: is there any benefit?

Dr O Smith, Mr A Esmaeli, Mr A Mosahebi
Royal Free Hospital

Introduction and Aims
The reported rate of graft site infection following fat grafting is extremely low. Despite this, and a lack of evidence showing proven benefit, it is common practice for patients to receive prophylactic antibiotics postoperatively. There are currently no guidelines available. Therefore our aim was to evaluate whether patients undergoing fat transfer procedures require postoperative prophylactic antibiotics to reduce graft site infections.

Methods
Data from patients undergoing fat grafting at the Royal Free Hospital between June and November 2014 were retrospectively analysed from a prospectively collected database. Only non-immunocompromised patients undergoing isolated fat grafting procedures were included.

Results
Twenty patients (average age 57) were included, ten who received (Abx group) and ten who didn't receive (NAbx group) postoperative antibiotics. No patients developed graft site infections. Median time to followup was 48 days (range 26-149 days). All Abx and six NAbx patients received peri-operative antibiotics on induction; four NAbx patients received none. The abdomen was the donor site in nineteen cases and the thigh in one. Eleven procedures involved fat grafts to the face and nine procedures to the breast. Average graft volume was 47.5ml (range 1-161ml).

Conclusion
There is wide variety in practice of antibiotic prescribing in these patients. Despite this, there appears to be no effect of antibiotics on the rate of graft site infection regardless of antibiotic regimen, graft site, donor site, volume of graft or age. We suggest that routine use of postoperative prophylactic antibiotics is unnecessary and a single peri-operative dose is sufficient in the non-immunocompromised patient.

Single stage total nasal reconstruction in an African community hospital

Mr J Smith, Mr H Rakhorst, Mr L Fourie
Pinderfields General Hospital

Introduction
Facing Africa organises and funds surgical missions to Western Africa aiming to deal with the devastating effects of Noma; a rapidly progressing infection of the mouth/face and genitals. Total nasal destruction is a common problem. Traditional forehead flap total nasal reconstruction is a staged procedure with the pedicle divided 3 weeks after initial surgery. This is difficult in an surgical mission

scenario where the team leaves after two weeks and follow up procedures are dependant on the availability of local trained surgeons and theatre capacity. The senior authors aim to highlight their experience with a one stage forehead flap for total nasal reconstruction in a low resource African hospital.

Materials and Methods
Total nasal reconstruction was performed on four patients. Lining is provided with local turnover skin flaps. The nasal scaffold is reconstructed with rib and cartilage graft. The nose was reconstructed with a paramedian forehead flap based on the supratrochlear vessels, raised as a pedicled island flap. A tunnel was created at the level of the brow and the forehead flap partially de-epitheliased and advanced through the tunnel. The flap was sutured on it self to reconstruct the columella and nares. The donor site was reconstructed with a split skin sheet graft.

Results
Three patients healed uneventfully, with good aesthetic outcomes. One patient had exposure of cartilage graft at the tip of the nose, which healed with secondary intention.

Conclusion
The one stage forehead flap is a safe and simple technique for total nasal reconstruction and should be considered in patients requesting single stage.

Using protocol driven post-operative recovery in free flap breast reconstruction to reduce inpatient length and cost of stay

Mr A Taalab, Mr S Wilson
Menoufia University

Introduction
Free tissue transfer breast reconstruction has become the gold standard for autologous breast reconstruction across the UK. However compared to non-autologous methods of reconstruction, the operation is relatively more expensive. Economically sustainable service in the current NHS requires improvement of postoperative protocols. We report our experience of implementing a protocol driven post-operative stay and its effect on reducing inpatient length and cost of stay yet maintaining patient safety.

Material and methods
Length of stay (LOS) data for patients who had Deep Inferior Epigastric Perforator (DIEP) flap breast reconstruction prior to designing a protocol for postoperative care was analysed, a protocol was designed and implemented in December 2008. Aspects delaying patients' recovery and discharge were identified, the protocol was modified and re-implemented, and data re-analysed.

Key results
A total of 96 reconstructions were performed in our hospital in 2014. In a previous study, cost analysis showed that 17% of the cost was generated during the hospital stay. Improvement of postoperative protocol resulted in reduction of mean LOS from 6.94 days before using a protocol to 5.85 days, 5.15 days and 4.78days with subsequent protocol modifications, resulting in significant reduction of costs.

Conclusion
Reducing LOS by improvement of postoperative protocol is easy, safe and results in significant costs reduction and improved patients' care pathway.

Innovative use of Laser Speckle Imaging to assess tissue blood flow intra-operatively: preliminary results in free-flap and immediate implant-based breast reconstructions

Miss J Rees-Lee , Ms C To (Joint First Authors), Dr R Gush, Dr K Gooding, Miss R Tillett, Mr N Cawrse, Mr D Oliver, Mr J Palmer, Professor A Shore, Mr A Wilson
Royal Devon and Exeter Hospital

Introduction
Inadequate tissue perfusion is a major cause of post-operative complications following breast reconstruction. The aims of this pilot observational study were to assess the feasibility of using the real time imaging provided by LSI to assess flap and mastectomy breast skin perfusion intra-operatively and to assess its potential clinical usefulness in mapping tissue perfusion to reduce post-operative complications.

Methods
The feasibility of performing LSI (moorFLPI-2) in 21 free-flap breast reconstructions andthree immediate breast implant breast reconstructions was assessed. Prototype for LSI was developed and clinical usefulness of intra-operative LSI images was assessed in free-flap reconstructions (1) by comparing zonal perfusion at the time point of abdominal flap isolated on pedicle and (2) by comparing tissue perfusion post anastomosis and occurrence of post-operative complications.

Results
The feasibility of using LSI intra-operatively was demonstrated and on average added only 10 minutes to the overall operating time. Areas of perfusion zones (Holm's) above an arbitrary tissue viability threshold (200PU) were calculated (percentage of total zone (Z) area), these were median Z1 (81%); Z2 (67%); Z3 (51%) and Z4 (1%) (p=0.001 for Z1 vs all; Z2 vs Z3, ns; p=0.001 for Z4 vs all; Wilcoxon). Very promising results were shown for LSI images to guide selection of flap boundaries, highlighting areas of poor flap perfusion and potential to predict breast skin necrosis in the immediate setting.

Conclusions
LSI was easily used intra-operatively. These pilot data suggested that LSI has the potential to aid surgical decisions to avoid the use of poorly perfused tissue and the associated post-operative complications.

Perforator-based straight-line closure of myelomeningoceles

Miss L Touil, Dr K M Maul, Mr A Y Fattah
Alder Hey Children's Hospital

Surgical repair of largemyelomeningocelesis challenging. The goals of repair are to create a tension free, durable closure which has sufficient vascular supply to promote healing. Most previous techniques described do not permit direct closure of the skin and require tension releasing incisions and/ or skin grafts. We aim to review our experience of a direct closure technique which restores normal anatomy andminimises morbidity and scarring.
Retrospective case review of four closures of large myelomeningoceles with bipedicled flaps of latissimusdorsi and thoracolumbar fascia. Our technique, modified from Ramirez *et al*(1987), permits a two-layer straight-line closure of large myelomeningoceles.
All four cases fully healed with no reported complications such as delayed healing, CS Fleak, dehiscence or infection. Our technique results in a moderate-tension linear scar which exploits the perforator anatomy and elasticity of a child's skin allowing for the closure of large myelomeningoceles without the need for skin grafting or separate skin relaxing incisions. This achieves dual-layered, watertight closure over the dura whilst minimising donor morbidity. The favourable outcomes observed to date indicate that this technique has a place in the management of large myelomeningoceles.

Management of pretibial lacerations/haematomas and patients' performance during healing time

Dr D Vasdeki, Miss S Naji, Mr I Khan
Whiston hospital

Introduction
Pretibial lacerations remain one of the commonest problems in Plastic Surgery. There is still no evidence of superiority of either a conservative or surgical approach for their management, nor any documentation regarding patients' performance following each approach. We present our experience on the management of pretibial lacerations/haematomas.

Methods
We conducted a retrospective study of all patients treated for pretibial lacerations/haematomas in our unit, from May 2013 till April 2014. There were 38 patients; 21 opted for conservative management and 17 for skin grafting, after consultation. Conservative management included washout of wound in the ward, application of non-adhesive dressings and bandage. Patients were discharged home on the same day and followed up in dressing clinic till wounds were healed.

Results
33% of conservatively managed wounds were completely healed and patients were discharged. Mean healing time was 86.1 (32-172) days and 4.4 (1-8) visits to the unit required. The Eastern Cooperative Oncology Group (ECOG) score was used to assess patients' well-being during healing time. Of the conservatively managed patients 55.6% scored 0, denoting fine health, while only 7.6% of the surgically managed patients scored 0. 77.8% of the conservatively managed patients reported they would not have a chosen a skin graft if given the choice again.

Conclusion
We have achieved satisfactory healing results following a conservative approach on these wounds, while having documented patients' performance during healing time. We would encourage this approach for the management of pretibial lacerations/haematomas.

A rare case of accidental fire and burns caused by e-cigarettes' batteries

Dr K Walsh, Mr Z Sheilkh, Mr K Johal, Mr N Khwaja
Royal Preston Hospital

Introduction
E-cigarettes (EC) have become very popular among adult smokers with 2.1 million estimated current users in the UK. Many users carry e-cigarette devices and their components upon their person. There have been a small number of reports in the literature of lithium batteries self-combusting. Such cases have resulted in significant morbidity and mortality.

Case Description
We present a case in which a 35 year old gentleman was admitted to our regional burns unit after his clothing was set-alight following the self-combustion of an E-cigarette lithium battery which was carried in his pocket. The gentleman sustained a 1.5% mixed depth burn to the lateral aspect of his right thigh. Ward debridement under local anaesthetic was performed to remove clothing residue and reduce the risk of tattooing. Following conservative management with outpatient dressings the burn healed by three weeks.

Discussion
The rare but potential fire hazards posed by e-cigarettes must be offset against the well-recognised risks associated with conventional cigarettes, an important cause of accidental fires worldwide. We believe burn injuries following combustion of lithium batteries, although rare, are more likely to occur due to the new growing trend of batteries being carried upon EC users. Batteries are inherently dangerous to carry and we urge EC users to refrain from carrying loose batteries within their pockets, particularly alongside keys, jewellery and coins. If EC users wish to carry batteries upon their person, we suggest that they are stored in a non-conductive, electrically insulated case.

Posterior interosseous neuropathy as a result of heterotopic ossification: a case report and review of current literature

Mrs H Wohlgemut, Dr W Sim Khor, Mr A Mishra
Royal Preston Hospital

Introduction
Heterotopic Ossification (HO) is bone formation in abnormal anatomic locations, often as a result of trauma. It is the least frequently encountered peripheral nerve lesion. As a result there is limited evidence to guide management; options include surgical excision, radiotherapy, physiotherapy and bisphosphonates. HO causing posterior interosseous nerve (PIN) neuropathy has not been previously documented. We present a unique case, and literature review.

Presentation
A 36 years old male presented four weeks after sustaining a glass laceration to his antecubital fossa. This injury was previously explored and no structural damage was found. He developed a PIN neuropathy, prompting his second presentation. He returned to theatre for exploration of the posterior interosseous nerve.

Intervention
Intra operatively the PIN was surrounded by thick fibrous tissue over a 6 cm segment. Neurolysis was performed; as the nerve was in continuity, nerve transfer or graft were ruled out. The histopathology results confirmed HO, and ruled out a retained glass foreign body reaction. In the post-operative period the patient experienced limited improvement of the neuropathy. This was expected, as the PIN did not stimulate with 4-milliamps intra-operatively, after neurolysis. He went on to have tendon transfer 9 months after the original neurolysis

Conclusion
There are twenty documented cases of HO in the upper limb. HO of the PIN has not been previously reported. The investigation of this lesion includes x-ray, EMG and CT, with no significant difference in the sensitivity/specificity. The main management option is surgical excision, with variable rates of recovery.

Lipomodelling is a suitable substitute for implant volume in pedicle flap breast reconstruction

Mr B Wooler, Miss P McManus
Castle Hill Hospital

Introduction
The *Latissimus Dorsi* (LD) myocutaneous flap is widely used in breast reconstruction. It is often combined with an implant to attain adequate volume; however implants bring specific complications and revision

surgery. Volume enhancement with planned lipomodelling instead of implants offers a totally autologous reconstruction with a natural shape and consistency and reduced contralateral symmetry surgery.

Methods
Data was collected prospectively over a seven year period, minimum follow up three years. All flaps were extended LD flaps and implants used were permanent semi-expandable implants. Lipomodeling was performed using standardised techniques. Outcome measures were unplanned secondary procedures, complication rates and contralateral symmetrisation surgery rates.

Results
165 cases were identified (autologous 108, implant assisted 57) including 4 bilateral.

The implant assisted patients required more unplanned procedures (73.7%) compared to autologous (24.1%), with a relative risk of 3.1 in implant assisted ($p<0.00001$). Complication rates were lower in the autologous group (29.6% vs. 35.1%) despite higher radiotherapy rates (49% vs. 36.8%).

55% of complications in the implant group were implant-specific, with unplanned implant exchange or removal in 42.1%. Autologous LD was associated with a lower subsequent contralateral symmetrisation rate (30.6% vs. 50.9%).

Conclusions
Using lipomodeling to enable totally autologous LD reconstruction offers significant advantages over an implant assisted technique with a lower subsequent unplanned procedure rate, lower revision surgery and less contralateral symmetrisation surgery. Long term patient reported cosmetic outcome data is required.

Head and neck free flaps: the Newcastle experience

Miss L Wright, Mr J Wokes, Mr D Sainsbury, Mr K Rahman , Mr O Ahmed, Mr M Ragbir
Royal Victoria Infirmary

Introduction
We reviewed our unit's experience of free flaps for head and neck reconstruction from March 2007-October 2014.

Methods
Data on all free flaps performed were prospectively collected from January 2007. Demographics, peri-operative details and surgical outcomes were analysed.

Results
232 free flaps for head and neck reconstruction were performed (males n=141; females n=72; not documented n=19). The types of flap were: radial forearm(n=77); ALT(n=68); fibula

(osseocutaneous)(n=50); MSAP(n=9); latissimus dorsi(n=6); SCIP(n=5); rectus abdominis(n=4); lateral arm(n=3); DCIA(n=3); vastus lateralis(n=2); fibula(bone only)(n=2); DIEP(n=1); jejunum(n=1); pectoralis minor(n=1).

34 patients experienced a complication with 21 (9%) returning to theatre. 18 of the patients returning to theatre had flap complications. Seven of the flaps that returned to theatre were salvaged. Total flap loss was 5.6% (n=13).Eleven of the flaps lost had returned for an attempted salvage operation. Flap loss is generally declining – the table below summarises our evolution in practice.

Year	Flaps lost	Flaps lost	Different types of flap performed
2007	10	4	4
2008		2	8
2009		3	7
2010		1	5
2011	3	0	4
2012		1	9
2013		2	7
2014		0	6

Average flap ischaemia time for flaps lost was 101minutes (102minutes flaps not lost) and average operation length was 519minutes (544minutes flaps not lost).

Conclusion

We are performing a variety of head and neck free flaps within our unit. In spite of diversifying the types of flap we perform, we are not seeing an increase in our flap loss. Our results demonstrate the inevitable learning curve seen when embarking on new procedure and our success rate has improved with time. By reviewing our practice we hope to improve our outcomes in the future.

Free flaps in the elderly: the Newcastle experience

Miss L Wright, Mr D Sainsbury, Mr K Rahman , Mr O Ahmed, Mr M Ragbir
Royal Victoria Infirmary

We reviewed our unit's experience of patients 65 years old or over who had a free flap between February 2007 – October 2014.

Methods

A prospective database of all flaps performed in our unit from 2007 onwards were analysed.

Results

804 free flaps were performed in our unit between January 2007 and November 2014. 154 flaps were in

patients who were 65 or older (male n= 93; female n=61). Of them, the mean age at time of operation was 73.5 (range 65-92).

26 (16.9%) of the flaps were performed in patients who smoked tobacco. 18 (11.7%) patients had diabetes, 22 (14.3%) patients had peripheral vascular disease and 38 (24.7%) patients had a history of respiratory disease.

Mean operation length was 483 minutes. Mean flap ischaemia time was 83 minutes.

Defect Location & Flap Type	Number of Flaps
Head & Neck	
Anterolateral Thigh	37
Radial Forearm	32
Fibula (Osseocutaneous)	19
Other	12
Lower Limbs	
Anterolateral Thigh	9
Latissimus Dorsi	9
Other	4
Upper Limbs	
Anterolateral Thigh	2
Other	2
Breast	
Deep Inferior Epigastric Perforator	13
Transverse Rectus Abdominal Myocutaneous	7
Superficial Inferior Epigastric Artery	2
Chest Wall	
Anterolateral Thigh	1
Latissimus Dorsi	1
Lower Back / Buttock	
Latissimus Dorsi	2
Other	2
TOTAL	154

Seven patients returned to theatre with flap complications and three of these were salvaged.

Conclusions

Elderly patients comprise a sizeable patient group within our free flap cohort. We perform a diverse range of free flaps within the older population who often have comorbidities. In spite of this, our flap loss rate is acceptable and our results demonstrate that chronological age is not a contra-indication to free flap surgery.

First ray polydactyly of the foot: the Newcastle experience

Miss L Wright, Miss S Stevenson, Mr P Henman , Miss B Crowley
Royal Victoria Infirmary

1st ray polydactyly of the foot encompasses a diverse anatomical and clinical spectrum.

Aim/Method
A retrospective review of patients with 1st ray polydactyly of the foot presenting our experience of managing these complex patients. Anatomical data and procedures undertaken were recorded prospectively at surgery under the headings skin, bone, joint, tendons, muscle and neurovascular.

Results
19 feet with polydactyly in 11 patients were identified. Duplication was at the level of distal phalanx (n=1), proximal phalanx (n=14), metatarsal (n=4). 1 case had triplication. Operative data were available for 16 feet in 9 patients. The skin envelope was shared to the tip, shared to the proximal nail fold or separate. In 12 feet the metatarsophalangeal joint (MTPJ) was shared with medial inclination in 4 feet. Extensor hallucis longus inserted on the lateral duplicate (n=5) or bifurcated inserting on both duplicates (n=10). Where recorded (n= 11), the flexor hallucis longus inserted on the lateral duplicate (n=2) or bifurcated (n=9). The abductor hallucis brevis (AHB) inserted on the medial (n=11) or lateral (n=1) duplicate. In cases of dominant lateral duplicate (n= 14), a mid-lateral filleting incision was used to explore anatomy and excise the medial duplicate. Procedures performed in addition to duplicate excision were: detachment of AHB from the medial duplicate with re-approximation to the lateral duplicate (n=11), physiolysis (n=4), wedge osteotomy (n=2).

Discussion
The anatomy can be unpredictable and requires versatility on the part of the surgeon. We favour an individual anatomical approach to treatment which optimizes results of primary surgery, has a useful prognostic role and assists with management of late deformity.

The role of selective peripheral neurectomy in the treatment of upper limb spasticity: a systematic review

Miss Li Yong, Dr C H L Wong, Mr M Gaston, Mr W L Lam
Royal Hospital for Sick Children

Management of upper limb spasticity remains challenging. Selective peripheral neurectomy (SPN) is a relatively recent intervention for cases refractory to medical therapy. The aim of this study was to conduct a systematic review looking at the efficacy and outcomes of SPN, in order to clarify the patient selection criteria and surgical technique.

A search of MEDLINE, EMBASE, Cochrane Central Register of Controlled Trials, Web of Science Core Collection, Open Grey and CINAHL was conducted. Inclusion criteria included studies comparing pre- and post-operative outcomes for SPN, neurectomy, fasciculotomy and upper limb spasticity.

Only case series were reported with no randomised controlled trials found. Seven studies met the inclusion criteria with a total of 174 patients. A meta-analysis was not possible due to the degree of baseline heterogeneity. All studies had no control arm for comparison of outcomes, with a high risk of bias due to poor internal and external validity, as well as design and performance bias.

Surgical techniques differ vastly between studies, with percentage of fascicles ablated between 30-80% and length of neurectomy between 5-10mm. Some advocated removing end branches while others performed fascicular SPN proximally. 13 patients underwent orthopaedic or neurosurgical procedures, which are both confounding factors. All studies reported an improvement in spasticity although functional outcomes were reported with non-standardised measures. Recurrence rates were reported to be 0-16.1%(mean 3.72%).

From this systematic review, SPN appeared to be a useful technique in selected cases, but overall no firm conclusions can be drawn regarding the best surgical technique, or the extent of functional improvement.