Summer Scientific Meeting 2016- Free Paper abstracts

(abstracts are listed in alphabetical order by presenter surname)

Dog bites in the UK: an increasing burden for the Plastic Surgeon?

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Introduction

Dog bites are commonly managed by UK Plastic Surgeons. Multiple surgical debridements, reconstruction and inpatient stays for intravenous antibiotics incur significant costs to the health service. We evaluated trends in UK hospital admissions of patients with dog bites to assess the burden that these present to NHS Plastic Surgeons.

Methods

Data was extracted from the Health and Social Care information Centre database relating to NHS hospital attendances and admissions in England with dog bites between March 2013 and February 2015. Data was collected then analysed on Microsoft Excel and Access.

Results

14,010 admission episodes for dog bites were recorded over this period, of which 52% were admitted under Plastic Surgery. The number of admissions in the 12 months to March 2015 was 7,227, an increase of 6.5% on the previous year. The peak month of occurrence was July (745 admissions), followed by August (687 admissions). Females were more likely to be admitted compared to males (12.7 versus 9.2 per 100,000). Those most commonly affected were children aged between 0-9 years, most commonly with open wounds to the head; followed by those aged 40-49 years, with injuries most commonly to the hand and wrist. Those from more deprived areas were 2.8 times more likely to be admitted with dog bite injuries.

Conclusion

Dog bites present a significant burden on NHS Plastic Surgery departments. Children are at greatest risk. Surgeons must be aware of these trends and get involved in implementation of nationwide preventative strategies; awareness campaigns and education to reduce the incidence and improve care of these potentially devastating injuries.

Discrepancies between incision and excision biopsies

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Introduction

Biopsy provides histological diagnosis of skin lesions, guiding management. Anecdotal departmental

evidence suggested discrepancies between biopsy and excision histology. Such inaccuracies have potential for inappropriate management. We aimed to investigate the incidence of these discrepancies and to determine whether any harm came to patients.

Method
A 12-month retrospective study was conducted at a tertiary referral skin cancer service in the North West of England between 31 December 2013 and 30 December 2014. Biopsy and excision histology was compared. Data was collected using an electronic patient record (EPR) and analysed using SPSS v19.

Results
873 lesion received surgical management. 12 patients were excluded as no data could be found. 164 lesions underwent biopsy prior to excision.

29 patients (17.7%) demonstrated a difference in biopsy and excision histology.

20 patients had BCCs excised with a different morphological subtype demonstrated on excision and incision biopsy. Five patients underwent further formal excision on benign lesions.

One patient had an excision of an actinic keratosis and reconstruction with split thickness skin graft.

One lesion demonstrated squamous cell carcinoma (SCC) on biopsy but basal cell carcinoma (BCC) on formal excision.

Conclusion
An apprecible difference in histology was noted. This may be due to the small amount of tumour sampled which may not represent the whole lesion. We demonstrate unnecessary excision of benign lesions, which could have been managed conservatively. Differences in subtypes of skin cancer can effect excision margins required and the reconstruction. All patients followed up showed no evidence of recurrence and did not require any further surgery.

Multiple Pilomatrixoma: an early cutaneous marker for Myotonic Dystrophy and Gardner's Syndrome

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Introduction
Pilomatrixoma is one of the most common paediatric skin neoplasms presenting to Plastic Surgery. It is considered a benign tumour of hair matrix derivation, almost always occurring as a solitary calcifying subcutaneous nodule

Pilomatrixoma is treated by simple excision. Following our encounter with a rare case presenting with multiple pilomatrixoma and short stature, we felt the need to raise awareness that multiple

pilomatrixomas may be an early cutaneous manifestation of myotonic dystrophy, which if undiagnosed could lead to life-threatening complications from general anaesthesia.

Methods
Literature review with relevant studies being identified through OvidSp Medline, Cochrane library and the US National Library of Medicine resources in December 2015

Discussion
Multiple pilomatrixomas are rare, cases should raise suspicions of potential associations with Myotonic Dystropy, Gardner's syndrome, Adenomatous Polyposis Coli, Turner syndrome, Rubinstein-Taybi syndrome and sarcoidosis.

From the 29 case reports of multiple pilomatrixoma with myotonic dystrophy (MD), 6.9% had no prior family history. MD is a multisystem disease in which general anaesthesia may be complicated by arrhythmias, exaggerated drug effects, respiratory failure and myotonic crises

Conclusion
There is grade-IV evidence to link an association between MD and multiple pilomatrixoma as an early cutaneous marker. Some pilomatrixomas have mutations in the beta-catenin gene 9, which share a pathway with MYH-associated polyposis. Plastic Surgeons receiving referrals with multiple pilomatrixomas should refer them for genetic mapping preoperatively due to its associated anaesthetic risks, and possible predisposition to colorectal cancer.

Keeping pace with the media: a case of giant hogweed burns and literature review

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Introduction
Phytophotodermatitis is almost exclusively reported in the dermatological literature, but may progress to a chemical burn. We have seen an increase in the number of cases of burns caused by giant hogweed in the summer of 2015 at our burns centres; this has been accompanied by widespread local and national reports of cases in the media. We report a typical case with medical illustrations, and present a literature review.

Case
A 27-year-old female presented with a 2 week history of intermittent contact with giant hogweed when horse-riding. She initially noticed erythema and blisters on her forearm that progressed over the subsequent 4 days. She had sustained a 1% TBSA superficial dermal burn to the dorsal aspect of her forearm with some deep dermal areas. These were dressed with atraumen and flamazine and elevated. Microbiological swabs were negative. Her wounds were reviewed weekly and were healed by

3 weeks. At 6 weeks post injury she had a full range of movement but her scars were raised and hyperpigmented, requiring a pressure garment and cosmetic camouflage.

Discussion
The last review of plant burns was 20 years ago. There is a lack of awareness of this mechanism of injury, and the aetiology may not be immediately apparent to the patient. Furthermore, it has previously been mistaken for non-accidental injury in children. Awareness will prompt adequate first aid. Consider phytophotodermatitis when vesicles are present in a non-dermatomal distribution on sun-exposed areas or when wounds occur in streaks that are otherwise unexplained.

Conclusion
The media have begun to educate the public about plant burns. This review and case is timely to raise awareness to burns MDTs. This will aid accurate diagnosis and prompt appropriate treatment.

Deep sternal wound infections: a two year analysis of a regional centres practice and an algorithm of management

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Aims
Deep sternal wound infections (DSWI) cause significant morbidity and mortality. Patients with Pairolero classification 2 DSWI may suffer from sternal osteomyelitis and mediastinitis. Few guidelines exist for this subset of patients. The aim was to assess causative microbiology and compare practice with management standards for osteomyelitis.

Methods
All patients with DSWI between 2012 and 2014 were included in a retrospective review. Case notes and microbiology results were assessed to determine management strategy, causative organism and 30-day mortality.

Results
18 patients (14 male) were included. 6 had 1st time aortic valve replacement (AVR), 4 CABG+AVR, and the remainder MVR +/- CABG. Median age was 72, and median BMI 29. 6 were category 1 and 12 category 2. 10 (7 were category 2) were treated with VAC and IV antibiotics alone. 8 had operative management. Skin flora were the most common causative organisms. Type of micro organisms isolated and correlations with BMI, smoking and other demographics was made. Outcomes are shown below:

30 day mortality	1 (5.6%)
Overall mortality (All type 2)	3 (16.7%)
Of which treated with surgery	2
Of which fluid/pus sample sent	3
Of which sternal sample sent	0
Pus/Fluid for microbiology	18 (100%
Sternal samples for microbiology	1 (5.6%)
Soft tissue samples for microbiology	7 (38.9%)

Conclusions

DSWI can have low mortality even when managed conservatively. Rationalisation between osteomyelitis standards and current management is required. Larger studies may assist in developing a consensus on optimal management of DSWI. We present our results from a regional centre and provide an algorithm of care for these patients.

Readability of patient information leaflets from the British Association of Plastic Reconstructive and Aesthetic Surgeons

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Introduction and Aims

Research suggests that frequently, during consultations, many patients fail to retain up to half of the information given to them. Patient information leaflets are vital in constructing a good base of knowledge and understanding, allowing patients to make informed decisions about their management and treatment. The aim of this study is to assess the readability of patient information leaflets available on the British Association of Plastic Reconstructive and Aesthetic Surgeons website

Materials & Methods

Patient information leaflets were downloaded from the British Association of Plastic Reconstructive and Aesthetic Surgeons website, and analysed using various readability indices, including Flesch

Reading Ease Score (FRES), Flesch-Kincaid Grade Level (FKGL), Simple Measure of Gobbledygook (SMOG) test, Coleman-Liau Index (CLI), and Gunning Fog Index (GFI).

Results
A total of 32 patient information leaflets were analysed. The mean readability scores were as follows: FRES, 52.1 (95% CI 49.7-54.5); FKGL, 10.7 (95% CI 10.3-11.1); SMOG, 10.1 (95% CI 9.8-10.4); CLI, 12.7 (95% CI 12.3-13.1); GFI, 13.5 (95% CI 13.0-14.0). Based on these results, none of the patient information leaflets analysed were written at or below the recommended sixth-grade reading level.

Conclusion
The results suggest that patient information leaflets available on the BAPRAS website are written at a level too advanced for the average adult to read and understand. Therefore, the average patient is not likely to benefit from patient information leaflets available, limited by its readability.

Hip disarticulation and free flap reconstruction for extensive lower limb arteriovenous malformation in SOLAMEN Syndrome

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SOLAMEN syndrome is rare subtype of Cowden syndrome (a PTEN mutation syndrome) with distinct clinical features including segmental overgrowth, lipomatosis, arteriovenous malformations, and epidermal nevus. There are only a few isolated cases reported in literature.

We present a 13-year-old girl with segmental overgrowth of the left lower limb complicated by non-healing tissue necrosis and infection of the lower leg and foot. MRI revealed extensive arteriovenous malformation with lipomatosis extending from the pelvis to the foot. DSA confirmed that the disease was originating from the internal and external iliac vessels. Following pre-operative embolization of the internal iliac artery was, a hip disarticulation was performed to decrease the burden of disease; the exposed pelvic bone defect was reconstructed with an extended free latissimus dorsi and serratus flap.

We will discuss the numerous challenges faced in the management of this disease.

Cosmetic breast surgery MDT: improving the quality of care for aesthetic breast patients

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Introduction
Breast augmentation continues to be the most commonly performed cosmetic operation with breast

reduction and mastopexy also increasing. The Keogh Report raised significant concerns about the quality of care for aesthetic patients.

Methods

We established an independent private breast MDT meeting in 2013, including 3 Consultant Breast Surgeons, 1 Consultant Plastic Surgeon and 2 Breast Care Nurses. This discusses all breast cancer cases including oncoplastic planning. In early 2015, we began discussing all cosmetic cases on a weekly basis. Patients are discussed pre-operatively and post-operatively with case notes and high quality photographs. Photographs are taken at the second pre-operative consultation. Pre-operative cases are discussed in the MDT before surgery. Outcomes are recorded formally.

Results

So far, 52 patients have been discussed in the MDT. 26/27 (96%) pre-operative cosmetic cases were discussed prior to surgery; one patient was not discussed pre-operatively, as the time between the second pre-op consultation and surgery was too short. The majority of cases were deemed reasonable requests for surgery with a suitable technique. 5/27 (19%) patients had their management changed after review. One patient was declined surgery, due to co-morbidity. Four complex cases generated significant discussion, which led to altered techniques to optimize the cosmetic outcome.

Conclusion

We believe that this is one of the first cosmetic breast MDTs. We recommend at least a fortnight between the final pre-operative consultation and date of surgery to allow review by the MDT. Shared discussions have improved the quality of care for our aesthetic patients. Other centres may wish to implement a similar MDT.

Have you actually got their consent? an update on consent and its impact on the procedure of consenting and medical practice

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Obtaining informed consent is a legal and ethical necessity before treating a patient deriving from the principle of autonomy. The General Medical Council (GMC) last updated their guidance document "Consent: patients and doctors making decisions together" in June 2008. They make clear that the duty of a doctor involves working in partnership with patients and giving patients the information they want and need. However, expecting a patient to know what information they need to make informed decisions around consent appears less straightforward.

Following a recent Supreme Court judgment of Montgomery v Lanarkshire Health Board in March 2015, it brings to light several factors that every medical practitioner must consider to inform the decision making between doctor and patient. We will take you through the case and Court's judgment, how this differs from previous court ruling practices and how this might impact on our current consent procedures for delivery of care and operations, particularly with regard to plastic surgery.

A new term "material" risk has been introduced as any risk a reasonable person in the patient's position would be likely to attach significance to it, or if the doctor is or should reasonably be aware that their patient would be likely to attach significance to it. Previous rulings of Bolam (1957), Siddaway (1985), Bolitho (1988) have seen developments of progression of legal opinion on the consent process. There were also the rulings of the case of Smith (1994), and Pearce (1999) influencing these changes. The implications of this ruling which is applicable throughout the United Kingdom would influence the consent process, potentially having wide reaching influence on the way that we practice medicine.

FTSG on the face: do we really need tie over dressings or quilting sutures?

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Introduction

Full thickness skin grafts (FTSGs) are commonly used in reconstruction of small defects in the head and neck region. Numerous inset techniques have been used in order to ensure graft take and avoid haematoma formation.

Tie-over dressings may obscure vision when used in areas such as lower eyelids or the medial canthus. They often dry out and adhere to the graft surface resulting in pain and increased risk of graft failure at the first dressing change. Quilting sutures may also increase the risk of haematoma and skin puckering.

We present a case series whereby FTSGs were inset without the aforementioned methods with good results.

Method

FTSGs were taken from the supraclavicular area in all cases. Thorough haemostasis was performed before insetting FTSGs with a running 5-0 Vicryl Rapide. A smear of chloramphenicol (CPL) eye ointment was applied to the graft surface. No additional quilting sutures or dressings were used. Patients were advised to continue daily application of CPL for 2 weeks.

Results

We used this regime in 27 cases after excision of facial skin cancer lesions: 15 to nose, 5 to medial canthus, 2 to lower eyelid, 2 to antihelix, and 3 to temple. Two patients were on aspirin. All patients had 100% graft take after a week and no complications at 3-4 weeks.

Conclusion

The combination of atraumatic handling of FTSGs, minimal but appropriate suturing, attention to haemostasis, and the moisturising effect of CPL enhance plasmatic imbibition. We feel that this is essential in the process of FTSG take, especially in the face. This was reflected in our cases with full graft take and no complications. However, a larger series may be required to demonstrate the viability of our regime, taking also patients' compliance into consideration.

Auricular wedge excision made easy

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Introduction
Disruption in the helical rim can result from trauma or oncological resections. Numerous techniques have been described in the past to reconstruct defects arising in this area.

Wedge-shaped full thickness excision is considered a simple, easy and effective method of reconstruction in some cases. This is commonly used for small defects (‹1.5cm) of the helix and antihelix. We describe a simple, quick and neat technique to perform auricular wedge excision. We used this technique in 42 skin lesions located at the helical rim.

Technique
The lesion is marked with the appropriate margins under loupe magnification. The superior and inferior margins are extended medially until they meet on both the anterior and posterior aspects of the ear. This forms an isosceles triangle with its base at the helical rim.

We use a number 11 blade to penetrate and cut along the markings from anterior to posterior and medial to lateral through all layers.

At the wedge tip a 2-3mm circle of cartilage without skin is excised to prevent dog-ear formation. This is essential when the wedge tip is greater than 30°.

Conclusion
The use of number 11 blade instead of the 15 blade added more simplicity and accuracy to the excision margins. The combination of the penetrating and cutting action of the 11 blade has improved the quality of the cut margins. In addition, the advantage of the simultaneous anterior to posterior symmetrical resection is reflected in the neat cut edges and aided closure. This prevents under or overcutting the posterior wall layers as may happen whilst using the 15 blade.

The use of the 11 blade in our experience had made auricular wedge resection quick and easy. It also produced a reliable aesthetic outcome even in the hand of less experienced surgeons.

Paediatric necrotising fasciitis: an English single centre plastic surgery experience

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Introduction and Aims
Necrotising fasciitis is a rare soft tissue infection, fatal in over 50% of children affected. This study

describes the aetiology, management and outcomes of all children admitted to the paediatric intensive care unit (PICU) with necrotising fasciitis in a single tertiary centre in England.

Material and Methods
All paediatric patients admitted to PICU from 2000-13 with necrotising fasciitis were identified from a prospective database. Patient records were reviewed, demographic and clinical data collected. The outcomes were: mortality, number of operations and long-term function.

Results
Eleven children were admitted, 1.4% of those with sepsis (n=773), of median age 1.6 years. Eight were girls. 73% had recent varicella zoster infection (median 1.88 years), and 3 (median 10.8 years), septic arthritis, insect bite and thumb abscess. One child was immunodeficient, 3 had co-morbidities and 7 were fit and well. Six cases were truncal, 2 axilla/upper, and 3 lower limb.

Group A streptococcus was isolated in 91% of cases, one MSSA and one PVL staphylococcus aureus. There was a median of 6 operations (IQR 4-9.5). No children died during admission or since for those with ongoing follow up (median 3.9 years, n=9). Of these 9, 1 was discharged with a good outcome, 3 with healed scars and open appointments (of which 1 has returned for revision), 2 with scars but declining surgery, 2 growth arrest of the affected limb and 3 needing outpatient scar revision.

Conclusion
Necrotising fasciitisis a life-threatening illness, rare in children. This series describes the presentation, management and outcomes of an English series, where no children died in contrary to the literature. The introduction of routine vaccination against varicella may benefit the local paediatric population.

Plastic Surgery and staphyloccus aureus sepsis in children

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Introduction and Aims
Staphyloccus aureus (SA) infections vary from mild to life-threatening in children. Plastic surgical input is varied and not well described. This study aimed to determine the rate of SA in paediatric sepsis and the presentation, management and outcome in those requiring plastic surgical involvement.

Material and Methods
All paediatric patients admitted to a single tertiary centre paediatric intensive care unit from 2000-13 with sepsis were identified from a prospective database. Patient records were reviewed, and all patients with SA infection and plastic surgical consult included. The outcomes were: mortality, number of operations and long-term function.

Results
Of 773 infants and children admitted over 13 years with sepsis, 52 (6.7%) had SA sepsis. 17 were reviewed by plastic surgery. The median age was 1.7 years (IQR 1.1-5.1 years) and length of PICU stay 4 days (IQR 2-11 days). Two patients died.

The most common cause was cellulitis (5/17). Patients with tissue loss (n=8) were compared to those without (n=9). The former were younger (1.4 cf. 4.1 years) and stayed in PICU for longer (7.5 cf. 2.6 days). Haemodynamic and ventilator requirements was similar. Co-infections included PVL SA (n=2), necrotising fasciitis (n=1) and varicella (n=4). All tissue loss patients required debridement: once (n=2), multiple times (n=6), with VAC (n=3) and lower limb fasciotomies (n=1). Further reconstruction was required in 2 cases: a regional gastrocnemius flap and vascularised fibular graft to a humeral gap.

Conclusion
SA infection is a rare cause of severe septic shock in children, of which a small number present to plastic surgery. They are a heterogenous group, needing to be assessed and treated on an individual basis.

Are we selling ourselves short? Cost coding in Plastic Surgery breast services in the North Bristol NHS Trust

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Introduction and Aims
Anecdotally it is suggested that discrepancies exist in the coding used for the costing of services provided and those actually undertaken, resulting in financial loses. Unless a procedure or service is clearly and explicitly documented they can be difficult to extract from the sometimes disorganised and illegible case notes. The authors aimed to substantiate these claims of inaccurate cost coding for outpatient procedures in plastic surgery breast patients.

Material and Methods
All procedures undertaken in the outpatient department are recorded by the specialist nurse practitioners. The authors compared the numbers for the most common procedures over a 12-month period against those coded in the finance department records.

Results
The approximate total number of procedures performed between 1 August 2014 and 31 July 2015 were: “Dressing change” 2080; “Removal of sutures” 780; Steri-strip exchange 780; and “wound debridement” 300. The respective numbers coded for were: “Dressing change” 4; “Removal of sutures” 14; Steri-strip exchange 1; and “wound debridement” 2.

Conclusion
The total amount that was paid to the department for this 12 month period was £5,702. If all procedures

had undergone appropriate coding that amount could have increased to £631,000. The authors proposed adhesive labels, which are attached to the outpatient proforma sheet on the patients' notes, in order to highlight any procedures for appropriate coding. Initial reports show the labels have been well received by the outpatient and coding staff. The authors implore all NHS departments to ensure they have a robust coding system to ensure they receive accurate payment for services rendered.

Strapping up: management of paediatric Salter Harris II hand fractures

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Background
Management of paediatric stable Salter Harris type II (SHII) fractures can vary from buddy-strapping to immobilisation for an undefined period. Our practice include buddy-strapping for 2 weeks with self-directed range of movement (ROM) exercises. Patients with residual functional deficits are then managed with formal hand physiotherapy.

Methods
Prospective data was collected for a six month period on patients aged 16 years or younger, with SHII hand fractures.

Exclusions
› 30° angulation, › 15° (finger) rotation, › 20° (thumb) rotation, › 20% displacement

Standard management
All were managed with buddy-strapping and collar/cuff elevation for 2 weeks; parents were instructed to reduce dressings after this. Patients were advised to move the affected digit within a ROM with an aim to enable the fingertip to reach palmar crease. Contact sports was avoided for 4 weeks. An open clinic appointment was offered if they became concerned.

Results
27 consecutive patients with a mean age of 10 years (7-15 years) were reviewed. Six patients injured the proximal phalanx of the thumb. 16 patients sustained SHII fractures in their fingers: 12 proximal phalanx, 7 middle phalanx, 2 distal phalanx. One patient sustained multiple SHII fractures to a digit. 22 patients were in full function between 1 and 8 weeks. 17 patients removed buddy-straps by 2 weeks. Only 2 were not back to normal at 8 weeks.

Conclusions
Isolated stable, minimally displaced SHII hand fractures can be treated conservatively with advice sheet, buddy-strapping and exercises without outpatient follow-up. This reduces hand clinic and physiotherapy attendance for patients which can be time-saving; it also relates to reduced cost and resources without the compromise of a good clinical outcome.

'Sweaty Betty'- A stain on her gym wear

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Introduction
It is well known that some dyes used in sentinel node biopsy can cause coloured sweat. It would not be expected that this process would persist beyond a few days or weeks. It is therefore necessary to consider other diagnoses when faced with a patient who presents with coloured sweat months or years after breast surgery. Apocrine chromhidrosis is a very rare condition that is characterised by coloured sweat due to the presence of higher-than-normal concentrations of lipofuscin in apocrine glands. We describe a female with a diagnosis of apocrine chromhidrosis who presented to a Plastic Surgery breast clinic with blue-coloured sweat in her inframammary fold (IMF) more than 2 years after her initial breast cancer treatment.

Case report
A 56 year old female who underwent right mastectomy and lymph node sampling for invasive ductal carcinoma of the breast in 2012 presented to an outpatient clinic in mid-2015 with a 6 month history of blue-coloured sweat, initially in her left IMF and subsequently right axilla and bilateral groin area. She had completed right breast reconstructive procedures more than 6 months prior and was otherwise well. Apart from her surgery, the only other change was commencement of tamoxifen after breast cancer diagnosis. She underwent biopsy of the right axilla and groin area which confirmed the presence of lipofuscin in the apocrine glands.

Comments
Because apocrine chromhidrosis is such a rare condition, the exact causes are yet unknown and too few cases exist for cohort studies. Drugs have been implicated as a cause and it is possible that the anti-oestrogen drug tamoxifen may play a role. Interestingly, this case is the first report in the literature of confirmed apocrine chromhidrosis of the groin region.

Case report on prophylactic venous supercharged radial collateral artery perforator propeller flap: improved outcomes in perforator propeller flaps

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Introduction
Although perforator propeller flaps provide safe and reliable reconstructive option in extremity reconstruction, partial flap necrosis, particularly at the tip of the flap occurs frequently following rotation as a result of venous congestion. A degree of venous stasis occurs initially in most cases and it can be difficult to predict whether this will only be transitory. Prophylactic venous supercharging, utilising superficial vein at the tip of the flap is the technique we designed to overcome this problem and improve outcomes.

We report on two cases of prophylactic venous supercharged radial collateral artery perforator propeller flaps (RCAP) for upper arm and forearm reconstruction from our institute.

Result

A 57-year-old man with 1.6mm Breslow thickness melanoma of his left upper dorsal forearm underwent 2cm wide local excision and reconstruction of defect with a 13x7cm RCAP flap harvested from upper arm including dissection of superficial vein near the tip of the flap. The flap was rotated 180 degrees on a single perforator, while the superficial vein was anastomosed to the previously dissected vein at the edge of a surgical defect. Another case of a 73-year-old female with recurrent melanoma on her right upper arm underwent a 2cm wide local excision and reconstruction with RCAP flap harvested from the dorsal proximal forearm based on a single perforator. The flap was rotated 130 degrees anti-clockwise and superficial vein at its tip anastomosed to a branch of cephalic vein. No venous congestion was observed in either case following venous supercharging. The donor site was closed primarily. Healing was uneventful and 100% of the flap surface area healed primarily with full range of motion and excellent aesthetic outcome.

Conclusion

Based on our experience, we propose the prophylactic venous supercharged RCAP propeller flap as a safe and reliable option in reconstructing challenging defects in upper arm, forearm and elbow region.

Correcting the over-corrected gynaecomastia – a novel technique using stacked acellular dermal matrix

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The 'saucer–shaped deformity' is the undesirable outcome following over-resection of gynaecomastia. Correction can be challenging – lipomodelling may be unfavourable or unpredictable, and autologous grafts often require additional unwanted scars.

We present a case of unilateral gynaecomastia over-resection where discs of acellular dermal matrix (ADM) were interwoven in the subdermal, intra- and interpectoral planes to correct the areolar concavity.

A 34-year old man presented to clinic requesting correctional chest surgery. He had previously undergone glandular excision for Simon's grade IIA bilateral physiological gynaecomastia at age 18, with a subsequent procedure shortly afterwards for unilateral left recurrent gynaecomastia. This second operation had left him with a distorted nipple, visible concavity, and adherence of the areola to the underlying muscle. He had no comorbidities of note, and was a non-smoker.

Under general anaesthetic, the nipple-areolar complex was released from the underlying pectoralis muscle via the old hemi-periareolar scar. Discs of porcine ADM were created using the diameter of the patient's areola as a template. Using a muscle-splitting technique, individual discs were layered into

the subdermal, intramuscular, interpectoral and subpectoral planes. These stacked discs were sutured into a single secure unit, the muscle repaired, and the skin closed. A sponge dressing was applied for pressure and prevention of shear force.

The post-operative photographs at 17 months show maintained projection of the areola with a natural contour that the patient is delighted with.

Preventing pressure alopecia with a pillow

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Introduction and Aims

Pressure alopecia results in a distressing cosmetic disfigurement, often permanent. Prolonged surgery can result in this rare complication, and is preventable. Currently, the causative factor is thought to be scalp pressure combined with exacerbating intrinsic and extrinsic elements. Occipital pressure is thought to be relieved by head rings and position changes. We hypothesised that there is a difference in pressure sustained depending on the type of head ring used. Our aim was to establish occipital pressure measurements with three common head supports in a general anaesthetic setting.

Materials and Methods

Both gel and foam doughnut head rings were compared with two stacked hospital pillows. Pressure sustained through the occiput was recorded at 20 and 120 minutes with the X-SENSOR system.

Key Results

Graphical representations of the three mediums, at two time intervals, demonstrate differences in pressure sustained at the occiput.

This study demonstrates an important finding. Prolonged procedures will result in unacceptably elevated occipital capillary pressures, when gel or foam head rings are used.

Conclusions

These findings would support consideration to use two stacked pillows in prolonged surgical procedures. Beyond two hours, repositioning to relieve pressure, as supported by the current literature would be recommended

Patient-reported outcome measures following DIEP flap breast reconstruction

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Introduction
Patient-reported outcome measures (PROMs)provide an insight into the patient's perception of outcome and offer a new perspective beyond traditional surgical outcome measures such as morbidity and mortality.

Methods
We collected PROMs from patients 12-24 months post breast reconstruction with DIEP flaps. BREAST-Q questionnaires were distributed by post and data analysis was completed using free BREAST-Q software. Each scale is scored 0-100, with a higher score indicating higher satisfaction or quality of life.

Results
Questionnaires were sent to 58 patients and there were 32 respondents (55%). The cohort included 25 unilateral and 7 bilateral DIEP flaps. Timing of reconstruction was delayed (19), immediate (12) or combination (1). Three patients underwent risk-reducing surgery. Overall satisfaction with outcome was high: breasts 79; nipples 81; overall outcome 88. We noted significantly lower overall satisfaction for immediate (78) versus delayed (94) procedures, and the potential reasons for this will be discussed. There was no significant difference for unilateral (89) versus bilateral (82) procedures. Overall quality of life scores were good: psychosocial well-being 82; physical well-being 84 but with lower sexual well-being 64. Satisfaction with care from surgeon (98) and medical staff (94) was high. However, satisfaction with the information provided was lower (81).

Conclusion
PROMs data has offered a useful insight into our patients' satisfaction with care and outcome, and into quality of life following DIEP flap breast reconstruction. The information expands our potential to inform patients and create realistic expectations. Furthermore, it has directed potential for quality improvement, particularly in the information we provide.

Development of a bench top 3D bioprinter for use by Plastic Surgeons

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ReconRegen Research Group, Welsh Centre for Burns and Plastic Surgery

Introduction
The American Society of Plastic Surgeons highlighted the importance of tissue engineering as the future of reconstructive surgery. Recent advances in cell biology, biomaterials, nanotechnology, and biomanufacture methods such as 3D bioprinting, place surgeons in a position where they could conceivably engineer custom made tissue in the laboratory. 'Bio'printers, unlike their portable

traditional 3D printer counterparts, are capable of precisely depositing biological materials in a layer by layer fashion, often larger, prohibitively expensive and situated away from clinical researchers.

Methods
As a result of multidisciplinary collaborations (engineers, cell biologists and surgeons) the team have designed and built a novel, extrusion-based 3D bioprinter for experimental use by Plastic Surgeons. We present the manufacture process of a bench top, hood compatible, cost effective, able to get Plastic Surgeons trained to use in optimisation.

Results
Our first bioprinter, the '3Dynamic Systems alpha' consists of:

1. Variable speed syringe pump driver
2. Single head digital dispenser (belt drive system)
3. 3-axis computer numerically controlled chassis
4. Inbuilt stem cell incubation platform

The system was used to deposit biogels, produce accurate biological structures on x, y and z axis, to a 10μm degree of accuracy and tested for engineering 3D tissue systems. In addition, we demonstrate that the printing process is compatible with stem cell survival and metabolic activity.

Conclusion
A clinician-led plastic surgery tissue engineering research group has been able to gain sole access for use benchtop bioprinters that meet essential criteria of sterility, low cost, portability and ease of use by surgical researchers.

Metastatic basal cell carcinoma in Gorlin Syndrome

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Introduction and Aims
Gorlin syndrome is an uncommon autosomal dominant multisystem disorder characterised by a wide range of developmental abnormalities and a predisposition to neoplasm; typically with an early onset of multiple BCCs. Metastatic BCCs (mBCC) is rare (0.05%). We present a series of mBCCs in Gorlin syndrome with a review of the literature.

Methods
Four patients (3 males, 1 female), with a mean age of 33.8 years at the time of their diagnosis of Gorlin syndrome who developed metastatic BCCs were reviewed retrospectively at a tertiary institution between 1980and 2015. Characteristics of the primary tumour and the disease survival were studied.

Results
All patients suffered primarily from head and neck BCCs. One patient had mosaic Gorlin syndrome

affecting the right hemiface. Locations of the primary tumour in three cases were the scalp (nodulo-cystic BCC), the mastoids (morphoeic and nodular BCCs) and the cheek (morpheoic BCC). In one case, the location was unclear. Two had regional metastasis whilst the others had distant metastasis. The mean time from its first presentation to metastasis was 13 years (range: 3-28 years). Three patients died from metastatic disease with an average age of 58.3 years. The mean time from metastasis to mortality was 5.3 months (range: 1-12 months).

Conclusions

Metastatic BCC in Gorlin syndrome is rare and potentially life threatening. It derives from pathologically aggressive BCCs of the head and neck that spread primarily by lymphatic drainage. Surgical excision and photodynamic therapy remain the main treatment within a multidisciplinary setting. Hedgehog signaling pathway inhibitors have demonstrated promising results, but their use can be limited by cost and the side effect profile.

Novel use of the profunda artery perforator flap in vulvo-perineal reconstruction

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Introduction and Aims

Reconstruction following a radial vulvo-vaginal resection remains a challenge. Successful reconstruction can significantly improve patient's quality of life. Common flaps used include gluteal flaps, pedicled pudendal thigh flaps and myocutaneous flaps. The choice is dictated by patient and operative factors. We describe the novel used of the profunda artery perforator (PAP) flap derived from the medioposterior thigh for reconstructing a large defect following a vulvo-vaginal resection.

Material and Methods

A 66 years old Caucasian female had a wide local excision of a left vulvar squamous cell carcinoma measuring 6 x 6 x 3.5cm. The residual defect, down to muscle and partly involving the vaginal wall, was reconstruction with a PAP flap from the left inner thigh.

Key Results

Ambulation was possible within two weeks of surgery. Three months later, the wounds have healed with excellent result and no complications.

Conclusions

The PAP flap provides an excellent option for extended vulvar reconstructions. It is reliable, versatile and offers a large thin skin paddle for coverage with minimal donor morbidity. Its anatomical contiguity to the recipient site minimises the dissection time. Harvesting the PAP flap preserves the alternative options for future reconstructions if required.

Perforator-only propeller anterolateral thigh flap for reconstructions around the knee

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Introduction and Aims
Soft tissue reconstruction around the knee joint can be challenging. Previous techniques described often do not meet functional and aesthetic ideals. We report a new technique of using a propeller based ALT flap for soft-tissue defects around the knee following the excision of cutaneous malignancies.

Material and Methods
Four patients (one male, three females), with a mean age of 53 years (range: 41-65) had Perforator-Only-Propeller (POP) ALT flap reconstruction following wide local excisions of melanoma around the knee between July 2014and December 2015. In each case, the distal most perforator along the line drawn between the anterior superior iliac spine and superolateral border of patella is identified with an audible-Doppler. Based on this perforator, the POP ALT flap was raised eccentrically and insetted to match the defect. The donor-site was closed directly.

Results
The largest flap raised measured approximately 25 x 6cm. All patients healed with excellent aesthetic and functional outcomes with no complications. They were ambulatory almost immediately post-operatively and returned to their activities of daily living within two weeks of surgery.

Conclusions
From our early experience, this technique is simple, reliable and versatile. A thin and pliable suprafascial flap with a large surface area can be safely raised based on the distal most ALT perforator, providing a superior aesthetic reconstruction whilst maintaining the function compared to the alternatives.

Case report: successful application of keratinocyte suspension using autologous fibrin spray

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Introduction
The back is a challenging anatomical area to resurface in acute burns due to its large surface area, its dependent position with the patient lying down and the shearing forces applied to any method of resurfacing employed. This case study presents the use of Vivostat® in resurfacing the back in conjunction with Recell® regenerative epithelial suspension. Vivostat® is a "novel patented biotechnological process that enables reproducible preparation of autologous Fibrin Sealant or Platelet Rich Fibrin without cryoprecipitation or the need for a separate thrombin component."[1]

Methods
A 29 year-old female sustained 27% total body surface area (TBSA) flame burns, including the whole back. This area was initially grafted with the sandwich autograft/allograft technique on day four post-injury, with approximately 80% graft take on day eight. Unfortunately, there was subsequent significant graft loss on the back proving to be a stubborn area to treat despite further grafting sessions. This challenge led to the decision to use Vivostat® and Recell® suspension to resurface the back.

Results
The patient only needed one session of resurfacing with Vivostat® and Recell® and went on to have full healing on the back.

Conclusions
NICE states that Recell® shows potential to improve healing in acute burns and we believe that its co-delivery with fibrin via Vivostat® allows for precise delivery of the fibrin suspended cells while minimising loss in the "run off" encountered when Recell® is just simply sprayed on, assisting the anchoring of keratinocytes to the wound surface and thus aiding in the treatment of challenging areas.

Reference
1. The Vivostat® System. Vivostat® website http://www.vivostat.com/products/the-vivostat-system

Patient outcomes of 'Arrow' flap and underlying peg cartilage graft nipple reconstruction following DIEP based breast reconstruction

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Introduction and Aims
We present our technique of nipple reconstruction using the 'Arrow' flap in conjunction with a peg-shaped cartilage graft, with patient scoring for outcome measures.

Material and Methods
The senior author carved the 'banked' cartilage graft into a peg shape using a 6mm punch biopsy and a scalpel to create a 'mast' and 'keel' to maintain projection. An 'Arrow' flap was elevated, the cartilage graft secured and the 'Arrow' flap inset. Patient data was collected using questionnaires for details of nipple reconstruction, tattooing and nipple projection, perceptions of nipple appearance, projection, sensation and overall satisfaction were measured using 1-10 (1 least and 10 most important).

Results
Overall 62 patients underwent 75 nipple reconstructions. Forty-nine patients used cartilage grafts (79%). Thirty-two patients underwent tattooing (52%).

Average reconstructed nipple projection was 4mm (1-9). Mean follow-up was 11 months (3-42). Patient questionnaires showed the score for importance of nipple appearance and colour was 7.7 (1-10), nipple

sensation was 4.1 (1-10) and nipple projection was 6.7 (1-10). Overall satisfaction was scored at 9.8 out of 10 (6-10).

Discussion
Our experience illustrates that use of the 'Arrow' flap with our peg cartilage graft successfully maintains nipple projection. Nipple appearance and projection were scored higher than sensation. Tattooing was found to reduce to projection but patients were pleased with the overall cosmetic outcome. Many described feeling 'normal' again and increased confidence levels.

Conclusion
Use of 'Arrow' flaps in conjunction with our peg cartilage graft for nipple reconstruction has produced promising results with positive patient feedback.

Atypical fibroxanthoma: clinical and histological features in the Bradford population

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Bradford Teaching Hospitals NHS Foundation Trust

Introduction and Aims
Atypical Fibroxanthoma (AFX) is a rare low-grade skin malignancy. This study aimed to analyse the local cohort of confirmed cases to identify susceptibility, anatomical location, and rate of recurrence, local invasion and metastasis. Positive and negative immunohistochemistry findings were also noted.

Material and Methods
Patients with confirmed histological diagnosis of AFX upon wide local excision were recruited from a five-year period. Histological reports and patient records were scrutinised to obtain demographics, clinical and histological data.

Key Results
Nineteen cases were included. Mean age was 79.7 years. Gender distribution was 16:3 (male: female). Anatomical location included scalp (73.7%, n=14), forehead (5.3%, n=1), ear (5.3%, n=1), neck (5.3%, n=1), temple (5.3%, n=1) and cheek (5.3%, n=1). Local invasion of subcutaneous fat was noted in 21.1% of cases (n=4) and 10.5% (n=2) experienced recurrence. No metastases were reported. Positive immunohistological staining was found for CD10 (73.7%, n=14) and smooth muscle actin (52.6%, n=10).Negative immunohistological staining was found for AE/1/3 (94.7%, n=18) and Melan A (89.5%, n=17).

Conclusion
Patients are typically elderly males with a lesion usually on the scalp or sun-exposed areas of the head and neck. The common occurrence on the scalp suggests there may be a mutation within the cells of hair follicles. Although there is no marker or panel of markers specific to AFX, positive staining is

common for CD10 and smooth muscle actin and negative staining is common for AE/1/3 and Melan A. AFX remains a histological diagnosis of exclusion.

Atypical fibroxanthoma: the reliability of an incisional biopsy preliminary diagnosis

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Bradford Teaching Hospitals Foundation Trust

Introduction
Atypical fibroxanthoma (AFX) is a rare low-grade skin malignancy, normally presenting as a rapidly growing nodule on the sun-exposed sites of the elderly. Despite the atypical histological appearance, the clinical behaviour is usually innocuous. The absence of specific immunohistological markers means AFX remains a diagnosis of exclusion. We aimed to analyse our local cohort of patients to identify suspected diagnosis prior to performing an incisional biopsy; the proportion of wide local excisions (WLE) subsequently confirming AFX, and; the alternative diagnoses confirmed upon WLE.

Methods
Patients with incisional biopsy histological diagnosis of AFX were identified from a 5-year period. Clinical diagnosis on the biopsy request form was noted. WLE reports were reviewed to assess the accuracy of the incisional biopsy findings.

Results
Twenty-two incisional biopsy reports diagnosed AFX.Subsequent WLE confirmed AFX in 63.6% (n=14) cases.18.2% (n=4) identified either dermal sarcoma, pleomorphic malignant fibrohistiocytoma, nodular malignant melanoma or sebaceous hyperplasia upon WLE.13.6% (n=3) had no evidence of AFX or other malignancy.One patient was lost to follow-up. Prior clinical diagnosis included: SCC (72.7%, n=16), BCC (45.5%, n=10), keratoacanthoma (9.1%, n=2), AFX (4.5%, n=1), angiosarcoma (4.5%, n=1), actinic keratosis (4.5%, n=1), granuloma (4.5%, n=1), “secondary deposit of other malignancy” (4.5%, n=1) and “lesion on scalp” (4.5%, n=1).

Conclusions
AFX is usually diagnosed incidentally, following incisional biopsy for a suspected SCC or BCC. Subsequent WLE will confirm AFX in ‹65% of cases. As such, an incisional biopsy report suggesting AFX should be treated with caution.

Glomus tumours of the digits: the ten-year Manchester experience

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Introduction
Glomus tumours are rare, usually benign neoplasms of the neuromyoarterial structure known as a glomus body. We evaluated the role of imaging, recurrence rates and clinical trends within our tertiary hand-centre.

Material and Methods
All patients undergoing surgical excision of glomus tumours from April 2005 – April 2015 were identified retrospectively from our coded reporting system. Demographic data, histological and radiological tumour characteristics were recorded.

Results
48 patients had a histological-proven glomus tumour. The median age was 55 (IQR: 44.5-64) with no difference between males and females. Thirty-five were found to be within a digit, most commonly from the left thumb (13%), with 20% from a nailbed. Nailbed tumours showed a strong female preponderance (71%).

Both USS (15%) and MRI (15%) were requested in equal numbers pre-operatively. Only 57% of the USS suggested the presence of a glomus tumour, whereas 71% of the MRI scans confidently demonstrated evidence of a glomus tumour.

We found a 6% recurrence rate from sites including: right forearm, left index finger and right middle finger. No pre-operative imaging was requested for these patients.

Conclusions
MRI is the gold-standard pre-operative imaging modality and should be used when recurrence is suspected, especially prior to further surgical treatment.

Outcomes and satisfaction with semi-elective day case hand trauma surgery

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Introduction
In 2003, the University Hospital Birmingham introduced a day case emergency hand trauma operating system. Appropriate patients are identified at assessment in accordance with strict selection criteria and return for their operation on dedicated hand trauma theatre lists. The service has been shown to improve efficiency and reduce patient complaints.

The aim of the study was to assess clinical outcomes and patient satisfaction with the service.

Material and Methods
Feedback questionnaires were distributed prospectively to patients on emergency hand trauma operating lists. Patients were contacted by telephone and case notes were reviewed at 30 days post-operatively. Analysis included patient demographics, injury sustained, operative management, complications and satisfaction results.

Key Results
Results were collected for 100 patients. Overall 93% would recommend the service. There were high levels of satisfaction with all aspects, including information provided (93%), pain management (83%) and comfort going home (86%). The vast majority did not need any further medical input prior to surgery.

99% were supplied with antibiotics in accordance with management protocols. 1.5% of patients with open injuries were treated for a post-operative infection. The mean time between assessment and operation was two days.

Conclusion
This study has shown that semi-elective day case hand trauma surgery is safe and effective as demonstrated by the low infection rates and high levels of patient satisfaction.

The rectus abdominis muscle advancement flap as a salvage option for chest wall reconstruction: a case report

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Introduction
We describe the superior advancement of a rectus abdominis muscle (RAM) flap, based on the deep inferior epigastric pedicle, as a salvage option for chest wall reconstruction.

Case report
A 57 year-old man underwent excision of a sternal chondrosarcoma, with resection of the lower two-thirds of the sternum and adjoining ribs. A large skeletal reconstruction was performed, requiring robust muscle coverage. Bilateral pectoralis major flaps were used for superior cover but a sizeable inferior defect remained.

As both IMAs had been sacrificed, the initial plan was to raise a right RAM flap, based on the eighth intercostal artery perforator. Intra-operatively, this was found to be insufficient to supply the flap so the reconstruction was salvaged by advancing the RAM superiorly, based on the robust DIEA. The incision was extended onto the abdomen and the RAM dissected free and detached from the pubic symphysis, leaving it attached only by the deep inferior epigastric pedicle, which was dissected to its origin. The eighth intercostal artery perforator was divided and the RAM advanced cranially by 12cm. There were no wound healing problems post-operatively.

Discussion
This previously unreported technique affords a great deal of intra-operative flexibility for chest wall reconstruction, particularly when the viability of the RAM pedicles is uncertain. A RAM flap can be partially raised at the same time as tumour excision, and the pedicles isolated. Where the SEA and eighth intercostal pedicles are not viable, the muscle can be advanced superiorly as described, without turning the patient. It is best suited to lower anterior chest wall defects, although the flap tip can reach the junction of the upper third and lower two-thirds of the sternum.

Systematic review: predicting adverse psychological outcomes following hand trauma

Miss E Ladds, Mr M Lamyman, Dr C Wade, Dr N Rekharti, Dr K Taylor, Dr J Quinlan, Dr N Redgrave
John Radcliffe

Introduction and Aims
Traumatic hand injuries represent a significant burden for individual patients and health care services. Such injuries are frequently accompanied by profound psychological symptoms. These may persist, delaying return to normal activities. Prompt intervention improves outcomes; therefore early detection of high-risk individuals is desirable. However, the most accurate and reliable screening tools and the timing for their application remain unclear.

Methods
A systematic search of Medline, EMBASE, CINAHL and PsychInfo identified 5156 English language papers reporting psychological outcomes (anxiety, depression, PTSD or chronic pain) following acute hand trauma. A shortlist of 90 was screened for inclusion by two independent reviewers. The prevalence of psychological disorders; sensitivity/specificity of predictive methods used and features of high-risk individuals were extracted by two reviewers using a standardized process.

Results
Nineteen studies were included, employing a number of different detection scales. Study heterogeneity prevented quantitative comparison. A high prevalence of all symptoms was seen, with diagnosis at 3 months most predictive for long-term outcomes. Chronic pain was a particular problem following amputations and was associated with anxiety, depression and PTSD. Pain catastophizing, particular injury types and presence of PTSD were associated with impaired function.

Conclusions
High levels of pain and psychological symptoms should be expected in individuals with acute hand trauma, particularly following amputation. Screening at three months using a variety of scales including the Pain Catatrophizing Scale may be effective at detecting those at long-term risk.

Hub and spoke network integration: streamlining the Plastic Surgical patient pathway

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Introduction
Many plastic surgery units utilise a classic 'Hub and Spoke' model of service delivery. Patients are routinely seen in out-patients clinics at remote hospitals and subsequently booked for surgery at the base hospital. Additionally, allied specialties frequently refer patients for reconstructive surgery which may be performed within or outside the Trust. Accurate inputting of patient information and coding of the planned procedure are crucial to the patient journey but also ensures departmental remuneration is equitable.

Method
We present a simple and cost effective integrated network solution utilising Adobe Acrobat Reader which can be installed by any computer or handheld device to book patients for theatre. It allows real time collation of data protected patient information whilst facilitating accurate coding with respect to Healthcare Resource Group codes.

Results
Initial reluctance to embrace this new approach was overcome with the assistance of early adopters, team briefing and motivating strategies. We demonstrate that this streamlined patient booking process to be advantageous to both surgeon and patient and renegotiation of procedure tariffs has potential for subsequent remuneration.

Conclusions
We show that this simple mobile computer solution can be used to book patients for theatre remotely, securely and confidentially. Accurate and efficient coding practices also aids improved fiscal control for the Plastic Surgery department.

Traumatic foot and ankle wounds and lymphoedema: a strapping solution!

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Background
Lymphoedema associated with combined soft tissue and complex bony injuries around the foot and ankle is common and challenging both for patients and healthcare economics. Swelling, persistent serous leakage, decreased circulation, microbial colonisation, and poor mobility frequently combine to prolong healing, delay return to ADLs and shoe wearing.

Kinesiology taping in its original description claims to treat acute and chronic lymphedema. Studies show successful control of acute lymphedema in breast cancer.

No current lymphedema bandaging treatment is deemed suitable in conjunction with open wounds in the foot and ankle.

Aim
To undertake a pilot study to explore the use of modified KT taping in this setting.

Method
Patients were prospectively identified from orthoplastics trauma MDT and plastics dressing clinic over three months.

Following appropriate reconstruction and dressing, patients whose healing stagnated with lymphoedema were treated with modified Kinesiology taping.

Result
Five patients were recruited. Soft tissue reconstruction ranged from skin graft to free flaps.

The mean time from injury to taping was 10.25 weeks (8-20).

The mean time from taping to patient discharge was 3.5 weeks.

All patients returned to normal footwear and ADLs within 4 weeks.

Conclusion
We describe a novel adjunct in the management of foot and ankle lymphoedema within the trauma setting, where no alternatives exist.

This can significantly impact the quality of life and productivity in these individuals. Furthermore, it will reduce the burden on healthcare resources.

Future evaluation of the Kinesiology taping system, using validated outcome measures within a comprehensive research study is underway.

Are hospital simulation centres being adequately utilised for self-directed learning and practice of surgical skills?

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Pinderfields Hospital

Aim
Pinderfields Hospital, Wakefield has a purpose-built medical education centre housing very well

equipped simulation facilities. The Medical Education Simulation Hub (MESH) runs a large number of courses, covering a wide variety of subject matter. Only with regular practice can one refine and retain surgical skills. This study was undertaken to ascertain whether simulation facilities were being utilised by surgical trainees at Pinderfields, for practice or learning, outside of formal courses.

Methods
An anonymously completed questionnaire was circulated to surgical trainees at Pinderfields. Only those who had trained at Pinderfields for the preceding 12 months were included in the study.

Results
Fifty-five trainees completed the questionnaire. Thirty-eight had never used the simulation facilities for self-directed learning/practice in the preceding 12-month period. Sixteen had used the simulation facilities between 1 and 5 times, and only one person had used it between 5 and 10 times. Forty-eight trainees reported that the simulation facilities were located at an optimal distance from the main hospital, but 34 claimed that the simulation facilities were not easily accessible during working hours, and 41 claimed that the simulation facilities were not accessible after working hours.

One suggestion to improve the use of the simulation facilities was developing simulation facilities adjacent to operating theatres, to facilitate ease of use between cases.

Conclusion
Outside of formal courses, simulation facilities are being inadequately utilised by trainees for self-directed learning and practice. Simulation resources need to be more readily accessible to trainees to encourage trainees to utilise them adequately.

Traumatic adult brachial plexus injuries: designing a clinically relevant outcomes tool

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University of Leeds

Introduction
There is currently limited consensus in outcome evaluation following intervention for brachial plexus injuries. There is even less data regarding patient reported outcome measures following these life changing injuries. The aim of this study was to identify a set of outcome measures for use in an assessment tool in Leeds Teaching Hospitals Trust.

Material and Methods
A systematic literature review provided a range of outcomes which were considered by a multidisciplinary team including surgeons, therapists and a clinical psychologist. The outcomes identified as most useful were included in an assessment tool. The tool was piloted on a total of nineteen patients with brachial plexus injuries that were consecutively recruited from follow up clinics at Leeds General Infirmary over two months.

Results
A third of patients were found to have borderline or abnormal scores for anxiety or depression. A positive correlation was observed between a patient's average pain score and their inability to perform translational tasks (r= 0.8073, P<0.05). Earlier surgery was associated with less functional impairment (r-0.8052, P<0.05).

Conclusion
Further refinement and evaluation of this outcome tool will provide a clinically relevant and holistic assessment of patients with brachial plexus injuries. Consequently this will influence future practice to improve patient care from a functional and psychological perspective.

A meta-analysis of time-limited versus volume-controlled strategies for timing of drain removal following axillary lymphadenectomy

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St George's

Introduction and Aims
Despite numerous studies over the past few decade, the optimum strategy for deciding when to remove drains following axillary lymphadenectomy remains unknown. This meta-analysis aims to compare time-limited and volume-controlled strategies for drain removal.

Materials and Methods
583 titles were identified following a systematic literature search of EMBASE, MEDLINE, Cinahl and the Cochrane library; six met our eligibility criteria. Data were extracted by two authors independently. Time-limited drain removal was defined as drain removal at <5 days, volume-controlled strategies ranged from <20ml to <50ml/24h. In all studies the time-limited approach resulted in earlier drain removal.

Results
Development of a seroma is 2.55 times more likely with early drain removal (Mantel-Haenszel Fixed Odds Ratio (OR) 2.55, p<0.00001). However, there is no difference in infection rates between early and late drain removal (OR=1.08, p=0.76). Early drain removal is associated with a two day shorter hospital stay (Mean difference 1.08; 95%CI 3.05-0.91; p=0.001).

Conclusions
This meta-analysis demonstrates that a strategy of early drain removal following axillary lymphadenectomy is safe and can facilitate earlier discharge by two days. There is no difference in infection rates, however, incidence of seroma is significantly higher, which may necessitate more demanding outpatient care.

An approach for the struggling free flap surgeon

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Queen Victoria Hospital

Although much has been written about free flap innovations and refinements to microsurgical technique, there is surprisingly little in the literature relating to strategies for the struggling microsurgeon. During the revision of a high transfemoral amputation with a contralaterally raised free ALT flap, we struggled with multiple unsuccessful anastomoses secondary to intimal damage from the patient's initial trauma.

As surgery proceeded unanticipatedly into the night, a variety of strategies were improvised: more proximal dissection of recipient vessels for usage, a heparinised paediatric feeding tube vascular shunt to temporarily reperfuse the ischaemic flap and afford the team a break, before finally after continued lack of success, 'banking' the flap back onto the original donor vessels. We 'regrouped' and consulted with colleagues for a few days, before finally returning with a physiologically replenished patient and a fresh approach, turning down the deep inferior epigastric vessels for use as recipient vessels, to reach a successful outcome.

Difficulties can occasionally occur for experienced microsurgeons. A successful outcome depends on a calm, rational and stepwise approach, with a willingness to consider 'banking' the flap, to afford both the patient and team an interval to recover and return with a fresh and considered surgical strategy.

Case report: emergency spare part microsurgery- a neurotised free fillet of sole flap to preserve a below knee amputation

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The Royal London Hospital, Barts and The London School of Medicine and Dentistry

The management of high energy lower limb injuries continues to be a challenge and despite advances in reconstructive techniques, amputation often represents the optimal management strategy. In this report we detail a case of a non-salvageable lower limb injury and the use of emergency spare part microsurgery to preserve the optimal amputation level and maximise functional outcome. A 35-year-old male sustained extensive injuries to his right lower limb in a road traffic accident. The limb was not salvageable and the options of a through or above knee amputation were proposed by the trauma surgeons. The soft tissues of the right foot were relatively preserved, however, and therefore a free fillet of sole flap was completed in the acute setting in order to preserve a below knee amputation. The patient now has full range of motion at the knee, protective sensation in his stump and is mobilising independently with a prosthesis. When the facilities and skill set exist in the acute setting emergency spare part microsurgery should be considered to preserve optimal amputation levels and therefore maximise functional outcomes in cases of isolated non-salvageable extremity trauma.

Morphea of the breast masquerading as cellulitis: a case report

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Salisbury NHS Foundation Trust

Aims

Morphea, or localised scleroderma, describes a spectrum of autoimmune diseases that primarily affect the skin. It is a rare condition and its presentation as erythematous lesions can be mistaken for a wide range of differential diagnoses. We present such a case following breast reconstruction and review the literature.

Methods

A 56-year-old female had a right-sided latissimus dorsi flap breast reconstruction with silicone implant post mastectomy. She had a subsequent right-sided capsulectomy, implant exchange and left breast mastopexy. One month postoperatively she noted erythema around her left breast mastopexy incision. This was initially treated as cellulitis with antibiotics but there was no clinical improvement.

On further examination, the erythema appeared plaque-like and extended laterally across her left breast. She had a similar area over her left clavicle and reported another area over her back previously. A clinical
diagnosis of morphea was made after a dermatology review and a full antibody screen revealed presence of antinuclear antibodies. The morphea was treated conservatively.

Results

Morphea is characterised by excess collagen deposition, which results in thickening and induration of skin and subcutaneous tissues. There are various subtypes and its aetiology is unknown. It has been reported following trauma, infections, surgery and radiotherapy. The clinical course of morphea is usually self-limiting but it can potentially cause significant morbidity such as severe contractures.

Various treatments have been proposed including topical therapy, phototherapy and systemic immunosuppression.

Conclusion

Morphea is rare but can occur postoperatively and mimic infectious conditions.