Summer Scientific Meeting 2016- Free Paper abstracts

(abstracts are listed in alphabetical order by presenter surname)

Forty-seven pre-tibial lacerations: to graft or to dress?

Dr C Asher, Mr E Smock, Ms L Karran, Dr N Emmanuel, Ms J Holden, Miss C Milroy
St George's Hospital

Aim

Cubison et al showed conservative management of pre-tibial lacerations is a viable treatment. We present our experiences managing 47 pre-tibial wounds and examine their care pathway at St George's Hospital, a major trauma centre in London.

Method

Included patients were referred to the Plastic Surgery department with a pre-tibial laceration between January 2013 and September 2014. Data was collected from case notes, our telemedicine system, the theatre registration system and a pre-tibial follow-up clinic looking at patient demographics, time to heal, complications and outcome.

Result

47 patients met inclusion criteria, mean age 68, 11 male, 36 female. 27 were lacerations, 15 haematomas, 5 laceration and haematoma. Management was debridement and; wound closure, vac insertion, skin grafting or in an outpatient dressing clinic. Five of 10 surgically managed lacerations required skin graft and 1 a VAC. Mean time to healing for lacerations was 8 weeks.

Half the patients with hematomas were managed surgically, time to healing 4 weeks, 11 weeks for conservative.

Conclusion

Non-operative management of pre-tibial lacerations is an attractive, safe alternative, avoiding general anaesthesia and further insult of a split skin graft donor site.

Conservatively managed patients experienced little restriction in daily activity and no significant reduction in mobility after wound healing.

We refined and improved our pre-tibial service, implementing an innovative pre-tibial clinic, modern dressings, provided an experienced nurse consultant, adopted telemedicine to manage patients at a distance plus developing close working relationships with community nurses resulting in an efficient, effective pre-tibial service at St Georges Hospital.

Clinical outcomes of paraspinal soft tissue sarcomas

Miss S Bagirathan, Mr N Eastley, Mr A Halka, Dr T McCulloch, Mr M Sarmad Tamimy, Miss A Raurell, Mr R Ashford, Mr G Perks
Nottingham University Hospitals NHS Trust

Introduction
Soft tissue sarcomas (STSs) are rare mesenchymal malignancies, mostly occurring in the extremities. Paraspinal tumours are uncommon and present difficulties in both surgical resection and reconstruction, and with oncological therapy. We present an insight into patients with paraspinal STSs treated by the East Midlands Sarcoma Service (EMSS).

Method
We performed a retrospective analysis of patients with paraspinal STSs, identified from the EMSS histopathology database over a 17-year period (1998-2015). Details of patient demographics, tumour site, histopathology, surgical and oncological treatment, and clinical outcomes were collected.

Results
Thirty-nine patients (26 male, 13 female) were identified, with a mean age 55.9 (range: 18-86 years old).The most common diagnoses were malignant peripheral nerve sheath tumours (9) and the largest tumour was 17x13cm. 40% of patients had initial inadequate excision outside our service. 23.1% of patients developed local recurrence, 30.8% developed metastases, and overall 5-year survival was 54.8%. 11 patients required reconstructive surgery following their resection; this ranged from split skin grafts to free flaps. 9 patients developed wound healing complications ranging from prolonged healing time and seroma, to complete graft loss.

Conclusion
Patients diagnosed with paraspinal STSs present a unique challenge to the sarcoma multi-disciplinary team. These patients often present late and treatment is limited by anatomical considerations. Our retrospective review highlights the poor prognosis of these tumours and the difficulties faced in reconstruction. Patients should be warned of the aggressive nature of the disease and the high risk of surgical complications.

Five-year speech outcomes following Furlow palatoplasty for soft palate and submucous clefts. Is the Furlow palatoplasty a superior method than intravelar veloplasty for soft palate and submucous clefts?

Miss J Baker, Mr T O'Neill, Miss C Wylie, Miss P Foster, Mr C Hill
Royal Belfast Hospital for Sick Children

Aim
To determine the 5-year speech outcomes following Furlow palatoplasty for soft palate and submucous clefts in a single centre.

Methods
A retrospective chart review of children born between 2004-2010 who underwent Furlow palatoplasty for soft palate or submucous clefts in the Royal Belfast Hospital for Sick Children was performed, using the CRANE database. Inclusion/exclusion criteria were subsequently applied to the cohort. 5-year speech outcomes were analysed using results collated on the CAPS-A form. Data for syndromic and non-syndromic patients was analysed. Results were compared to those currently published in the literature.

Results
Our main cohort comprised 23 non-syndromic soft palate cleft repairs and 11 non-syndromic submucous cleft repairs by Furlow palatoplasy. 5-year speech outcomes were excellent for all of our non-syndromic repairs. Our 5-year speech outcomes following Furlow palatoplasty for this cohort were comparable, if not better than most found in the literature.

Conclusion
Our results have highlighted the Furlow palatoplasty as a safe and reproducible method for soft palate and submucous cleft repairs, with excellent speech outcomes and very low incidence of subsequent secondary surgery. We would argue that the Furlow palatoplasty is a superior method of repair than intravelar veloplasty in this patient cohort.

Prevalence of psychiatric comorbidities among patients undergoing autologous breast reconstruction. Results from nationwide versus institutional data

Miss B Becherer, Miss P Kamali, Dr M A Paul, Miss W Wu, Dr H A Rakhorst, Dr K J Kansal, Dr S J Lin
Beth Israel Deaconess Medical Center, Harvard Medical School

Introduction
Autologous post-mastectomy breast reconstruction (BR) is a complex surgical procedure, requiring patients to have sufficient coping mechanisms. Despite the fact that mental health problems are common in the United States (18.5% in 2013), information about the prevalence of psychiatric diagnosis among women undergoing autologous BR is not readily available. In order to assess the prevalence of psychiatric comorbidities within this group, we compared nationwide data to our institutional data.

Methods
A retrospective analysis was performed using the Nationwide Inpatient Sample database (NIS) (2008-2012) and the institutional database of our institution (2004-2015). Patients undergoing autologous BR were included and divided into six groups: no psychiatric diagnosis, depressive disorders, anxiety disorders, substance-related and addictive disorders, trauma- and stressor related disorders, remaining diagnoses, and combined diagnoses. Prevalence of each subgroup, trend analysis and general patient characteristics were determined.

Results
In total, 49,969 patients were included; 49,079 from the NIS and 890 patients from our database.

Nationwide, 17.0% of the patients were diagnosed with a psychiatric disorder, compared to 32.4% in our institution. (Table 1)

Conclusion

Our analysis presents a difference in prevalence of psychiatric diagnoses. A significant amount of patients suffer from psychiatric comorbidity in the institutional cohort. This percentage is not represented in the nationwide database, and possibly under-realized. These results emphasize the importance of attention for mental health problems in order to attain sufficient treatment of BR patients.

Table 1

	BIDMC	Percentage	NIS	Percentage
No psychiatric diagnosis	**602**	**67.6%**	**40,726**	**83.0%**
Depressive disorders	69	7.8%	4,085	8.3%
Anxiety disorders	62	7.0%	2,605	5.3%
Substance-related and addictive disorders	3	0.3%	142	0.3%
Trauma- and stressor related disorders	49	5.5%	135	0.3%
Remaining disorders	2	0.2%	380	0.8%
Combined diagnosis	103	11.6%	1,005	2.0%
Total psychiatric diagnosis	**288**	**32.4%**	**8,351**	**17.0%**
Total patients	**890**	**100%**	**49,079**	**100%**

Frequency of different free flaps for head and neck reconstruction and their outcome

Dr F Buriro, Dr M Nizam
Patel Hospital

Objective

To determine the frequency of different free flaps for head and neck reconstruction and their outcome

Background

Microvascular free-tissue transfer to the head and neck has become most popular method of reconstruction because superior functional and cosmetic results. There are many different free flaps used depending on the recipient defect and surgeon's preferences. We report our experience of 110 microvascular free flaps, performed between July 2011 to June 2015.

Setting

Plastic and Reconstructive Surgery Department, Patel Hospital, Karachi

Material and Methods
110 patients with different head and neck cancer who underwent reconstruction with free tissue transfer were evaluated. Most of the free flaps performed for squamous carcinoma of the cheek, with or without bony involvement. There were 93 free flaps for soft tissue reconstruction and 17 for bony reconstruction.

Results
The most common free flap performed was the anterolateral flap (n: 50) followed by radial forearm flap (n: 43) and free fibular flap (n: 17). An overall success rate of 93.67% for free-tissue transfer was reported. Radial forearm was most common flap for tongue reconstruction and anterolateral thigh flap for cheek and other larger defects while fibular free flap was commonly used for bony reconstruction.

Donor and recipient site complications, including flap failures and anastomotic revisions, are analyzed in detail with respect to age, radiation status, donor site, and primary or recurrent neoplasm.

Conclusion
Different microvascular free flaps used in head and neck reconstruction depends on the type, size and composition of defect and surgeon's preference and expertise. The anterolateral thigh flap has become the most popular free flap for a variety of defects.

Success, failures and problems in the management of post burn contractures

Dr F Buriro, Dr M Nizam
Patel Hospital

Post burn contractures are common and very frustrating sequel of burn injury affecting form and function. There are various methods to treat contractures depends on type of contracture and donor site availability. The author evaluated her experience of managing post burn contracture in her unit and shares her experience in terms of success, failure and problems.

A retrospective study was carried out to evaluate release of contracture cases in the Burns and Plastic Surgery Unit, Patel Hospital from January 2011 to October 2014. Information was obtained about age of patient, type of burn, region and type of contracture, type of release, initial and late outcome and recurrence.

A total of 65 patients underwent release of contractures. Age ranged from 6 months to 53 years. 43 patients were in the under 18 age group. The most common reason for a burn was fire.

Split thickness skin grafts were used in 30 patients and full-thickness skin grafts in 26 patients, z plasties in 14 patients and loco-regional flap in 4 patients. The initial result was good in 61 patients. Two patients had partial graft loss and one had complete graft loss. Late result was good in 40 patients; 17 patients had no follow up record. Ten patients developed recurrence, among them 9 were treated with STSG and one with FTSG, two of them had good result after repeat surgery. Good results were

observed in patients treated with FTSG and flap and also in those patients treated with STSG who followed use of splints and physiotherapy. Lack of follow up and lack of compliance is found to be most common problem in management.

Paediatrics post burn contracture are difficult in terms of post operative therapy. We found that donor area availability is major limitation of not doing flap coverage.

Results of an audit leading to the design of a new UK-wide trial (Rational MCC) comparing surgery versus radiotherapy as first definitive treatment for primary Merkel cell carcinoma

Mr O Cassell, Mr M Moncrieff, Dr C Corner, Dr P Lawton, Dr C Yap, Professor C Harwood, Dr R Blundred, Mr S Rodwell, Dr N Steven
Oxford University Hospitals NHS Trust

Merkel cell carcinoma (MCC) is a rare locally invasive skin cancer with high metastatic potential. Lack of trials results in weak evidence guiding clinical practice. Data for 49 consecutive recent patients across three UK sites indicated diverse surgical margin size and use of radiotherapy for primary MCC, not explained simply by primary site or size. A survey of UK centres showed divergent current use of sentinel lymph node biopsy (SLNB - 11/28). The data suggested both prospective planned data collection and comparative trials might influence rational clinical decision-making.

Rational MCC is a UK-wide, multi-centre trial opening in 2016, for patients presenting with primary MCC. First definitive treatment for the primary is randomised between (A) WLE, permitting subsequent adjuvant radiotherapy, versus (B) earlier use of radical radiotherapy to encompass an equivalent treatment volume. Centres may offer SLNB during staging. The primary outcome measurement is time to loco-regional progression, assessed by 3-monthly clinical assessment, symptom-directed imaging and scans at 12 and 24 months. QOL is a key secondary outcome measurement. The trial for eligible patients sits within a wider tissue and data collection for all new patients with MCC.

This paper will present the results of the preliminary audit. It will explain this pragmatic inclusive trial, designed to maximise recruitment, and the methodology supporting a randomised trial in a rare cancer population.

Plastic Surgery interventions for children with severe sepsis on PICU presenting with streptococcal infection and or varicella zoster

Miss Y Cemal, Miss K Ford, Miss L Cooper, Mr D Yue, Miss N Timoney, Dr A Nyman, Miss A Greig
Guys and St Thomas' NHS Trust

Introduction and Aims
1000 children are admitted to Paediatric Intensive Care Units (PICU) with severe sepsis annually in the UK.

Material and Methods
A retrospective audit identified admissions to our PICU with severe sepsis, under age 16, from 2000-2014, requiring Plastic Surgery review. Outcomes of sepsis caused by Beta-haemolytic Group A Streptococcus (GAS), Group B Streptococcus, Streptococcus pneumoniae, Varicella zoster only and Varicella zoster secondarily infected with GAS were compared.

Key Results
773 children were admitted to PICU between 2000-2014. 75 had sepsis caused by the organisms studied. 36/75 patients (48%) had Group B Streptococcus with 10 deaths, but no referrals to Plastics. 21/75 (28%) were referred to Plastic Surgery; 38% were treated conservatively and 62% required surgery. Of these 21 patients, 5 had GAS with 1 death, 3 had Streptococcus pneumoniae with 1 death, 4 had Varicella only with no deaths, 9 had GAS plus Varicella with no deaths. A one-way ANOVA showed patients with GAS plus Varicella had a statistically significant increased length of stay on PICU compared to patients with Varicella only (p=0.008). There was no significant difference in number of procedures by organism

(F=0.4955, p=0.6902) or percentage skin loss by organism (F=2.78, p=0.0723).

Conclusions
GAS was the commonest organism. Streptococcus pneumoniae was least common, but caused the most severe sepsis and most skin loss (<54% TBSA). When Varicella zoster patients had secondar infection with GAS, 7/9 (78%) developed necrotizing fasciitis. We advocate for routine vaccination against Varicella zoster for UK newborns, and for development of vaccines against Beta-haemolytic Group A Streptococcus.

Five-year experience on setup and development of a wrist surgery service

Miss S Cerovac

St George's Hospital

This study presents 5-year experience with novel wrist service within the Plastic Surgery department delivered by a single consultant.

Between 2009-2014, 468 patients were treated for variety of carpal pathologies which required subspecialist expertise not commonly available within our departments.

Case mix analysis revealed that the commonest referrals were for the carpal arthritis (21%) followed by scaphoid pathology (16%), triangular fibrocartilage abnormalities (12%), intracarpal ligaments tears (11%), ulno-carpal abutment (11%), tendinopathies (8%), perilunate dislocations (5%) etc. 333 patients (78%) have been managed surgically and 15% by conservative means only. Wrist arthroscopy was indicated in 106 patients. Outcome measures recorded at the average follow up of 9 months involved pain level, grip and pinch strength, DASH score and patient satisfaction before and after treatments. There were no significant complications and minor ones recorded in 1.9% of patients.

Challenges of the service setup are presented, changes in referral patterns as the service developed, instrumentation required and cost analysis which revealed departmental annual profitability in excess of £80,000 which continues to rise. Training opportunities are discussed aiming to inspire younger colleagues to consider adding wrist surgery expertise to their generic Plastic Surgery skills and tackle challenges of this fascinating sub-speciality.

Breform pre-shaped polyester mesh – extending its use into cancer patients

Mr C Chan, Mr J Bristol, Mr D Humzah, Miss F Court
Nuffield Health Cheltenham Hospital

Introduction
Breform mesh is used to prevent repeat ptosis after breast reduction/mastopexy. There has been little reported use of this surgical support in breast cancer patients.

Methods
We started using Breform in breast-cancer patients in 2012. This is a retrospective review of our experience with Breform, examining indications, complications, technique, and importantly, surveillance imaging.

Results
Since 2011, we have inserted a total of 61 Breform meshes in 36 women (age 32 – 75); 25 had cosmetic surgery and 11 had breast cancer.Ten breast cancer women had Breform for contralateral symmetry procedures - 7 synchronously with therapeutic mammoplasty and 3 delayed procedures after mastectomy and reconstruction.One had Breform for reconstruction salvage, following implant herniation through a LD flap.

0/11 cancer patients had significant complications. Importantly, 0/7 primary cases experienced any delay in the delivery of adjuvant chemotherapy/radiotherapy. 1/7 of the primary cases had an incidental occult tumour in the normal contralateral breast tissue (removed with clear margins) in the Breform reduction. After MDT discussion, she had adjuvant DXR with the mesh left in situ with no complications either during DXR or at 1 yr follow-up.

Surveillance imaging with mammography and US is unaffected by the Breform. Core biopsy has been performed ontwo patients through the mesh with no complications.

Conclusion
Our early experience suggests that Breform is a suitable option for selected breast cancer cases with a low complication rate. It does not interfere with surveillance imaging and core biopsy can be performed safely subsequently. This has important implications also for the long-term safety of Breform inserted in aesthetic patients.

Current commissioning for aesthetic procedures in NHS England by Clinical Commissioning Groups: what has changed?

Miss W Chow, Mr A Soueid, Mr K Kok, Mr R Nassab

Countess of Chester Hospital NHS Foundation Trust

Introduction
Funding for aesthetic procedures in the NHS has sometimes been regarded as a "postcode lottery", and the introduction of Clinical Commissioning Groups (CCGs) on 1 April 2013 may have further affected the geographical variation in funding across England. The aim of this study was to evaluate any changes in the provision of aesthetic procedures since the introduction of the CCGs.

Methods
The eligibility criteria for aesthetic procedures such as abdominoplasty, breast reduction, breast augmentation, mastopexy, blepharoplasty, facelift, rhinoplasty, pinnaplasty and gynaecomastia surgery from 205 CCGs in NHS England were reviewed. These data were compared against previously published Primary Care Trust (PCT) funding criteria.

Results
Data were available from 189 of 205 (90.4%) CCGs in England. There was a significant reduction in funding for most aesthetic procedures funded by CCGs compared to PCTs such as in abdominoplasty (60%, 62%), bilateral breast reduction (71%, 74%), breast augmentation (55%, 64%), mastopexy (22%, 44%), facelift (42%, 62%), pinnaplasty (60%, 66%) and gynaecomastic surgery (42%, 60%). In particular, criteria for abdominoplasty were much stricter under current CCG than previous PCT criteria, with 56% CCGs specified the BMI criteria compared to 31% PCTs.

Conclusion
This study demonstrates a reduction in aesthetic procedures funded in the NHS by CCGs compared to PCTs, as patients are now required to meet stricter eligibility criteria. The decrease in the numbers of aesthetic procedures performed in the NHS may result in fewer training opportunities in aesthetic procedures for plastic surgery trainees in future years.

Outcome of patients with Pierre Robin sequence: the Australian Craniofacial Unit experience

Mr S Chummun, Mr N R McLean, Mr W Flapper, Mr M H Moore, Professor P A Anderson, Professor D J David
Australian Craniofacial Unit

Aim

This study reviewed the outcome of patients with Pierre Robin sequence (PRS) managed at the Australian Craniofacial Unit (ACFU). A diagnosis of PRS was made if the patient presented with micrognathia, glossoptosis with/without cleft palate and respiratory impairment.

Methods

Patients with PRS were identified from the ACFU database. Their cases notes were reviewed and data was collected on outcomes.

Results

72 patients (32 males versus 40 females) were identified, with a median age of3 months (range: 1 day-44 years). 64 patients had a cleft palate; 3 had a normal palate and 5 patients were referred after palate repair. All 72 patients had respiratory impairment. PRS was part of various syndromes, the commonest being Stickler syndrome (4). Forty-nine patients had impaired hearing. 6 patients had impaired vision.

Median age at surgery was 12 months (range: 2-576 months). Median follow-up time was 78 months (1 month- 20 years). 56 patients underwent a Veau-Wardill-Kilner palate repair, 4 patients had an intravelar veloplasty, 3 patients had a von Langenbeck repair and 1 patient had a Furlow repair. 2 patients required fistula repair. 20 patients developed velopharyngeal insufficiency, and 9 required surgery

21 patients needed a nasopharyngeal airway and 9 patients needed CPAP. 4 patients required a tracheostomy because of severe respiratory distress. Only 2 patients required mandibular distraction. 21 patients had class 2 and 6 patients had class 3 malocclusions. 8 patients underwent orthognathic surgery.

Conclusion

Patients with PRS should be managed within a multidisciplinary setting. Impaired breathing is a prominent feature and needs to be addressed appropriately. Mandibular distraction was only used in two in-extremis cases.

The attitude to procedure specific consent forms in plastic surgery: a national survey

Miss L Cooper, Mr A Mosahebi, Mr M Henley, Mr A Pandya, Mr M Cadier, Mr N Mercer, Mr C Nduka

Queen Victoria Hospital

Introduction and Aims

A leading reason for successful litigation claims against Plastic Surgeons is inadequate consent. Procedure-specific consent forms (PSCFs) may improve information provision and communication, and make consent documentation more robust. This study aimed to canvas consultant opinion regarding the use of PSCFs in plastic surgery in the UK.

Method

An anonymous, online survey was sent to all consultant members of BAAPS in August 2015 regarding PSCFs in plastic surgery. Three questions were asked:

1. Do you think that PSCFs in plastic surgery are a good idea?
2. If there was an association approved consent form available, would you use it?
3. If there was an association approved consent form available, would you want your juniors to use it?

Free text boxes were provided for comments.

Results

91 of 190 consultants replied, a 48% response rate. 96% thought PSCFs in plastic surgery were a good idea, and 93% (n=85) would use an association-approved form. 89% (n=81) would like their juniors to use one. Free text responses focussed on: effects on indemnity (36.5%), consent content and layout (23%), effective utilisation of consent forms (21.1%), customisation (13.4%), availability and distribution (9.6%), information leaflets (9.6%), potential for collaboration (9.6%) and other (1.9%).

Conclusion

In the current ethical and legal climate hand-written, non-standardised consent forms are not sufficiently robust to protect Plastic Surgeons or their patients. Association-endorsed PSCFs and information leaflets may provide an effective and consistent way of informing patients, and would be welcome in UK plastic surgery. Issues include readability, medicolegal screening, availability, and the potential to customise PCSFs.

The evidence for dangling after free flap reconstruction of the lower limb: a review of the literature

Miss L Cooper, Mr J McGhee, Mr K Orkar, Miss L Harry, Ms T Cubison
Queen Victoria Hospital

Introduction and Aims
Dangling regimes after free flap surgery to the lower limb vary between centres and clinicians. There is currently no accepted gold standard. This review examines the evidence for early versus late post-operative dangling after free flap reconstruction of the lower limb. The secondary aim is to evaluate the regimes used.

Material and Methods
Medline, Embase and Cochrane library were searched for all articles on dangling or rehabilitation after free flap reconstruction in the lower limb (December 2015). All studies outlining a clear dangling regime were included. Data were extracted by two authors independently and analysed using the software package Review Manager (RevMan 5). Two authors were contacted for further information.

Results
197 patients were included from 8 studies: 1 randomised, 6 cohort and 1 case-series. Although some studies did not state the aetiology, of those that did, 36% were oncology, 40% were trauma, 23% complex wounds and 1% infection. The majority of flaps were latissimus dorsi,18% parascapular,15% anterolateral thigh, 6% rectus abdominis and 1% other.53% of patients dangled on post-operative day (POD) 7, 29% on day 6, 4% on day 5 and 13% on day 3, with varying regimes. A meta-analysis of comparable studies showed circulatory benefit after 4 days of dangling using tissue oxygen saturation as a measure. Four flap failures (2.0%) were reported.

Conclusions
There is physiological benefit in post-operative dangling. A 4-day flap training regime is sufficient for physiological training. However, the optimal flap training regime remains unclear. It may be appropriate to start dangling as early as POD 3. More research is needed to determine the optimal time to start dangling and the regime.

The John Potter Lecture- Removing the stigmata of the cleft

Professor D David
Australian Craniofacial Unit

The cleft lip and palate service provided by the Australian Craniofacial Unit has been based on protocol management and protocol development for forty years. A series of papers has been published presenting the results from using the same protocol and the same surgeon, but measured at maturity. It has long been the author's view that there are many factors contributing to the stigmata associated with facial clefting, not all of which receive due consideration.

This presentation briefly revisits the pathologies and pathogeneses of these conditions as they provide a significant pointer to future problems. The damage to and deficiency of neural crest cells, the theories of the functional matrix (Moss), together with the complex changes that take place twixt birth and maturity make for the stigmata both physical and functional that brand the cleft patient.

In dealing with the strategies used to minimise the functional and physical stigmata of "the cleft" I will refer mostly to the condition of cleft lip and palate unilateral and bilateral, with some additional reference to isolated cleft palate and the rarer clefts.

The facial fracture service- Royal Adelaide Hospital/Women's and Children's Hospital South Australia

Professor D David
Australian Craniofacial Unit

It is widely accepted that the management of facial trauma (craniomaxillofacial trauma) had its origins in modern times during WW1. The multidisciplinary nature of the endeavour is possibly not as widely known, and as time has passed the structures and disciplines from both sides of the trenches have been developed and absorbed into regular practise.

There now exists a facial fracture service at the Royal Adelaide Hospital that involves Plastic surgery, Oral and Maxillofacial surgery and the Australian Craniofacial unit.

This presentation describes some of the history of the development of the service, it structure and function and the positive advantages to all the disciplines involved with respect to teaching and education.

The central mechanism for sustaining the service is a bi-monthly audit of all cases which provides the data for outcome measurement and protocol development

"Picturing Plastic Surgery". A visual-based smart phone app designed to serve Plastic Surgery trainees

Mr J Dickson
Queen Elizabeth Hospital

Introduction

It is becoming increasingly difficult to teach and learn the skills required to achieve excellence in surgery. Trainees require innovative training aids to ensure that quality and standards continue to rise. Well established learning styles exist, eg visual, auditory, kinaesthetic etc. By understanding and targeting these styles, learning can be enhanced.

Method
A smart-phone app is presented that has been designed to serve trainees who favour visual learning. It is portable offering easy access as and when required. The illustrations have been created based on key principles. Each topic is confined to a single page. The images are colourful, peculiar and associative to enhance learning and make the content more memorable. The user is presented with an unlabelled image first and can then choose to add the labels. This makes the image more interactive and challenges to user to try to understand the diagram without the help of the text explanation. It also enables self-testing and again helps improve recall.

Results
Representative examples are presented. Topics covered include syndrome patterns, history and clinical examination skills, anatomy and classification systems.

Conclusions
When learning to be a surgeon, there is no substitute for experience and practice. However, adjuncts and tools may help trainees by enabling a strong knowledge base with accurate, rapid recall of key facts both in the short and long term. The Plastic Surgery syllabus is broad and challenging. Plastic Surgeons may well not use all of their knowledge regularly and so require tools that enhance long term recall, especially in relation to managing emergencies. For those trainees who are visual learners, diagrams such as these, may prove invaluable.

Choosing the right tool for burns debridement: a systematic review of the evidence

Miss S Edmondson, Miss S Elamin, Dr I Ali, Miss A Murray
Stoke Mandeville Hospital

Introduction and Aim
Determining the most appropriate debridement method for an acute burn injury is an ongoing challenge for the burns surgeon, due to the individual nature of burns in their causation, presentation and evolution, and the wide range of debridement methods and tools available. Our aim is to provide an up-to-date evidence basis for approaches to burns debridement with a logical algorithm, following a systematic review of the literature.

Methods
The following databases were searched for relevant RCTs: CENTRAL (via Cochrane Library), EMBASE (via Ovid 1974-2015), MEDLINE (via pubmed 1946-2015). Keywords included: Surgical (Watson/Weck/Goullian); Enzymatic; Molecular; Autolytic, Hydro/Versajet, Maggot and Laser debridement. In vitro and burn non-specific studies were excluded. Data from eligible articles was extracted and summarised by two authors.

Results
32 articles met our inclusion criteria (n =7148). Enzymatic debridement (Nexobrid /DGD) and Versajet

were favoured RCT subjects. They significantly decreased the need for excisional debridement and skin grafting by preservation of viable tissue allowing spontaneous healing by epithelialisation. Level V-II evidence was also reviewed to assist algorithm development.

Conclusion

Level 1 evidence comparing debridement modalities for burns is sparse. Although early excision and grafting is still often considered best practice, there is no consensus regarding choice of tool or robust comparison with alternate tools that may facillitate dermal preservation. Enzymatic/Versajet should be considered as adjunct/alternative. Our algorithm aims to guide debridement tool choice in the absence of consensus within the evidence, but further RCTs are indicated

A single centre study into morbidity and mortality with lymph node clearance in skin malignancies

Mr A Elfaki, Dr S Ramadan, Mr N Mopuri, Mr P Dziewulski, Mr N El-Muttardi
Broomfield Hospital

Introduction

Lymph node dissection (LND) aims to prevent and control regional spread of cutaneous malignancies but is associated with significant morbidity. The aim of this single-centre retrospective study was to analyse the morbidity and mortality associated with open LND for patients with squamous cell carcinoma (SCC), malignant melanoma (MM) or Merkel cell carcinoma (MCC).

Method

Between 2012and 2014, 80 patients (male:female, 48:32) underwent 89 open LND (axillary n=47, neck n=10, groin n=32) for cutaneous SCC (n=6), MM (n=68) or MCC (n=4). Lymph node involvement was diagnosed either clinically (41%) or by sentinel lymph node biopsy (SLNB, 32%).

Results

Post-operative complications occurred in 65% and include seroma formation (47%), haematoma (10%), lymphoedema (17%), wound infection (17%) and neurovascular injury (4%). Hospital stay ranged from 1-42 days (mean and median =5). The complication rate in axillary, groin and neck dissections were 44%, 38% and 11% respectively. Re-admission and return to theatre rates were 16%. Recurrence was classified as local, regional or metastatic and the rates were 6%, 6% and 23% respectively. Mortality was 6% and the mean survival rate was 6.7 years.

Conclusion

Complications following LND are common, and patients should receive sufficient pre-operative counselling. Our data falls in line with existing literature.

Sustainable hospital burns education in Northern Tanzania

Mr M Farid, Dr E Manjira, Mr J Rawlins
East and North Hertfordshire NHS Trust

Introduction
Burns education had been a crucial part to prevent potential morbidities and mortalities. There were no organised training programmes for acute burns care in Tanzania. This had significant implications in delivering a safe standard of surgical care for such injuries. The aim of our international team visit was to deliver a comprehensive and interactive educational programme for the multi-disciplinary team in Kilimanjaro Christian Medical Centre (KCMC), northern Tanzania.

Methods
A detailed programme covering all aspects of burns care was delivered over a ten day period for three consecutive years. This covered daily burns ward rounds, hospital grand round teaching, theatre training sessions for junior doctors, peripheral village visits, psychology seminars, one-one nursing sessions and a whole day of regional teaching symposium.

Results
A successful introduction of the World Health Organisation (WHO) checklist was one of the objectives achieved for intra-operative burns. The use of Parkland's formula was populated for resuscitation burns in intensive care unit. The physiotherapy team reviewed patients for rehabilitation to prevent stiffness and contractures. Overall, we enabled safe surgical practice for burns care in the acute setting. One of the recent achievements was the building of a new burns unit in KCMC, Tanzania.

Conclusion
The delivery of an educational programme in sub-Saharan Africa was challenging due to differing cultural, infrastructural and training issues. The future is to equip the burns unit with trained staff and medical supplies dedicated for the whole region. Burns education is ultimately a continuous process with a multi-disciplinary team input for safe surgical care.

Patterns of injury in recurrent non-suicidal self burn injury patients: are they site specific?

Miss V Harries, Miss N Wielogorska, Dr D Gearon, Mr B Dheansa
Queen Victoria Hospital

Introduction and Aims
Recurrent non-suicidal self-burn injuries (RNSSBIs) represent a complex spectrum of burns. The purpose of this study was to determine patterns of injury in RNSSBI and trends in harming sites, patient demographics and mental health status. We also aimed to assess the impact these patients had on our burns service and resources.

Method
RNSSBI patients that presented more than once between 1 January 2014and 31 March 2015 were identified and included in the study. Retrospective data was then collected to give a longitudinal view of the cohort group.

Results
11 adult patients (mean age = 36, F = 10, M = 1) with RNSSBI were included in this study. For each patient, there was an average of 5 new burn referrals (range = 2-9 referrals, total = 51 referrals) and an average of 6 new burn injuries (range = 2-12 burn injuries, total = 69 burn injuries). RNSSBI patients accounted for 4.8% (total = 51) of new burn referrals and 17% (total = 133) of inpatient admissions during this period. On average, 30 follow up appointments (range = 2 – 52) were required for each patient.

33% of patients performed an RNSSBI over previous burn site and 5% of burns were over an area of previous reconstruction. 82% of patients performed an RNSSBI over a previous burn site or area of previous reconstruction at least once.

Conclusion
Despite RNSSBIs most commonly affecting <1% TBSA with each injury, these patients frequently re-attend and demand a high proportion of hospital admissions and follow up appointments. This study provides evidence that RNSSBI patients have a tendency to be site specific: previous burn sites are not spared. Given the patterns of injury and demand on resources, this work contributes to the discussion of how to manage this complex group of patients.

Lotus petal flap and combined laser therapy in difficult pilonidal sinus management

Mrs K Hamnett, Ms M Nagarajan, Mr A Iqbal, Ms J McPhail
Whiston Hospital

Aim
To assess the efficacy of the lotus petal flap in difficult pilonidal sinus management

Background
Pilonidal sinuses may be difficult to treat. Five-year recurrence rates range from 18-50%. Recurrence rates fall with primary closure rather than healing by secondary intention. Techniques such as z-plasty, however, distort natural architecture. The lotus petal flap taken from the superior buttock fills dead space whilst conforming to the natural concave appearance of the natal cleft. The contralateral buttock is spared. It is straightforward and reproducible. Multiple perforators make it robust and promote wound healing in this difficult group.

Method
We present a case series of 25 patients who had a lotus petal flap reconstruction following pilonidal sinus excision between 2007 and 2015. The majority of these patients had previous multiple failed attempts at eradication. Recurrence rates, reoperation rates, time for complete healing, wound breakdown, discharge, infection, cosmesis and patient comfort were assessed. The prognosis of those requiring laser hair removal was also assessed.

Results
The majority of patients had coarse hair felt to predispose to recurrence of symptoms, poor hygiene and prolonged wound healing. 20% of patients underwent Alexandrite laser with a 755nm wavelength for a minimum of 6 treatments. There was excellent patient compliance and good patient outcome. Overall only 8% had prolonged wound healing and recurrence rates were lower than expected.

Conclusion
The lotus petal flap is an excellent choice for problematic pilonidal sinus reconstruction. When combined with tumour-like excision, meticulous surgical technique and complimentary laser hair removal results can be improved further.

Intralesional cryosurgery for the treatment of hypertrophic scars and keloids: an evidence based new and novel technology

Professor Y Har-Shai, Dr B Tunner
Carmel Medical Center

A novel cryoneedle (CryoShape, Etgar Group Ltd, Israel) is inserted into the core of the hypertrophic scar and keloid (HSK). It is connected to a liquid nitrogen canister, which causes the cryoprobe to freeze thereby freezing the HSK from the inside out. This technology has been applied on patients suffering from HSK following trauma, surgery, burns, piercing, acne and other. The scars were evaluated for volume reduction. Objective (hardness and color) and subjective clinical symptoms (pain/tenderness and itchiness/discomfort) were documented pre- and post- cryosurgery. Pre- and post-treatment biopsies were taken for histo-morphometric studies for collagen structure. Surface thermal behaviour was measured by thermocouples.

A significant long hold time was recognized. The histomorphometric analysis demonstrated collagen rejuvenation of the treated scars. For ear HSK, scar volume reduction of 67% was achieved following a single cryo-session; on the chest 50%; upper back and shoulders 60%. 3% of scars did not respond. During the follow-up period significant alleviation of objective and subjective clinical symptoms was achieved. No worsening or infection of the HSK was noticed and only minimal hypopigmentation was documented.

This simple-to-operate technology can be applied as an office procedure, is safe, cost-effective, and possesses a short learning curve

Efficacy and safety of botulinum toxin in enhancing facial surgical scar cosmesis: a meta-analysis of randomised controlled trials

Dr O Hausien, Dr M Aqeel, Mr A Durrani, Dr H Cheng
Peterborough City Hospital

Introduction
Scar cosmesis for healing surgical wounds crossing the tension lines of the face can be especially challenging. A potential solution is the chemo-immobilisation of tension-producing muscles around the wound, allowing immature collagen fibres to mature under minimal tension. We performed this study to investigate the effectiveness and safety of the use of Botulinum Toxin A (BTA) for this purpose.

Methods
PubMed, Embase, the Cochrane Library, Scopus, and the ClinicalTrials.gov registry were searched for randomised control trials (RCTs) up to December 2015 using selected key words. The primary outcome measure was the visual analogue scale (VAS). Themethodological quality of the included studies was assessed independently. The RCTs were meta-analysed to obtain the pooled mean difference in VAS scores.

Results
We reviewed three RCTs with 141 patients. A fourth RCT was excluded due to insufficient raw data. The meta-analysis included 71 patients randomised to receive BTA treatment and 70 patients in the control group. The VAS score was significantly increased in the experimental group (weighted mean difference 1.36; 95% confidence interval: 1.08 – 1.65) postoperatively. Two adverse outcomes were identified in the BTA group; skin ischaemia at the extremity of a sutured skin flap (day 7), and an asymmetrical smile (despite bilateral BTA injection in anticipation) (day 7). No adverse outcomes were reported in the control group.

Conclusion
The results implicate the safe and effective use of BTA for the chemo-immobilisation of healing facial wounds under tension when compared using the VAS score. Further studies including patient reported outcome measures are required.

The correlation between body mass index (BMI), timing of surgery, and perioperative morbidity in free flap breast reconstruction: defining a BMI threshold to assist decision-making

Miss S Hendrickson, Miss M Moustaki, Ms C Lankage, Mr J Constantinides, Mr D Ross, Miss P Mohanna, Mr M Ho-Asjoe, Mr J Farhadi, Mr P Roblin
Guy's & St. Thomas' Hospital

Introduction
Obese patients undergoing autologous free flap breast reconstruction are reported to have a higher risk of complications. We aimed to quantify the association between BMI and perioperative morbidity in immediate and delayed free flap breast reconstruction and to determine a BMI threshold above which the risk of overall complications is increased.

Methods
All patients who underwent free flap breast reconstruction by the senior authors over a 6-year period were retrospectively identified. Demographics (including BMI, smoking status, and timing of reconstruction) and complications were recorded. A multivariable logistic regression analysis was performed.

Results
427 women who underwent 494 free flap breast reconstructions (74% immediate, 26% delayed) were included. The mean BMI was 29.2 kg/m^2 (18.8 – 45.3 kg/m^2). BMI and timing of reconstruction were both significantly associated with overall perioperative complications rates ($p<0.05$). In immediate reconstructions, the risk of suffering any complication was greater than 50% in patients with BMI›34 kg/m^2. When controlling for BMI, the risk of any complication was 41% less in those undergoing delayed reconstruction ($p=0.04$).

Conclusion
Increased BMI is a significant risk factor for perioperative morbidity in free flap breast reconstruction. The identification of a discrete BMI threshold value in immediate reconstructions above which complications are more likely to occur than not allows surgeons to provide patients with practical information about the level of risk. In this patient population, delayed autologous reconstruction can be offered as an alternative, lower-risk approach.

Adhesive tapes versus tissue glue in wound closure: should they meet together?

Ms L Heskin
Mater Hospital Dublin/ RCSI

Introduction and Aims
A method of wound closure must ensure a strong hold on the wound edges for the healing period and achieve accurate opposition of the wound edges. Although tissue glue has excellent secure adhesive properties it can be difficult to handle in cosmetically sensitive areas such as the face. This study aims to address this issue and compare the tensile strength of wound closure methods using glue, steristrips and a combination of both.

Material and Methods
Five different methods of wound closure (n=10 per group) were assessed using a porcine model and an Instron tensiometer®.

Method 1: 3mm steristrips applied at 3mm intervals
Method 2: 6mm steristrips applied at 6mm intervals
Method 3: glue applied alone
Method 4: 3mm steristrips at 3mm intervals and glue in the gaps between
Method 5: 6mm steristrips at 6mm intervals and glue in the gaps between

We examined the maximum breaking point load for each method of skin closure.

Key results
We found that steristrips aid the precision of the use of glue in accurate wound edge apposition. The results showed a maximum breaking point load of 7.6, 11.4, 21.1, 13.37 and 17.14 respectively for each of the five methods.

The use of the 6mm of adhesive tape combined with 6mm of glue offers superior adhesive properties (p=0.69) than the smaller strips (p=0.10).

Conclusion
We recommend using a combination of both glue and steristrips to ensure the most even wound apposition possible with a high tensile strength.

An analysis of the operative experience of plastic surgery trainees in the United Kingdom using the web-based eLogbook: etablishing an evidence base to set operative standards and enhance training

Miss L Highton, Mr R I S Winterton, Mr A Lamb, Mr A Fitzgerald, Mr S Wood
Wythenshawe Hospital

Introduction
Since 2009 it has been mandatory for plastic surgery trainees to record their operative experience using eLogbook, a secure web-based database provided by the Royal College of Surgeons of Edinburgh. Along with WBAs and supervisor reports, the surgical logbook reflects a trainee's operative experience and progression and is reviewed at ARCP and CCT.

Methods
We performed a comprehensive retrospective analysis of the operative experience of all UK plastic surgery specialty registrars, using data from eLogbook for the period 2010 and 2014. The data was stratified according to grade (ST3 – ST8), supervision level and whether procedures were elective or emergency. The data was analysed using SPSS to calculate weighted means and standard deviations. The output was used to formulate national annual averages and cumulative performance charts to showcase the acquisition of operative experience during training.

Results
The eLogbook data of 336 registrars between 2010-2014 was analysed. During their given six-year

training programme, trainees participated in a mean of 2117 procedures, performing an average of 1571 procedures. Data for the established seven elective and seven trauma index domains were analysed and the indicative numbers required prior to CCT have been updated in consultation with the SAC.

Conclusion

The eLogbook provides invaluable data regarding the operative experience of trainees. The data has been used to update the indicative numbers of index procedures for award of CCT, and those new numbers are discussed. Furthermore, both trainees and trainers may use the data to monitor the acquisition of operative experience to target training or offer additional support where necessary.

Importance of information leaflets for trauma patients in Plastic Surgery

Mr M Mozaffor Hosain, Mr A Yousif, Dr R ul Haque, Ms J Dunlop, Mr I Taggart
Glasgow Royal Infirmary

Introduction

Trauma services are the core part of Plastic Surgery in NHS Hospitals. Our efforts are centralised to improve the trauma services for our patient's satisfaction. We use information leaflets for our different categories of patients, for example skin cancer/breast reconstruction etc. Introducing a leaflet for trauma patients will help to improve services and patients satisfaction.

Aims

- To find out the weakness of communication and information given to trauma patients.
- To find out the importance of introducing a information leaflet for trauma patients.
- To introduce a comprehensive trauma leaflet.

Materials and Methods

This is a prospective study. Sixty-two trauma patients were interviewed with a predesigned questionnaire in the Canniesburn Plastic Surgery Unit from May 2015 to August 2015. Data was collected and analysed using a computerised spread sheet.

Results

Among 62 patients 13% answered no for information about arrival time. 19% were not informed where to come. Although 63% of patients got proper information about anaesthesia, 10% of them weren't. 73% got clear instructions about fasting. 45% of them were not aware about their waiting time. 19% of patients said they weren't informed about delay or cancellation. Only 15% patients were informed about a contact number where they can call if they have any queries or concerns. Nearly half of the patients weren't informed about possible discharge planning, for example day case/ need to stay overnight or more than that. Only 31% of patients got information about pre-op and post-op possible precautions, and 88% feel an importance of a leaflet.

Conclusion
This study shows that, an information leaflet is necessary for trauma patients to have and retain all of the information related to their care.

Paradoxical frontalis activation: an under-recognised consequence of facial palsy

Mr C Izard
Queen Victoria Hospital

Introduction and Aims
Aberrant reinnervation and synkinesis is common and debilitating after facial palsy. Paradoxical frontalis activation can antagonise eye closure and increase the risk of corneal damage. If recognised, judicious botulinum toxin injection to the affected side may reduce this risk.

Material and Methods
100consecutive patients with synkinesis were identified from a prospective database. Routine facial view photographs were converted to a standardised scale using iris diameter. The vertical distance from the midpoint of the inter-canthal line to the inferior border of the eyebrow (MCE distance) was measured bilaterally. $p<.05$ was taken as significant.

Results
82 patients were included, with a median age of 44 years (IQR 33-59) and 59 female. The commonest aetiology was idiopathic (n=55). The median time since onset of palsy was 13 months (IQR 6.5-27 months). There was less MCE excursion on the synkinetic side of the face (two tailed, unpaired t test; $p<.001$). 22 patients (27%) displayed paradoxical frontalis movement on the affected side of their face, with increased MCE distance (eyebrow raise) when attempting eye closure compared to attempted eyebrow raise (Friedman test, $p=.027$).

Conclusion
Frontalis overactivity may have functional and cosmetic implications for patients. Appropriate assessment and intervention with botulinum toxin may provide symptomatic relief, and enhance rehabilitation and recovery. A treatment algorithm is presented and discussed.

Photogrammetric measurement of smile excursion for automatic smartphone facial grading

Miss V Harries, Mr C Izard, Miss L Cooper, Mr A Thomas, Mr A Cleal, Mr C Nduka
Queen Victoria Hospital

Introduction and Aims
A portable, truly objective measurement of facial expressions would be invaluable for facial palsy

treatment. We have developed an app to simultaneously track 70 landmarks in real time for facial movement monitoring.

Our aim was to investigate whether a subset of measurements can objectively measure smile function using defined landmarks: 1) the angle between the commissure, contralateral commissure and ipsilateral endocanthion (CCE angle), 2) the visible eye surface area (ESA) and 3) the midline to commissure distance (MCD). We also investigated whether the ratio between smile excursion and eye closure, could be sensitive enough to objectively measure smile quality.

Method
One hundred patients attending clinic were randomly selected for facial imaging. Repose, closed smile and open smile positions were digitally captured, and scaled. The CCE angle, ESA and MCD were measured in pixels using ImageJ software and CCE:ESA and CCE:MCD ratios calculated. Statistical analysis was performed using Prism (2015). ANOVA test was used to compare groups with $p<.05$ taken as significant.

Results
Some 574 measurements were taken from 82 eligible patients, We found a 33% narrowing in the palpebral aperture as subjects went from repose to open smiling. There was a statistical difference (*$p= 0.026$)* in CCE angle between repose (median 82.3, IQR 80.4-84.1), closed smiling (median 78.1, IQR 76.0-81.1) and open smiling (median 74.4, IQR 72.2-76.8). ESA, MCD, CCE:ESA ratio and CCE:MCD ratio showed a significant difference (*p value $<.0001$)* in all positions.

Conclusion
We have defined simple and reproducible measurements that enable rapid quantification of smile function and objective evaluation of oculo-oral synkinesis.

Isolation nasoseptal cartilage derived stem cells: implications for cartilage tissue engineering

Ms Z Jessop, Dr A Al-Sabah, Dr I L Pieper, Professor C Archer, Professor C Thornton, Professor I S Whitaker
ReconRegen Research Group, Welsh Centre for Burns and Plastic Surgery

Introduction
Facial disfigurements, such as nasal and auricular defects following trauma, burns, skin cancer resection and congenital conditions affect almost 1 in 100 people in the UK. The heterogeneity in approaches for cartilage tissue engineering (TE) indicates we do not have a durable solution. Our aim was to investigate utility of nasoseptal cartilage derived stem cells (CDSCs) for TE.

Methods
Human nasoseptal cartilage explants (n=6, age range 24-40 years, 4F:2M) were obtained with ethical approval following routine septorhinoplasty. CDSCs were isolated using differential fibronectin

adhesion and characterised using flow cytometry, immunocytochemistry, qPCR and contrast phase light microscopy. Proliferative potential of nasoseptal CDSCs was determined using colony forming efficiency (CFE), population doublings and iCELLigence impedance based cell assay.

Results
Samples weighed 292±124mg (mean±SD) and digest yielded 11022cells/mg tissue with 93% viability. Nasal CDSCs are clonogenic (CFE of 5-9/1000 cells seeded after 12 days of culture, mean of 61 cells per colony), highly proliferative (population doublings over 50% greater than chondrocytes), positive for mesenchymal stem cell markers (in particular CD44 and CD105) and capable of trilineage differentiation. Data from metabolic and live/dead cell assays suggest that cells survive and are metabolically active following 3D bioprinting on using the 3Dynamic Tissue Engineering Workstation Alpha.

Conclusions
In conclusion, we propose that nasoseptal CDSCs may provide a useful cell source in cartilage TE for facial reconstruction. We discuss this in the context of novel biofabrication strategies such as 3D bioprinting.

A 3D in vitro model of remyelination after peripheral nerve injury

Mr B Kadler, Dr A Faroni, Dr D Wellings, Dr A Reid
University of Manchester

Introduction and Aims
The recovery of function after major peripheral nerve injury is currently unattainable. Despite the peripheral nervous system's capacity to regenerate, there are no useful therapies to promote targeted regeneration. A key component of regeneration is the reconstitution of the conducting myelin sheath. As there are no acceptable 3D *in vitro* models to examine remyelination, this study sought to establish one and aimed to test the efficacy of adipose-derived stem cells (ASC) as a source of myelinating glial cells.

Materials and Methods
Poly(epsilon-lysine) amine, carboxyl and functionalised IKVAV (Spheritech) scaffolds were used to culture rat Schwann cells with neurons and cell viability was tested. The addition of adipose-derived stem cells (ASCs) established a 3D co-culture study. Methods of myelin detection included gene expression analysis and electron microscopy.

Key results
IKVAV functionalised scaffolds encouraged 2 times more cell viability ($p < 0.05$ and 0.01) and 2.6 times higher proliferation ($p < 0.05$) than other models and were taken forward for further experiments. Imaging demonstrated that cultured Schwann cells and neurons maintain their morphology and co-localise. Schwann cells and dASCs demonstrated linear arrangements along neurites indicating

myelination. Myelin gene expression (MBP, P0, PMP22) was upregulated in Schwann cell groups and dASCs produced more myelin protein transcripts than uASCs.

Conclusion
IKVAV-functionalised poly(epsilon-lysine) can be used as a model of remyelination to study an array of potential pharmacological and cellular therapies for nerve injury with high-throughput screening. dASCs myelinate and open up opportunities for nerve regeneration.

Differences in 32,248 post-mastectomy autologous breast reconstruction patients using the updated National Inpatient Survey: an analysis of national and regional trends

Dr P Kamali Sadeghian, Dr M A Paul, Dr A S Ibrahim, Dr P G L Koolen, Miss W Wu, Dr M L Schermerhorn, Dr B T Lee, Dr S J Lin
Beth Israel Deaconess Medical Center/Harvard Medical School

Background
The incidence of breast cancer cases has increased significantly over the last decades. Hence, breast reconstructive procedures follow this trend constituted both by autologous and implant based reconstructions. The aim of this study was to assess national and regional trends in different types of autologous breast reconstruction (ABR).

Methods
Using the Nationwide Inpatient database (2008 to 2012), data on breast cancer and mastectomy rates, type of ABR and sociodemographics were obtained and analysed. Furthermore, national and regional reconstruction trends over time for ABR were plotted and analysed.

Results
A total of 427,272 patients were diagnosed with breast cancer, of which 343,165 underwent mastectomy and 152,256 received breast reconstruction of which 16.4% had ABR. Overall, ABR demonstrated a significant increase over time (6.4% to 17.6% between 2008 and 2012, $p<0.001$), but when stratified per region, this positive trend was only seen in the Midwest and the Southern region.

Most ABRs were performed in the Southern region (37.4%). Subgroup analysis demonstrated a significant increasing trend for both LD and DIEP flap, both nationally and regionally. Interestingly, most pTRAM, fTRAM, SIEA and GAP flaps were performed in the Northeast region, while most DIEP and LD flaps were performed in the Southern region.

Conclusion
Overall, autologous breast reconstruction showed a significantly positive trend over time but when stratified into region, this was only seen in the Midwest and the Southern region.

Rational design and protein engineering of novel ligands for wound healing and regenerative medicine applications

Miss M Kang, Miss M Fischer, Mr E Issa, Mr A J Moss, Professor N P Brindle
University of Leicester

Introduction
Growth factors determine the fate of blood vessels during angiogenesis in wound healing and tissue engineering. Growth factors include Angiopoietins (Ang) that act via Tie2 receptors. Ang1 is vascular protective and suppresses vascular inflammation, inhibits vessel leakage and endothelial death. Ang2 causes vascular destabilisation. Ang1 is large (280kDa) and shows variable solubility and biological activity as a recombinant protein making it difficult to use for therapeutic applications. We aimed to develop a small, stable Ang1 mimetic protein for use as therapeutic lead molecules.

Methods
Peptides were selected for Tie2 binding and inserted into a protein scaffold. Ability to bind the Tie2 receptor was analysed by ELISA. Cell surface binding was examined by fluorescence staining and the ability to activate cellular signalling was tested by immunoblotting. Functionally, the influence on endothelial cell migration was tested using a chemotactic assay.

Results
A 12kDa novel synthetic ligand (LigA) was produced. LigA binds Tie2 assayed in-vitro by ELISA and binds Tie2 on the surface of endothelial cells. The ligand stimulates long-term survival of endothelial cells and endothelial migration. We also tested whether Ang2 inhibits the activity of LigA by examining effects of Ang2 on LigA-induced endothelial survival. As expected Ang2 inhibited native Ang1 effects but surprisingly enhanced LigA activity.

Conclusions
We've created a small, stable, bioactive ligand for Tie2 with unique properties including enhanced activity in the presence of Ang2 and the first biased ligand for Tie2. These ligands will now be optimised for therapeutic activities to promote angiogenesis during wound healing and in tissue engineering.

Funding in facial palsy

Mr A Kilshaw, Mr W Holmes, Mr P Matteucci
Bradford Royal Infirmary

Introduction
Facial palsy is a complex condition with variable manifestations that requires an individulaised package of care from a multitude of complex therapeutic procedures. Head& neck surgeons have commented on disparity for many of these procedures based on a postcode lottery. This study's aim was to determine the geographical variability in funding provision for facial palsy treatments between the Clinical Commissioning Groups (CCG) in England.

Method
All 210 CCG in England were contacted via the Freedom of Information act in July2015. Each CCG was asked what treatment modalities for facial palsy they funded from a given list. If they did not fund any treatment, they were asked to explain the reason.

Results
A total of 210 CCG were contacted, of which 207 (98.6%) responded. Of the remaining, 199 (96.1%) had information as to which facial palsy treatments were funded by their respective CCG's. 78 (39.2%) funded Botox for the treatment of facial palsy. Sixty-five (32.7%) and 59 (29.6%) funded for facelifts and brow lifts respectively. Fifty-five (27.6%) of CCG funded eyelid surgery. All other treatments for facial palsy had to undergo individual funding requests to obtain funding. Only 27 (13.6%) of CCGs funded all types of treatment for facial palsy.

The majority of CCG would not routinely fund the procedures as they were deemed cosmetic in nature.

Discussion
Facial palsy carries a significant physical and psychological morbidity. This study has shown that within England, funding is not uniform and that the majority of patients require individual funding request for treatment. This based on the notion that facial palsy surgery was deemed a cosmetic procedure and also of low clinical effectiveness. Possible reasons for disparity will be discussed.

Clinical audit report: risk reducing mastectomy patient selection

Miss D Lim, Mr S Wilson, Mr A Wiberg
North Bristol Trust

Introduction
Advances in genetic testing and increasing breast cancer awareness have resulted in a significant increase in the number of risk reducing mastectomies (RRMs) performed. We aimed to assess whether patients referred to North Bristol NHS Trust for bilateral DIEP reconstructions had RRMs that met criteria and recommendations made in the Pan Birmingham Risk Reducing Mastectomy Guideline.

Method
A retrospective analysis of patients who underwent bilateral DIEP reconstructions by the senior author from 2007 to 2015 was performed. Demographic and pathological data were collected.

Key Results
Sixty RRM patients were included for analysis. Eleven patients did not meet criteria for RRM in terms of breast cancer risk from either a personal or family history. All patients were reviewed by a breast or plastic surgeon and specialist nurse. 42% of patients were reviewed by a geneticist and 30% by a psychologist.

Conclusion
Patient selection for RRM from referring units was not compliant with the Pan Birmingham guideline. Not all of our patients were reviewed by a geneticist or psychologist prior to being accepted for RRM. There is a need for a national guideline on patient selection for RRM.

Does early surgical intervention improve patient reported outcome scores for lower limb reconstruction?

Mr C Macdonald, Miss F Peters, Mr J Young, Mr M Fernandez, Miss J Ward, Mr M Venus, Miss J Skillman
University Hospitals Coventry and Warwickshire

Objective
The BOAST 4 guidelines for the management of severe open lower limb fractures recommend that stabilisation and soft tissue cover should be achieved within 72 hours of injury occurring and not more thanseven days. We devised a study to investigate whether earlier lower limb reconstruction impacted on patient reported outcome measures. This was expected to support the move towards earlier fixation and reconstruction and direct future work for lower limb reconstruction, with the patient's outcome at the heart of such decisions.

Method
The databases of our regional trauma centre were interrogated for all Gustilo-Anderson grade IIIb/c tibial fractures over a five year period. These patients were then contacted and asked to complete a questionnaire based on the Enneking score. The Enneking score is a validated outcome score where results are expressed as a percentage of the contralateral uninjured limb.

Results
Our search found 100 patients with grade IIIb/c lower limb injuries. 51 contactable patients were left after exclusion of children, those who died and those who underwent amputation. A telephone response rate of 53% was achieved. The mean time to fracture fixation and cover was five days (range 1-22). The mean Enneking score was 24.3/40 (range 12-35). Correlation of Enneking score and time to fixation/ reconstruction using the Kruskal-Wallis test found the highest scores in those fixed 4-7 days post-injury but this was not statistically significant.

Conclusions
We found no statistically significant difference between time to fixation and patient reported outcomes. This evidence does not suggest that early surgical intervention (within 72 hours as per the guidelines) improves outcome scores for patients.

The relationship between complications following SLNB and obesity

Ms D Mohamed, Ms A Carbone, Mr J Hardwicke, Miss C Wolfe, Mr K Kok, Mr S Singh
Queen Elizabeth Hospital Birmingham

Introduction
Sentinel lymph node biopsy (SLNB) has emerged as a useful prognostic investigation for melanoma. It is offered within a specialist skin cancer multidisciplinary setting in patients with malignant melanoma stages 1B and above. However, its use in clinically node-negative cases remains controversial.

Various complications following SLNB have been documented in the literature including lymphocele, wound breakdown, infection and lymphoedema. We report on the rate of complications observed in patients who underwent SLNB at our institution and its relationship with obesity.

Methods
Observational, prospective review of all patients who underwent SLNB of the groin and axilla between November 2012 and September 2015 was conducted. Postoperative complications identified in the first 30 days were included for analysis. The incidence of complications was compared between patients with a Body Mass Index (BMI) of 30 and above (obese) and under 30.

Results
173 patients were identified. Complications were reported in 14.5%. Of those, 56% were identified as obese, and 44% were not obese with a complication rate of 21% and 11% respectively.

A relationship between gender and complications rate in the obese cohort was noted being statistically significant in the female obese cohort ($p<0.041$).

There were five readmissions. The most common complications among the obese cohort were wound infections and lymphocele formation.

Conclusion
Our study shows that obese patients have a higher postoperative complication rate following SLNB. This is significant in obese female patients. The surgeon needs to be aware of this increased risk in the obese cohort undergoing SLNB and patients should be counselled accordingly.

Management of chordee with hypospadias

Dr R Mole, Mr D MacKenzie
Salisbury District Hospital

Introduction and Aims
Ventral curvature (chordee) is a common component of hypospadias and can present a significant challenge when performing the surgery. The additional challenge is that the severity of the curvature cannot be assessed reliably in clinic and so the definitive diagnosis is made by artificial erection test

which is performed at the start of hypospadias repair surgery. As such the length of the procedure and requirement for possible further surgery cannot be determined until intraoperative assessment.

Method
Prospectively collected data of hypospadias surgery performed by a single surgeon was examined to determine technique used to correct the chordee. Chordee was graded mild (0~30 degrees), moderate (30-60 degrees) and severe (60-90 degrees).

Results
Mild chordee (43 cases) was treated by skin release (32), skin release and dorsal plication and/or resection of spongiosum (10) or 2 stage repair (1). Moderate chordee (29) was corrected by release of skin and other measures in 14 and a 2 stage repair in 16. Severe chordee (7) required a 2 stage repair in 6.

Conclusion
Assessment of chordee forms a central part of the decision making process in hypospadias repair and so should be carefully discussed with parents during the counselling and consenting process for hypospadias repair.

Improving the clinical coding accuracy of plastic surgery trauma care episodes

Mr K Y Wong, Dr R Mole, Mr M Khan
Salisbury NHS Foundation Trust

Aims
Healthcare Resource Group (HRG) codes define the tariff associated with each episode of care. They are generated from diagnostic and intervention codes. For the latter, all procedures performed in the National Health Service are coded via the Office of Population Censuses and Surveys (OPCS) classification system. We assess the HRG coding accuracy of trauma care episodes within our department and the financial implications.

Methods
Coding of all plastic surgery trauma procedures over a one-month period was retrospectively analysed. Comparison was made between operation notes and OPCS codes assigned by professional hospital coders and subsequent recoding by surgical trainees in liaison with professional clinical coders. Areas of inaccuracy were assessed including procedure code, site of surgery and co-morbidities. The new OPCS codes assigned to each operation and the resultant HRG codes were used to determine if financial remuneration changed.

Results
A total of 145 cases were reviewed. Primary OPCS codes were incorrect in 45 cases (31%) resulting in 40 HRG code changes (28%) and £29,000 loss of payment. New guidelines were agreed for the most common procedures. Differences between operations were often subtle and complex operations

commonly included multiple components, which were difficult to appreciate from medical documentation. Consequently, regular clinician-coder multidisciplinary team (MDT) meetings were set up.

Conclusion
Accurate coding is crucial for audit, research and fair financial remuneration. Healthcare professionals often lack training on the subject. Regular MDTs are an effective mechanism to improve communication between healthcare professionals and clinical coders to ensure accuracy.

Re-evaluating the "10% rule" for sentinel lymph node biopsy in melanoma: which sentinel nodes should we harvest?

Mr N Pantelides, Dr J Ranson, Mr G Laitung
Royal Preston Hospital

Introduction
The “10% rule” has become widely accepted by surgeons performing sentinel lymph node biopsy (SLNB) for melanoma. It involves sampling all nodes with a radiation count greater than 10% of the hottest node, together with all blue and macroscopically abnormal nodes. Our study compares the “10% rule” with other proposed definitions of the sentinel node(s), to determine whether these could reduce the number of nodes harvested without compromising the sensitivity of the procedure.

Methods
We reviewed 537 SLNBs performed for primary melanoma from 2009-2015. SLNB was offered to all patients with 1-4mm Breslow thickness melanoma and sentinel nodes were harvested according to the "10% rule".

Results
116 patients (22%) had at least one positive sentinel node and, within this cohort, there were 44 positive nodal basins from which more than one sentinel node had been harvested. The table below shows the effect on the number of nodes sampled and the false negative rates when alterate sampling criteria were retrospectively applied to these basins.

ling criteria	nodes sampled	positive nodes	ve nodes missed	l basins understaged
rule"	107	60	-	-
st 2 nodes and any blue	105	59	1 (1.7%)	0
t nodes	103	58	2 (3.3%)	1 (2.3%)

st 2 nodes	96	56	4 (6.7%)	2 (4.5%)
st node only	52	36	24 (40%)	8 (18%)

Conclusion

Our data supports the continued use of the 10% rule. Of the alternate sampling criteria, only removing the hottest 2 nodes or the hottest node alone would have noticeably reduced the total number of nodes harvested. However, the cost of this is an unacceptable increase in positive nodes missed and patients understaged.

A "green" approach to secondary reconstruction: the concept of the recycle flap and a classification

Mr P Sadigh, Professor S Jeng
E-Da Hospital

Background

Harvesting soft tissue from a previously transferred flap allows for flap reshaping whilst simultaneously raising tissue for a secondary procedure. This is done without increasing the number of donor sites and is therefore a very attractive reconstructive option.

Methods

Between March 2011 and October 2013, the authors performed 60 recycle flaps on 60 patients (three women and 57 men) who had undergone previous flap reconstruction (52 free and eight pedicled). The recycle flaps were raised as either random pattern or perforator flaps. Mean time between primary reconstruction and the recycle procedure was 28.3 months (range, 6 months to 20 years), and the mean age of our patients was 57 years (range, 21 to 78 years).

Results

Of 60 recycle flaps raised for secondary reconstruction, 58 survived completely (97 percent). Two cases of total flap necrosis were encountered resulting from pedicle damage during attempted perforator dissection within a previously irradiated flap. Twenty-nine flaps were raised as random pattern flaps, 29 were raised as pedicled perforator flaps (20 with perforator skeletonization), and two were raised as free perforator flaps.

Conclusions

There are a number of ways to safely "recycle" the soft tissues used in a previous reconstruction. This provides new tissue for a secondary procedure while debulking and refining the primary flap. Raising perforator flaps from previously irradiated flaps is, however, technically challenging and carries a high risk of flap necrosis (40 percent in our series) and should be advised against.

Prefabricated pre-expanded cervical skin flaps for hemi-facial burns scar resurfacing

Mr P Sadigh, Professor Y Zhang, Dr L Ke, Dr P Min, Dr S Feng, Professor N Liu
The Peoples' Ninth Hospital

Background
Achieving a 'like for like' reconstruction is a central tenet of modern Plastic Surgery. The skin of the neck is considered to be the best match for both colour, texture and thickness, as compared to facial skin. By prefabricating the cervical soft tissues by way of pedicled or free fascial flaps at the same time as inserting a tissue expander, one is able to create an ideal 'like for like' reconstruction in the setting of hemi-facial burns scar resurfacing.

Methods
Eighteen patients with hemi-facial burns scarring underwent prefabrication and pre-expansion of their cervical soft tissues before undergoing complete hemi-facial burns scar re-surfacing. Time to spontaneous resolution of flap swelling, presence or absence of venous congestion and clinical outcome were recorded. In two cases indocyanine-green (ICG) lymphography was used to monitor the dermal backflow pattern until swelling had completely resolved.

Results
Seventeen flaps survived completely, one was complicated by venous congestion resulting in partial flap necrosis. The average moving velocity of ICG in the flap lymphatics improved from 0.48cm/min to 1.5cm/min in the first 12 days after flap transfer, suggesting that lymphedema and lymphatic channel recovery respectively could be the process by which prefabricated flaps swell post transfer before spontaneous resolution is observed.

Conclusion
Prefabricated pre-expanded cervical skin flaps represent a reliable method to achieve hemi-facial resurfacing in the setting of burns. Although transient swelling was observed in all prefabricated flaps in our series, we postulate that this is secondary to lymphatic disruption that subsides as lymphangiogenesis takes place.

Happy Flappy - Rectus sheath blocks for pain management following autologous breast reconstruction

Mr S Sandhu, Miss J Tang, Miss V Teoh, Miss P Muthayya, Mr S Coulson, Mr D G Dujon, Mr D G K Lam, Dr S Kurian
Sheffield Teaching Hospitals NHSFT

Background
Autologous breast reconstruction restores mastectomy defects in breast cancer patients. It provides excellent aesthetic and tactile qualities compared to implant-based reconstruction. Though the abdomen remains a popular donor, post-operative pain management can be significant.

Aim
To evaluate the efficacy of intra-operative rectus sheath blocks in reducing post-operative abdominal pain following abdominal tissue breast reconstruction.

The primary outcome measure was the mean total opioid consumption within the first 24 hours. Secondary outcome measures included pain intensity scores, total in-hospital cumulative opioid consumption, time to ambulation, post-operative nausea and length of inpatient stay.

Methods
This is a prospective, cohort study of patients undergoing free abdominal-based, breast reconstruction from January to December 2015. All cases were performed at a single institution by the same surgeons. All patients undergoing muscle-sparing TRAM immediate or delayed reconstructions were included. Patients with chronic pain were excluded. Data was collated using standardised patient outcome tools and analysed using SPSS.

Results
Twenty-four female patients were recruited in this study. Patients in the study group (n=11) had a statistically significant reduction in pain intensity in the first post-operative 24 hour period. This correlated with reduced mean and total in-hospital opioid consumption.

Post-operative nausea, return to mobility and length of in hospital stay were improved, though not statistically significant.

Conclusion
Our study highlights the benefits of a simple adjunct to analgesia that enhances patient recovery following abdominal-based, free flap breast reconstruction.

To bleed or not to bleed – Stopping oral anticoagulants in minor skin cancer surgery: a literature review

Mr S Sandhu, Miss J Tang, Miss V Teoh, Mr D G K Lam
Sheffield Teaching Hospitals NHSFT

Background

The incidence of skin cancers is increasing globally. 80% of skin cancers occur in people over the age of 60 and these patients are commonly on anticoagulant therapy.

Studies have been conducted on the management of perioperative anticoagulation but these vary in paucity.

No systematic literature review or national consensus on the subject is published to date.

Aim

To review the literature for current recommendations on discontinuing anticoagulants in minor skin cancer surgery and establish the risk to patients. To produce evidence- based guidelines based on the review.

Method

A literature review was performed using the keywords listed below.

Anticoagulants	Cardiovascular	
Aspirin	(MI/stroke/ mechanical valves /AF)	
Warfarin	Thrombosis	
Clopidogrel		
Rivaroxaban	Haemorrhage/ Bleeding	Cutaneous/skin
Apixaban		
Dabagitran	DVT /PE/ VTE	surgery

Independent searches were conducted across multiple search engines for all studies published between1990 and 2015 in the English Language.

Results

Thirty-five studies were identified, providing outcomes for 291,316 patients.

Most studies demonstrated no statistically significant difference in the risk of bleeding following cutaneous surgery if the anticoagulant agent is continued.

A review of 89,792 patients demonstrated a significant, 1.63-fold increased risk of myocardial infarction if aspirin was stopped.

Two studies in 593 patients demonstrated up to a three-fold increased risk of a venous thromboembolic event if aspirin was stopped.

Conclusion

Our review demonstrates significant morbidity and mortality associated with discontinuing anticoagulants pre-operatively for minor skin cancer surgeries.

We recommend new guidelines and a study is underway to review this.

Introduction of a paediatric minor burns proforma in a burn facility affiliated emergency department: a successful quality improvement project

Ms L Sayed, Dr R Rowlands, Mrs C Porter, Mrs V Galsworthy, Miss R Agarwal
University Hospitals of Leicester NHS Trust

Introduction

25,000 children are estimated to attend Emergency Departments with burn injuries in England and Wales every year. We intend to audit whether the introduction of a 'Burns Proforma' would improve documentation, assessment and management of paediatric minor burns in an Emergency Department.

Methods

Each audit cycle evaluated 50 clinical records from children aged ↖ 16 years presenting with burns to an Emergency Department. The initial audit was carried out between November 2012 and January 2013; the proforma was launched in August 2014 and was re-audited between September 2014 and January 2015. Analysis involved reviewing documentation of a focused history and examination and whether the patients were appropriately managed.

Results

Implementation of the proforma brought about a complete reformation in all key aspects of documentation. Documentation of time of burn, first aid given, who was supervising the child and percentage of total body surface area burnt improved significantly. Review of patient management showed that substantially more patients were prescribed silver based dressings as per regional network guidelines, thus allowing for cessation of oral antibiotics in the acute burn setting. Inappropriate referral decreased only marginally despite improved documentation however, in depth analysis revealed that this was for various reasons.

Conclusions

Implementation of the paediatric minor burns proforma has significantly improved documentation of all aspects of history taking and assessment and as a consequence management of paediatric minor burns has excelled. Due to its success we areintroducing this proforma to other Emergency Departments across the network.

Team efficiency: DIEP Police- Four free flaps in one day in a single operating theatre

Mr H Sharma, Miss B Craggs, Miss G Oni, Dr G Libondi, Mr N Patel, Mr V Ramakrishnan
St Andrew's Centre for Burns and Plastic Surgery

Introduction

Microsurgical breast reconstruction is a multistage process. With experience of over 3000 cases we have refined our surgical approach improving operative efficiency using process mapping. This has enabled us to perform four free flaps in four patients in one operating theatre in one day. This has been achieved through planned surgical conceptualisation, teamwork and the principle of standby.

Methods

By process mapping we have broken down the whole procedure of microsurgical breast reconstruction into pre-operative, intra-operative and post-operative steps, each of which is further subdivided. With the use of the Osirix software for pre-operative imaging we are better able to surgically conceptualise the flap raise. Each member of the team (anaesthetic, nursing and surgical) has clearly defined steps for which they are responsible for executing on the day of surgery.

The principle of standby enables us to carry out multiple cases in the same day. This involves staggering patient admissions with the caveat of possible cancellation if there is a complication with any of the first cases.

Results

In the beginning we operated on one DIEP case per theatre list per day. As we improved our efficiency we are able to reproducibly perform these operations within four hours. We present specific timings for a day in which we performed four free flaps in four patients.

Conclusion

By implementing the principles of process mapping we have managed to improve our efficiency of microsurgical breast reconstruction. Through the use of pre-operative surgical conceptualisation, on the day execution of the plan with meticulous teamwork and applying a standby approach to patients we have successfully performed four free flaps in four patients in one operating theatre in one day.

The CelluTome epidermal graft harvesting system: a patient reported outcome measure and cost evaluation study

Dr O Smith, Miss S Edmondson, Miss N Bystrzonowski, Miss N Hachach-Haram, Mr MKanapathy, Mr T Richards, Mr A Mosahebi
Royal Free Hospital

Introduction
Split skin grafts (SSG) are conventional wound management options. However, they require anaesthesia (local or general), access to specialist equipment, rooms and staffing and can have high donor site morbidity. The CelluTome epidermal-graft-harvesting-device is a novel alternative, providing pain-free epidermal skin grafts (ESG) in the outpatient setting with projected minimal donor site trauma and improved patient satisfaction. This study aimed to compare ESG with SSG by evaluating patient related outcome measures and the cost implications of both.

Methods
Twenty patients answered a subjective skin graft satisfaction questionnaire where the main parameters evaluated were: donor/graft site noticeability, aesthetic concerns, adverse problems and patient satisfaction. Cost per patient was calculated for each group based on total operative expenses and five dressing clinic followups.

Results
In 100% of ESG cases there were no donor site noticeability, adverse problems or concerns compared to 25% in the SSG group. Complete satisfaction with the donor site appearance was observed in 100% of ESG cases (50% SSG). Noticeability, adverse problems and overall satisfaction were significantly better in ESG ($p<0.05$). Graft site parameters were comparable with similar healing outcomes.

The cost per patient for ESG was £431 and £1489 for SSG with an annual saving of £126,960 based on ten grafts per month.

Conclusion
For the right patient, CelluTome provides comparable wound healing with reduced donor site morbidity and higher patient satisfaction. CelluTome's outpatient applicability and financial benefits highlights its' potential at the forefront of wound management.

The effect of body-contouring-surgery on weight loss maintenance following bariatric surgery

Mr O Smith, Miss N Hachach-Haram, Miss N Bystrzonowski, Dr O Smith, Mr M Greenfield, Dr A Pucci, Dr M Hashemi, Mr A Mosahebi
The Royal Free Hospital

Background
Despite proven benefits of bariatric surgery in reducing weight, patients are often left with excess skin. Body contouring surgery is not routinely available, however it has been shown to improve quality of life and may help maintain weight loss. We aim to evaluate the effect of massive-weight-loss-body-contouring-surgery on weight loss maintenance over a 3-year period.

Methods
Two demographically matched groups of female patients were retrospectively analysed. The control group (n=61) received either a sleeve gastrectomy or gastric bypass. The test group (n=30) received this plus body contouring surgery 12 months after bariatric surgery. An independent t-test was used to compare mean weight loss at 6 weeks and 3, 6, 12, 24 and 36 months. Statistical analysis was adjusted for patients lost to followup.

Results
Between 6 weeks and 12 months there was no difference in weight loss. At 24 months the test group (n=21) lost a mean 35.7% of their pre-op weight; the control group (n=54) lost a mean 30.2%. At 36 months the test group (n=10) maintained weight loss with a mean loss of 35.0%; the control group (n=15) increased weight from 24 months with a mean loss of 24.7%. Differences in weight loss at 24 and 36 months were statistically significant.

Conclusions
Our results suggest patients who undergo body contouring surgery after bariatric surgery are able to lose significantly more weight and maintain weight loss at 3 years of followup compared to those undergoing bariatric surgery alone.

Piloting Changing Faces practitioners within the NHS to address the psychological needs of patients with disfiguring injuries

Ms H J Spalding, Dr J Partridge, Ms I Van Heugten, Ms E Noble
Changing Faces

Whilst Plastic Surgery is increasingly sophisticated, patients are often left with disfigurement: they are vulnerable to debilitating self-consciousness and social anxiety, depression and isolation. They experience social awkwardness, staring, ridicule, harassment, bullying and rejection.

The charity, Changing Faces is pioneering a new type of professional, a Changing Faces Practitioner (CFP) skilled in delivering our well-tested psycho-social intervention, the FACES package. This is tailored to each patient (and family)'s needs and is now in practice in three community settings employed by Changing Faces and in four NHS hospital settings.

The Practitioners:
- offer emotional support, practical advice, CBT interventions and social skills training
- signpost and refer people to other organisations and professionals

- treat patients with mild-to-moderate mental health issues arising from disfigurement
- provide advice, support and training for other professionals in the clinical team

Data collection on the impact of CFP interventions has been ongoing since 2012 and to date, evidence suggests significant improvements in patients' self-esteem and confidence and their quality of life because of an increased ability to cope with appearance concerns, a focus on social, education and employment issues and opportunities and high satisfaction with the support.

The role is being evaluated for its cost-effectiveness as a Tier 2 intervention providing preventative and active treatment value at a lower cost than clinical psychology. CFP care can lessen the need for repeated contacts with hospital clinicians, GPs and mental health services and can lessen demand for medical interventions to address appearance.

Breast implant associated anaplastic large cell lymphoma

Miss H Stark, Mr S Chummun, Dr A Lennard, Associate Professor N McLean, Mr J O'Donoghue
Royal Victoria Infirmary

Introduction
Breast implant-associated large cell anaplastic lymphoma (BIA-ALCL) is now a recognised rare type of breast cancer found in women with breast implants. We present a case series of four patients with BIA-ALCL managed in one regional unit. This is the largest reported series in the UK.

Aims
The aim of this study is to present a treatment algorithm and management pathway for such cases. We also discuss the implications for those consenting patients for procedures using breast implants.

Methods
From 2012 to 2015 four cases of BIA-ALCL were diagnosed and treated in the North East of England, with non surgical management at the regional haematology centre. A retrospective case note review of these patients was conducted and the outcome of the patients reviewed.

Results
All patients had breast surgery involving textured, silicone implants. The mean age of patients at presentation was 48 (41-55). Time from implant insertion to disease presentation ranged from 4-16 years. Three of the four cases presented with late onset seroma. These were demonstrated on cytology to be ALK negative ALCL, consistent with a diagnosis of BIA-ALCL. All patients had removal of their implants plus capsulectomy and one patient also had chemotherapy. To date no patients have shown any sign of recurrence.

Conclusions
Despite the increasing awareness of BIA-ALCL, there is still limited information on how to treat and follow up these patients. While progress has been made in developing a management pathway, the

decision on whether to reconstruct these patients needs to be clarified. We feel there should be no doubt about the inclusion of BIA-ALCL when consenting a patient, as a serious, although rare risk associated with implant surgery.

Microsurgical skill acquisition in a one-day introductory course with performance evaluation using software assisted scoring system

Miss C J Stewart, Ms S Khadijah Yusoff, Mr D Widdowson, Mr W L Lam
Department of Plastic Surgery, St John's Hospital

Introduction and Aims

Recent emphasis on microsurgical skill acquisition at an earlier stage of Plastic Surgery training has seen a shift towards objective, competence based assessment. Yet there are few existing validated models that assess ability. We propose a software analysis scoring system to objectively measure spacing, alignment and overall improvement in a one-day, introductory course setting.

Materials and Methods

Images of standard 4mm latex strips that had been sutured by participants using the Microtrainer system were uploaded onto calibrated, online software. Sutures were analysed with regards to spacing, alignment and density. From these measurements, a total score was calculated; one on initial assessment (Score 1) and one on final assessment (Score 2), enabling measurement of overall improvement.

Key Results with Supporting Statistical Analysis:

Thirty-eight microsurgical anastomoses from 19 participants ranging from postgraduate years 1-7 were analysed. Seventeen participants had no previous experience of microsurgery. The mean average score 1 of participants was -2 (range -12 to +22) and score 2 was 22 (range +12 to +32) showing a significant improvement in candidate ability ($p < 0.0001$).

Conclusion

Microtrainer system software analysis provides a novel and reliable objective assessment for surgical trainees at all stages of training, without risk to patients. It is timely, repeatable and can efficiently demonstrate progress in a one-day course setting.

A new method to ear canal plasty for the atresia of external ear article: superior temporal artery pedicled spiral scalp flap

Dr Y Takeichi, Professor H Iguchi, Dr H Motai, Dr H Tada
Daiyukai Daiichi Hospital

Introduction

Ear canal plasty is very difficult problem. TPF flap is often used for this reconstruction, but the skin graft is needed. That causes stenosis of the ear canal.

We used a superior temporal artery pedicled spiral scalp flap for the ear canal plasty.

Material and Methods

A superior temporal artery pedicled spiral scalp flp (SSS flap) was elevated 1.5-2cm wide, about 10-12cm long. The donor site was closed directly.

The scalp hair of flap had been removed by the laser treatment pre-operatively.

After the mastoidectomy, the flap was inserted to the temporal bone cavity spirally.

The spiral structure of this procedure was dynamically strong. Therefore it prevented the stenosis of the ear canal.

After this ear canal plasty, we inserted a silicon stent to the ear canal for half a year.

Result

We have performed 14 cases of ear canal plasties for the atresias of external ear articles. All cases had microtia.

In all cases, we maintained the ear canals. The length of the ear canal was 3.5-4cm, and diameter0.6-0.8cm. The hearing functions of these cases were unstable. In several cases, the patients obtained good function, but they had became worse because of the granulation of the middle ear cavity. They can use hearing aids.

Conclusion

The merits of SSS flap are:

1) The spiral insertion of a long and narrow flap is most efficient method to transfer a flap to limited space.

2) The spiral insertion of a long SSS flap makes spreading moment. That moment become the counterforce of ear canal re-stenosis.

3) The spiral structure is dynamically hard.

4) The scar of spiral structure is helically long. Therefore the shortening of ear canal length is hard to occur.

Sentinel lymph node biopsy improves survival in melanoma: long term results from the Oxford experience

Mr D Thomson, Mr M Rughani, Professor M Middleton, Mr O Cassell
John Radcliffe Hospital

Introduction and Aims
Sentinel lymph node biopsy (SLNB) is an established investigation for melanoma patients offering prognostic information. There has been debate regarding its therapeutic role. We present our 16-year experience with respect to melanoma-specific survival (MSS) and disease free survival (DFS).

Methods
We evaluated patients undergoing SLNB for cutaneous melanoma from 1998 to 2014 in a single UK centre.

Results
Overall 1,601 patients (779 males, 822 females) underwent SLNB with a median age of 54 years (range 13-92). Median Breslow thickness was 2.00mm (range 0.3-20). The most common anatomical location was the trunk (35%) followed by the lower limb (32%). A positive SLNB was identified in 22% of patients with the majority (76%) undergoing further completion dissection of the nodal basin, yielding positive nodes in 18%. Significant differences in MSS were noted after follow up for SLNB positive and negative patients; 28% and 5%, ($p<0.001$) respectively. Significant differences in long-term disease recurrence were observed between the SLNB positive and negative groups; 16% and 5%, ($p<0.001$) respectively.

Conclusions
Our long term experience demonstrates the significant differences in melanoma survival and recurrence for patients undergoing SLNB and supports the use of this technique in managing melanoma.

The Welsh experience with Poly Implant Prothèse (PIP) breast implants: a retrospective three-year cohort study of 646 patients

Mr R Thomson, Professor I Whitaker, Professor K Morris, Mr M Haj Basheer
Welsh Centre for Burns & Plastic Surgery

Introduction
More than 40,000 women in the UK have had PIP implants inserted. In England there is funding to replace PIP implants which were performed in the NHS. In Wales the NHS will fund removal and replacement, even if the primary procedure was carried out privately.

Method
The notes of all Welsh patients (referral population of ›2.5million) requesting assessment of their PIP breast implants between April 2012 and July 2015 were reviewed retrospectively (n=646).Patients suspected of rupture were offered an ultra-sound scan. All patients with viable concerns of any nature were offered implant removal and replacement (n=194). Binary Logistic Regression analysis was used to determine if symptoms/concerns or rupture was related to patient age, implant size and time to rupture.

Results
646 patients were seen in clinic. 132 patients had USS, 6 had MRI and 80 had suspected implant rupture. 368 (57%) patients had removal of implants, of these 194 (53%) had implants exchanged.67 patients had ruptures confirmed (10.4%). There was no statistical correlation (Odds Ratio (95% Confidence interval) between implant rupture and patient age (P=0.94), size of implant (1.0016 (0.976-1.027)), and time to rupture (1.0246 (0.926 – 1.133)).

Conclusion
The experience of PIP implants in a heterogeneous population in Wales, including both public and private sectors is lower compared with other studies with regards to overall rupture rate (11.6% Oulharj, 2014, 17.2% Aktouf, 2012). Our data indicates that the rupture rate is independent of implant size, patient age and length of time from insertion. We discuss these findings and relevant health economic issues in relation to the current NHS budgets and relevant literature concerning PIP implants.

Venous thromboembolism prophylaxis in Plastic Surgery: a 22-year national follow-up study

Mr R Wade, Mr F Conroy, Mr D Mather
Leeds General Infirmary

Background
Venous thromboembolism (VTE) is the most common preventable cause of death in hospitalised patients. Despite international consensus on the importance of VTE prophylaxis, mechanical and

chemical VTE prophylaxis for plastic surgery patients is variable. Our 22-year follow-up study compares current and historical practice in order to discuss the evolution of VTE prophylaxis in our specialty.

Methods
We invited consultant members of BAPRAS to participate in our online survey which was based on our groups' work in 2004.

Results
61 consultants working in 35 NHS Trusts (59.3% response rate) and seven consultants from the private sector replied. VTE risk assessments were usually completed by junior doctors on a Trust protocol but 16.7% did not perform a risk assessment at all. VTE prophylaxis for autologous tissue breast reconstruction has substantially declined. The use of TEDS and Flowtrons in cancer patients undergoing nodal clearance has fallen, with over a third receiving no LMWH. Regarding abdominoplasty, VTE prophylaxis has increased but the administration timing varies (Table 1).

Conclusions: In comparison to historical data, our follow-up survey suggest that some plastic surgery patients may not receive adequate VTE prophylaxis. Current guidance endorses VTE risk assessment for all patients and we should only omit prophylaxis in order to avoid life-threatening complications.

Table 1	When do you administer the first dose of LMWH to your patients undergoing abdominoplasty?					p-value
	Night Before	Peri-Op	1-2 Hours Post-Op	Evening After Surgery	Next Day	
Frequency (%)	1 (2.3%)	8 (18.2%)	8 18.2%	23 52.3%	4 9.1%	<0.001

The use of study registration and protocols in plastic surgery research: a systematic review

Mr T Pidgeon, Dr C Limb, Mr R Agha, Ms K Whitehurst, Ms C Chandrakumar, Ms G Wellstead, Dr A Fowler, Professor D Orgill
Academic Surgical Collaborative

Introduction
In 2013, the Declaration of Helsinki mandated that every research study involving human subjects must have its protocol registered in a publicly accessible database prior to the enrolment of the first patient. This systematic review assessed whether studies published in leading journals of plastic surgery are compliant with this.

Methods
We examined all research articles in Plastic and Reconstructive Surgery, The Journal of Plastic

Reconstructive and Aesthetic Surgery and The Annals of Plastic Surgery published from 1 April 2014 - 31 March 2015

For each study, we assessed whether a protocol had been registered with the WHO Trials Registry, ClinicalTrials.gov, ISRCTN, The Cochrane Collaboration, the Research Registry, PROSPERO or published with a PubMed-indexed journal.

Results
Of 595 included articles, a total of 24 studies had a protocol registered (4.0%). No studies had published a protocol in a journal. The most common database to register a protocol was ClinicalTrials.gov (n=17). The study design that most commonly had a registered protocol was the RCT (n=8 of 24, 33.3% of RCTs).

Conclusions
Publication or registration of protocols for studies involving human participants in major plastic surgery journals is low. There is considerable scope to improve this and we provide relevant guidance.

Functional outcome following low energy open ankle fracture in the elderly and a proposed treatment algorithm

Dr A Wijendra, Mrs R Alwe, Mr G Grammatopoulos, Mr M Lamyman, Mr G Kambouroglou
John Radcliffe Hosptial

Introduction
Open ankle fractures have traditionally occurred as a result of high-energy trauma. However, contemporary epidemiological studies find the highest incidence of open ankle fractures is now in women over the age of 60 following a simple fall from standing height.

The aim of this study was to describe the functional outcome achieved following fixation. To do this we present the largest series of low energy open ankle fractures to date and a suggested treatment algorithm based on our findings.

Methods
All patients who presented to the Major Trauma Centre (MTC) at John Radcliffe Hospital between January 2010 and 2015 with an open ankle fracture following a fall of less than two meters were identified. Study end-points were wound related, fixation related, mobility status post injury and patient- reported functional outcome using the Enneking score.

Results
The cohort comprised 61 patients with a mean age of 73 years, 82% female, 18% diabetic. 39 of the fracture wounds were primary closed, 6 required a split skin graft (SSG), 6 were treated with 2° intention and 10 required free tissue flap and SSG. There were three cases of wound dehiscence requiring operative intervention.

The mean Enneking score was 35.49 out of 40 (SD: 5.90). There was a statically significant difference in Enneking score with patients fairing worse with 2° closure compared to both 1° closure and free tissue flap with SSG.

Conclusion
This series found that definitive soft tissue cover results in a significantly better functional outcome. We therefore recommend that all patients be treated in dedicated MTCs with an algorithm of early surgery, cautious debridement, rigid stabilisation and either primary closure or secondary reconstruction (if needed).

Liposuction for the management of chronic lymphoedema: measuring improved quality of life using the Lymph-ICF and LyQLI questionnaires

Mrs H Wohlgemut, Mr A Munnoch
Ninewells Hospital

Introduction
The high adipose tissue content of chronic lymphoedema permits the use of liposuction to reduce volume. This method has shown considerable success evidenced by the publication of NICE guidelines in 2008. This study aims to present pre and post-operative data on quality of life changes in patients having under gone liposuction for chronic lymphoedema.

Methods
Data was collected prospectively, using the Lymphoedema Functioning, Disability and Health Questionnaire (Lymph-ICF) and the Lymphedema Quality of Life Inventory (LyQLI). These questionnaires have previously been validated and demonstrate good reliability within this patient group.

Results
This study reports the results of 26 patients. The highest possible score on Lymph-ICF is 280, demonstrating a poor quality of life with a higher score. The pre-operative results: the average score was 117.8 (Range: 20 – 195). The four week post-operative results demonstrated an average score of 75.3 (Range: 0 – 138), the three month average was 61.4 (Range: 0 – 163), the six month average was 39.8 (Range: 0 -119). The highest possible score on LyQLI is 130, demonstrating a poor quality of life with a higher score. The pre-operative results: the average score was 67.5 (Range: 33 – 110). The four week post-operative results demonstrated an average score of 33.2 (Range: 0 -78), 3 month average was 33.3 (Range: 9-81), the six month average was 21.1 (Range: 0 - 46).

Conclusions
These preliminary results demonstrate that the use of liposuction in chronic lymphoedema has the potential to significantly improve the quality of life in this patient group. The study continues to follow these patients up, to collect long-term data on quality of life following liposuction for lymphoedema.

Abdominal free flap breast reconstruction outcomes and cost analysis: a review of 172 consecutive cases

Mr K Y Wong, Mr T Paterson, Mr K Alame, Mr S Lee, Mr C Durrant, Mr S Heppell
Salisbury NHS Foundation Trust

Introduction
The deep inferior epigastric artery perforator (DIEP) free flap is considered the gold standard for autologous breast reconstruction. However, its economic viability remains controversial. We present the outcomes and cost analysis of abdominal free flap breast reconstruction (FFBR) at a single hospital.

Methods
All abdominal FFBRs performed (July 2010-September 2014) by the senior authors were evaluated. Outcomes including hospital stay and complications were retrospectively correlated with patient demographics, comorbidities, tumour characteristics, use of adjuvant therapy, reconstruction type, surgical technique and timings. Actual costs were compared with reimbursement from Health Resource Group tariffs associated with each episode of care. Cost estimates for staffing, consumables, equipment, overheads and inpatient bed stay were provided by our finance department.

Results
A total of 172 patients with mean age 52 years (range 28-79) underwent 193 FFBRs (21 bilateral, 151 unilateral; 110 delayed, 83 immediate) including two transverse rectus abdominis myocutaneous (TRAM),seven muscle sparing TRAM, six superficial inferior epigastric artery and 178 DIEP flaps. Mean total theatre time was 331 min (unilateral delayed), 339 min (unilateral immediate) and 452 min (bilateral). Average inpatient stay was 4.4 days. Complications occurred in 31 patients (18%) including three flap failures (1.6%). Compared to received reimbursement, the average actual costs for unilateral delayed (£4540), unilateral immediate (£4787) and bilateral (£6205) FFBRs resulted in net profits of £2899, £2652 and £1367 per case respectively.

Conclusion
Our study allowed us to identify areas to improve service delivery and efficiency.

Is Sentinel Lymph Node Biopsy warranted for all desmoplastic melanomas? A systematic review of the literature

Mr J Dunne, Dr E Woods, Ms J Steele, Ms J Odili, Professor B Powell
St George's Hospital

Introduction and Aims
Desmoplastic melanoma (DM) is an uncommon malignancy, typically presenting at an advanced stage. It has a high local recurrence rate with less frequent nodal metastasis compared to other primary

cutaneous malignant melanomas (MM). DM can divided into pure and mixed histological subtypes, with pure DM initially reported as rarely metastasising to regional nodes. However, three recent series report the incidence as higher than previously published.

The aim of this systematic review was to determine whether SLNB is warranted for all cases of DM.

Material and Methods

A systematic review of SLNB in DM was performed in June 2015. MEDLINE, PubMed, and the Cochrane database were searched. Relevant journals were hand-searched, and reference lists reviewed. All papers with content on both DM and SLNB were included. Review articles and duplicate patient population studies were excluded.

Results

Seventeen studies included 1519 patients having SLNB for DM, of which 99 were positive (6.5%). Rationale for offering SLNB was poorly reported. 145 patients had elective lymph node dissection, of which 14 were positive for metastatic disease (9.7%). Seven studies compared positivity rates between mixed and pure DM. 276 patients with mixed DM had SLNB, of which 39 were positive (14%). 327 patients with pure DM had SLNB, and 17 had micro-metastases (5.2%).

Conclusions

SLNB is considered routinely in cutaneous MM where positive rates are greater than 10%, reflected by new National Institute for Health and Clinical Excellence (NICE) guidance withdrawing routine SLNB in thin MM (<1mm). Incidence of positive SLNB in mixed DM suggests the procedure should be offered routinely for these patients, however the literature does not support SLNB for pure DM.