



**BAPRAS** British Association of Plastic  
Reconstructive and Aesthetic Surgeons

# BAPRAS CELTIC MEETING 2020

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## Celtic Meeting 2020 – Free paper Abstracts

### Complete Dermal Regression in Cutaneous Melanoma – Clinical Follow Up of a Large Series

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#### Introduction

Histological regression in melanoma is the description for an area of melanoma cells that have been partially or completely replaced with evidence of host immune response such as inflammatory infiltrate or dermal fibrosis. Given the uncertain impact of regression on patient outcomes our multi-disciplinary team has previously decided that patient with histologically complete dermal regression should undergo wide excision between 1-2cm and 5 year follow up. This retrospective review aimed to look at outcome for these patients and inform future decision making.

#### Methods

We used a prospectively collected database of all melanoma patients treated at our unit to identify all those with patients with histologically fully regressed dermal component of their melanoma. Inclusion criteria were those patients who had primary surgery in the 5 year period between January 2012 and January 2017. Exclusion criteria were those patients with less than 3 years follow up and those patients with a subsequent or previous melanoma.

#### Results

120 melanomas in 117 patients were included. There were 45 males and mean age was 58 (. Location of the primary tumour was trunk 67, limb 48 or head and neck 5. Histological subtype was lentiginous melanoma 39, superficial spreading 69, not otherwise specified 11 and acral lentiginous 1. Median follow up was 54 months. In our cohort of patients there was not a single incidence of local recurrence, regional or distant metastasis during the follow up period.

#### Discussion

Our results from a large series of melanoma with complete dermal regression suggest that these patients can be treated along the lines of melanoma in situ or thin melanoma with wide excision between 5-10mm and short term (up to one year) follow up.

## Is wider excision indicated for all completely excised primary melanomas?

Mr Jacky Hong Chieh Chen, Mr Gerard Laitung, Dr Richard Smirk, Mr Mohamed Badawy,  
Dr Deepha Pandit, Mr Gordon Prescott, Mr Ross Weale  
Preston

### Aims

The purpose of wide local excision (WLE) in melanoma is primarily to reduce local recurrence by removing subclinical disease which may affect clinical outcome. However, the frequency of residual disease in these specimens is generally small.

We undertook a retrospective analysis of the histology results of WLE specimens after complete primary excision biopsy over a 5-year period.

### Method

The clinicopathological data of 1647 patients were reviewed using our melanoma database. Incomplete or close primary excision ( $\leq 1$ mm margin), acral melanoma and inadequate data were excluded. Presence or absence of residual disease (RD) was correlated with various factors including Breslow thickness (BT), ulceration, lymphovascular spread (LVS), satellites and pT stage.

### Results

724 WLE specimens from 724 patients were available for analysis. RD (9 in situ; 4 invasive; 4 satellites) was present in 17 specimens (2%). 16 of these were from melanomas thicker than 1 mm (4.8%). Indeed, 99.7% of melanomas up to 1 mm were clear. RD seems to be associated positively with BT, ulceration, pT stage and specimen width (p0.001), mitosis (p 0.004), and LVS (p 0.02).

### Conclusion

Our data appear to show that most thin melanomas when first adequately excised do not reveal any residual disease on further excision and would support the practice of 1 cm margin primary excision to achieve both peripheral and deep clear margins. This would avoid the need for further surgery in a group which forms the majority of melanoma patients with both patient and cost benefits.

## **Do children with open forearm fractures need to be transferred to a unit with plastics availability?**

**Dr. Oliver Cottle, Mr Ben Marson**  
Nottingham

### **Introduction**

Open fractures are an important diagnosis that require expedited management. 1 in 10 require plastic surgery input to aid with soft tissue coverage. BOAST guidelines standards for practice suggest transfer to a specialist centre for joint orthoplastics care. The aim of this audit was to assess how many cases of open forearm fractures in children require plastic surgery input.

### **Method**

Cases were obtained from the trauma database held at single hospital. Cases of children with open forearm fractures were extracted and data on mechanism of injury, wound, treatment, specific plastic surgery input, follow up and complications were recorded.

### **Results**

23 total cases were identified from June 2016 until February 2020. 11 were male and 12 female, the minimum age was 3 years, maximum was 14 years and a mean of 8 years old. Plastic surgery was only involved operatively in 3 cases (13%). 2 of which was grade IIIb and 1 was IIIc. Ages were 12, 13 and 13 years. All were males. 2 of the cases were ASA grade III, the other was grade I. All 3 had high energy injuries

### **Conclusion**

A review of open forearm fractures in children treated at QMC reveals that 13% require direct plastic surgery involvement. The majority of injuries were Gustillo-Anderson grade I (47.8%). Plastic surgery were only involved in 3 cases (13%) of which were of more severe GA grade (type IIIb; n=2, IIIc; n=1). Wound complications occurred in 34.8% (n=8) with only 25% (n=2) having plastic surgery involvement.

It could be recommended that children with open forearm fractures that at initial assessment appear to have GA grade II or less injuries likely do not require any plastic surgery input. Therefore cases such as these do not have to be managed at a specialist orthoplastics centre.

## Hand osteomyelitis in patients with secondary Raynaud's phenomenon

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### Introduction

Secondary Raynaud's phenomenon (SRP) can be complicated by persistent digital ischaemia, ulceration and gangrene and potentially deeper infection, such as osteomyelitis (OM). However, there is a paucity of data to inform the management of hand OM in SRP.

### Methods

A medical records review study provided a detailed appraisal of the clinical course of patients (n=7) identified from 2008 to 2019 with SRP and digital ischaemia complicated by OM, identifying the potential challenges in diagnosis and management.

### Results

The majority had either preceding digital ulceration (n=3) or ischaemia (n=3). C-reactive protein was not consistently elevated (n=5), and baseline plain radiographic findings of OM (n=4) were not universally observed. There was a delay in median (interquartile range) time from OM symptom onset to plain radiograph changes of 11 (6) days. Two underwent magnetic resonance imaging because of diagnostic uncertainty which confirmed changes consistent with OM; three underwent bone biopsy. Most (n=6) had connective tissue disease associated Raynaud's, within the systemic sclerosis spectrum of disorders (n=5) and one patient had polymyositis. The majority (n=5) were anti-nuclear antibody positive, in a range of patterns. Extractable nuclear antigen was positive in three, including one positive for RNA polymerase III. One patient was diagnosed with Buerger's disease (thromboangiitis obliterans). *Staphylococcus aureus* and *Enterobacter cloacae* were most frequently implicated organisms. Half (n=3) required partial digital amputation.

### Conclusions

Clinicians should maintain a high index of clinical suspicion of hand OM underlying digital ulceration or gangrene in secondary Raynaud's phenomenon.

## **A microbiological analysis of hand osteomyelitis: a retrospective analysis of 210 cases**

**Mr Dallan Dargan, Dr Matthew Wyman, Dr Dominic Ronan, Mr Mark Heads, Dr Dave Partridge, Ms Jennifer Caddick, Ms Victoria Giblin**  
Sheffield

### **Introduction and Aims**

Osteomyelitis of the hand in adults often requires debridement of necrotic tissue and antibiotics targeted at organisms isolated from bone samples. This study aimed to evaluate organisms isolated from hand osteomyelitis.

### **Materials and Methods**

A retrospective review of the organisms isolated from 210 patients with osteomyelitis of the phalanges and metacarpals of the hand in a major trauma centre was performed over twelve years.

### **Results**

Microbiological cultures were performed for 195 patients, including 122 with positive bone cultures. In seven cases with cultures, no organisms were isolated from any source. *Staphylococcus aureus* was identified in 101 patients (52%), with coagulase negative staphylococci in 56 (29%), and 88 were polymicrobial infections (42%).

### **Conclusions**

The high incidence of polymicrobial infections and coagulase negative staphylococcus in this series suggests that for suspected cases, early microbiological and histopathological confirmation, ideally via bone biopsy, is optimal for management of osteomyelitis of the hand.

## Preparing for a Second Wave: Lessons learnt from the effect of COVID-19 Lockdown on Plastic surgery trauma referrals

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### Introduction

COVID-19 presented a unique challenge to the NHS. We undertook a comparative study investigating the impact on trauma referrals during the initial stages of the COVID-19 lockdown on a regional Plastic Surgery Unit, Major Trauma Centre & Burns Facility. This will aid preparation for a potential second wave in terms of future planning and service provision.

### Method

All Plastic Surgery referrals were recorded over 28 days of social isolation during the COVID-19 pandemic (from 24/03/2020). This data was compared to the same period in 2019. Patient demographics, diagnosis, mechanism of injury and time to presentation/surgery were documented.

### Results

In total, 525 patients were included. During social isolation, the mean number of daily referrals was 6, compared to 12 in 2019. The mean age of patient was older, 41 during lockdown, compared with 39 in 2019. The table shows the distribution of injuries:

	Hand Trauma	Burn	Lower Limb	Other	Total
Comparative period (2019)	265 77%	48 14%	9 3%	23 7%	345
Covid-19 isolation (2020)	117 65%	41 23%	13 7%	9 5%	180

Hand trauma referrals reduced by 16% during social isolation. Increases were seen during lockdown in deliberate self-harm referrals (100%), DIY injuries (75%) and lower limb trauma (133%). Fewer work and school related injuries were referred. The mean duration to presentation prior to pandemic was 1.9 days, compared to 1.7 during lockdown however mean time to surgery was 2 days in 2019 and 1.9 during lockdown.

### Conclusion

The COVID-19 lockdown affected the workload of Plastic Surgery services. Social change, psychological impact and mental health were all contributing factors. We should acknowledge this as Plastic Surgeons and make provisions for this new workload in case of a potential second wave.

## **Enhanced Recovery After Surgery in Breast Free Flap Reconstruction: A five year complete audit and evaluation of outcomes at a regional tertiary reconstructive centre.**

**Mr Ali Jawad, Mr Omar Dawood, Miss Ana Borges, Mr Martin Jones**  
East Grinstead

### **Introduction**

Enhanced recovery after surgery (ERAS) principles have been increasingly applied to breast free flap reconstruction (Sindali et al 2018). We aim to review adherence to our local ERAS protocol implemented in 2015 and the ongoing impact on annual outcomes.

### **Method**

Data from trust admission records for 2015-2019 was analysed to determine length of stay (LOS), return to theatre (R2T), readmission (RAD), and flap failure. The ERAS care booklets for all breast free flaps from August-November 2019 were then retrospectively reviewed.

### **Results**

Despite increasing operations over 5 years (169 flaps/134 cases to 356/258), a reduction in mean LOS from 4.9 to 3.7 was shown. R2T rate per flap also decreased (14.2% to 9.6%). Most returned for washout of collection (59%), while 69% of inpatient returns were <48 hours. RAD rate (max. 30 days) fluctuated annually (9.7% in 2019), and were largely for infection (53%), peaking at day 7 post-discharge. 5 flaps failed in total (0.56% in 2019).

We audited 66 ERAS pathways. No booklet was fully completed, with a lack of non-nursing input. Optimal adherence was in pre-op management, post-op medication, drains/dressings reviews, and oral intake support. Induction antibiotic practice was divergent as many surgeons added Gentamicin (94%) to the advised single Teicoplanin dose (3%).

### **Conclusion**

ERAS remains integral to overall care primarily by limiting inpatient days, especially with the exponential rise in free flap surgery. Investigation of factors contributing to complications and admission time is merited, such as use of drains (Miranda et al 2014), with view to amend the pathway. We recommend regularly reviewing protocol with multidisciplinary engagement to ensure standardised and comprehensive care.

## **Lymphoedema Quality of Life Inventory (LyQLI) for assessment of Health-related Quality of Life in Patients with Lipoedema pre and post liposuction: 1 year follow up**

**Dr Valerie Yujin Kim, Mr James McGhee, Mr David Alexander Munnoch**  
Dundee

### **Introduction and Aims**

Lipoedema has a significant negative impact on health-related quality of life (QOL). There are no validated questionnaires to assess health-related QOL for lipoedema patients. The Lymphoedema Quality of Life Inventory (LyQLI) is a validated questionnaire for use in lymphoedema, which has been utilised in studies to assess the effectiveness of treatment in lymphoedema, including post liposuction. The aim of this study was to assess QOL in lipoedema patients following liposuction over 12 months. The secondary objective was to demonstrate the role of LyQLI for assessment of health-related QOL in lipoedema patients.

### **Materials and Methods**

This was a prospective study assessing QOL of patients with lipoedema who underwent liposuction. The LyQLI questionnaire was provided to patients pre-operatively and at 3, 6 and 12 months post-operatively. QOL questionnaires form standard practice for patients undergoing liposuction for lipoedema in our centre, therefore ethical approval was not required for this study. Data was organised into the three pre-set domains: physical, psychosocial and practical. A median score for each domain was calculated.

### **Results**

Overall health-related QOL improved across all domains. At 3, 6 and 12 month questionnaires there was a statistically significant reduction in the LyQLI score as compared to the pre-operative questionnaire (median 78) with median scores of 35 ( $p=0.00002$ ), 18.5 ( $p<0.00001$ ) and 21 ( $p<0.00001$ ) respectively.

### **Conclusions**

There is a sustained improvement in QOL post-liposuction over a 12 month follow up period. LyQLI is a useful tool to assess QOL in lipoedema due to the disease similarities with lymphoedema.



## **Inferior Gluteal Artery Perforator Flaps: A Flap of Choice for Perineal Reconstruction After Abdominoperineal Resection for Anorectal Malignancies**

**Miss Cindy Liu, Mr Conor Gordon, Mr Ryckie Wade, Ms Grainne Bourke, Mr Waseem Bhat, Mr Jim Tiernan, Mr Christopher West**  
Leeds

### **Aims**

Surgery for locally advanced or recurrent anorectal malignancies can result in significant perineal defects, requiring soft-tissue reconstruction. We describe our experience using inferior gluteal artery perforator (IGAP) V-Y advancement flaps, with particular emphasis on flap complications.

### **Methods**

A retrospective cohort analysis was performed on patients who had IGAP V-Y flaps following abdominoperineal excision (APE) between 2011 and 2020. Patient demographics, neo-adjuvant chemo/radiotherapy status, flap related, and general complications were examined.

### **Key Results**

In total, 50 patients who underwent 85 IGAP flaps were identified. 83 flaps were successful (97.6%) with total or partial flap loss reported in two patients. Flap complication rates were sub-categorised into total / partial flap loss (n=2 patients); major complication excluding flap loss requiring surgical intervention (n=4); and minor complications treated conservatively (n=25). 38% had no complications. 84% received pre-operative chemo/radiotherapy. Those who had no prior radiotherapy or short course radiotherapy reported no flap loss or major post-operative flap complications.

### **Conclusion**

We demonstrate that our choice of IGAP flaps are a viable option for soft tissue reconstruction demanded by the often devastating pelvic defects following APE, even in the presence of neo-adjuvant chemo/radiotherapy.

## Recurrence, disease progression, and survival of non-retroperitoneal myxoid, pleomorphic, and dedifferentiated liposarcomas

Dr Asif Machhada, Mr Ahmed Emam, Ms Guilia Colavitti, Mr James Coelho, Dr Gareth Ayre, Ms Roba Khundkar, Mr Thomas Wright, Mr Paul Wilson  
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### Introduction and Aim

Liposarcomas are the most common sarcoma and account for approximately 45% of new adult diagnoses. The World Health Organization recognizes four distinct histopathological subtypes. These are the well-differentiated liposarcoma (WDL) or 'atypical' lipomatous tumours (ALT), myxoid, dedifferentiated, and pleomorphic liposarcomas. The aim of this study is to provide subtype-specific data to help inform future management and surveillance protocols for more aggressive liposarcomas.

### Methods

Our retrospective cohort study, following STROBE criteria, includes all patients undergoing primary resection of liposarcoma under a regional, tertiary sarcoma service of the Somerset area between October 2002 and September 2019. Median follow up is five years and involves symptomatic review and imaging.

### Results

Statistical significance is observed in survival from disease-specific death ( $P < 0.0001$ ), distant disease progression ( $P = 0.024$ ) and local recurrence ( $P < 0.0001$ ) between myxoid ( $n=32$ ), pleomorphic ( $n=20$ ) and dedifferentiated ( $n=16$ ) liposarcomas. The median age of presentation was 50 years for myxoid, 73 years for pleomorphic and 72 years for dedifferentiated liposarcomas. The median distant disease survival was 4.3 years for myxoid, 4.8 years for pleomorphic and 3.3 years for dedifferentiated liposarcomas.

### Conclusion

There are significant differences in presentation and recurrence behaviours between subtypes of liposarcoma that could help inform more specific management and surveillance protocols.

## Atypical Lipomatous Tumours: Does Low Mortality and Rare Dedifferentiation Warrant Chest X-Ray Surveillance?



Dr Asif Machhada, Mr Ahmed Emam, Ms Guilia Colavitti, Mr James Coelho, Dr Gareth Ayre, Ms Roba Khundkar, Mr Thomas Wright, Mr Paul Wilson  
Bristol

### Introduction and Aims

In the United States, Europe, and the United Kingdom, clinical outcome data have yet to fully facilitate subtype-specific surveillance for different liposarcomas, despite being the second most common soft tissue sarcoma. Our aim is to determine the recurrence, disease progression, and survival of patients with atypical lipomatous tumours.

### Methods

A retrospective cohort study of patients with a histopathological diagnosis of the atypical lipomatous tumour (n=91) that were treated between October 2002 and September 2019, with a five-year median follow-up in a regional tertiary sarcoma service in the UK.

### Results

Patients with ALT (n=91) did not exhibit distant progression or disease-specific death. The median age at first presentation is 66 years. There is one diagnosis of dedifferentiation from resection of a lower limb tumour recurrence, and this did not metastasize. Within ten years, 24% (22/91) ALT recur locally despite ten cases with clear margins. Approximately 10% (9/91) of these patients recur locally in two years of resection. The median overall survival is six years (95% CI 4.7 – 7.6 years).

### Conclusion and Discussion

Atypical lipomatous tumour dedifferentiation is a rare and time-dependent process that may not necessarily warrant chest x-ray surveillance. Currently, however, the NCCN and ESMO-EURACAN recommend chest radiographs or CT every six to twelve months for indefinite periods with similar advice in the United Kingdom outline of best practice. Chest radiographs and CT scans can result in incidental findings that require further investigations such as follow up radiographic studies and other diagnostic interventions, exposing patients to further unnecessary radiation and contrast.

## **Use of Novel decellularized cadaveric dermis (DCELL) in single-stage resection and reconstruction of non-melanomatous skin cancer of the head and neck**

**Dr Angelos Mantelakis, Mr Konstantinos Argiris, Mr Alwyn D'Souza, Mr Anil Joshi**  
London

### **Background**

Reconstructive options in non-melanomatous skin tumours of the head and neck region are limited in the frail, elderly patient group, where split skin thickness or full thickness grafts may not be a viable option. This study examines the use DCELL, an acellular dermis product produced in the UK for the reconstruction of these skin defects.

### **Methods**

This was a single-centre, prospective study of patients undergoing single stage wide local excision of non-melanomatous skin cancer and reconstruction with decellularised dermis. Our inclusion criteria included any patient that required a curative excision but had risk factors where conventional local flap or free tissue transfer could have a potential adverse outcome.

### **Results**

Thirty-seven wounds were treated with DCELL in thirty-one patients. Mean age was 81.6 years (range 61-94 years) and at the time of operation, 25 patients (80.7%) were ASA 3 or above. The scalp was the most common anatomical area operated on (n=28, 75.7%). The overall proportion of wounds with complete closure was 89.2% (33 out of 37 wounds), with a failure rate of 10.8% (4 complete graft failures). Device-related complications included one episode of crusting over the graft which resolved with topical antibiotics, and a hypertrophic scar over the wound edges. Cosmesis was satisfactory in all cases.

### **Conclusion**

DCELL demonstrated a very good take rate with equally satisfactory cosmetic outcomes in patients where standard reconstructive approaches may have adverse outcomes. Further research is needed to better define its role in the management of these skin cancers.

## **A modification of the MacIndoe vaginoplasty technique using an obstetric balloon and review of the first ten cases**

**Miss Serena Martin , Mr Kevin McGarry, Mr John Price, Mr Khalid Khan**  
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### **Introduction**

We describe a novel technique of vaginal reconstruction using a skin graft placed over a rusch balloon, a modification of the MacIndoe technique which was first described in 1950 for patients with Mullerian agenesis. This involves the development of a neovagina followed by skin grafting. Issues with this technique included pain and shearing of the graft during removal of the mould.

We describe patient demographics and outcomes of the first ten cases using this modified MacIndoe technique. In addition, we show an expanded range of indications for this procedure, including post radiotherapy vaginal adhesions and following a full thickness vaginal burn.

### **Methods**

Retrospective review from 2012-2019. Patient charts and operation notes were reviewed to determine the aetiology, surgical technique, pre and post-operative vaginal measurements and post-operative functional outcomes.

### **Results**

Overall ten procedures were performed on 9 patients. Indications; full thickness burn to upper vagina, 2 patients had Mayer-Rokitansky-Kuster-Hauser syndrome. The remaining had vaginal stenosis following chemo-radiotherapy.

Average time to balloon removal was 3.5 days (3-5days).

Average pre-op vaginal length; 4.8cm and increased to 9.5 cm.

One patient had total graft loss and required a repeat procedure.

### **Conclusion**

This technique successfully maintains the skin graft in position during balloon deflation and removal. With the increasing use of chemo-radiotherapy for cervical cancer we will see more of these patients in the future, they tend to be young and psychosexual dysfunction has a major impact on quality of life. This simple procedure has shown good results in achieving adequate vaginal length and return to sexual intercourse.

## **Revision Rhinoplasty- Who, what and why?**

**Miss Susan McCrossan, Miss Serena Martin, Mr Chris Hill**  
Dundonald

### **Introduction**

Revision rhinoplasty (RR) can be technically challenging and usually further complicated by patient expectations. With reported revision rates between 5-15%, it is important to evaluate why patients request revision surgery, what techniques are utilised, the outcomes and what factors may lead some patients to require multiple revisions.

### **Methods**

A retrospective review of RR during a 12-year period from 2008-20. Data extracted; patient demographics, indication for rhinoplasty & RR, surgeon speciality, operative technique, history of trauma or cocaine & time since primary rhinoplasty.

### **Results**

83 patients had RR, 76% female v. 24% male. Average age 31 years, 37% were in the 17-27 year age group. 76% were secondary rhinoplasties, 14% tertiary, 4%, 4% & 2% had a total of 4, 5 & 6 rhinoplasties, respectively. The average length of time between 1<sup>o</sup> and 2<sup>o</sup> rhinoplasty was 17.8 months (4 months-40 years). Top 3 reasons for 1<sup>o</sup> rhinoplasty were; dorsal hump (42%), septal deviation (23%) & bulbous tip (14%). 20% of both 1<sup>o</sup> and revision rhinoplasties required cartilage grafting. 33.7% had a history of nasal trauma. Top 3 reasons for 2<sup>o</sup> rhinoplasty were; bony prominence (31.3%), overhanging columella (19.2%) & tip droop/fullness (25.3%).

### **Discussion**

Revision rhinoplasty remains a challenge, 20% require cartilage grafts and 24% of patients require at least 2 revision procedures. This subgroup of patients were complex and likely to have a history of trauma &/or cocaine use. Majority required only minor revision with rasping of bony prominences or further overlapping of the lateral crura to refine the tip. The modern day rhinoplasty surgeon must ensure they have multiple tools available to manage this increasingly complex patient group.

## **Introducing a Virtual Plastics Trauma Clinic - A Model for Maintaining Standards of Plastic Trauma Care During a Pandemic**

**Ms Natalie Roberts, Mr Ricahrd Pinder**  
Cottingham

### **Aim**

The COVID-19 pandemic demanded rapid adaptation of trauma services nationwide – hand injuries still occurred, but there has been a need to minimise face-to-face (FTF) contact for patient and staff safety. We developed a Virtual Trauma Clinic (VTC) providing real-time patient review by senior team members to make definitive treatment strategies at time of referral.

### **Methods**

Twenty-four hour senior triage allowed secure image sharing, confidential video consultation and radiographic review, optimising injury assessment and determination of optimal treatment plans. Referral pathways were designed to allow timely management, in line with GIRFT. Outcomes were assessed across all injuries, and performance compared against the British Society for Surgery for the Hand (BSSH) Standards for Hand Trauma.

### **Results**

278 patients were referred to VTC over an initial 8 week period. Clinic attendance was avoided for 40% of patients. 166 patients attended acutely, of which 76% had FTF consultation within 24 hours of referral. 98 patients required operative intervention of which 92% were performed on day of review. As per BSSH Standards, time to surgery was achieved in all tendon and nerve injuries, and 76% fractures. Same day discharge following definitive care across all attendees was achieved in 83% of presentations.

### **Conclusion**

Our VTC model demonstrates a high quality and streamlined same day service. It simultaneously reduces healthcare presentations, and reduces unnecessary regional travel and repeated hospital attendance. Three month outcomes for these patients, as well as the service and plans going forward, along with challenges this entails, will be discussed.

## **Early bone biopsy and treatment failure rates in osteomyelitis of the hand: a study of 92 patient outcomes.**

**Dr Dominic Ronan, Mr Dallan Dargan, Dr David Partridge, Dr Matthew Wyman, Miss Jennifer Caddick, Miss Victoria Giblin**  
Sheffield

### **Introductions and Aims**

Early, evidence based and aggressive management of suspected osteomyelitis in the hand is hypothesised to lead to improved patient outcomes and reduced rates of treatment failure. This study aims to evaluate the effects of early bone biopsy in cases of osteomyelitis within the hand.

### **Material and Methods**

A retrospective review was performed of 92 consecutive patients treated for hand osteomyelitis over a two year period (2018-2019) in a tertiary centre, including 57 positive microbiological bone cultures. Mean follow up time for the cohort was 105 days (SD 122, range 0-651). Treatment failure was defined as: further surgical procedure or antibiotic administration after 6 weeks following initial biopsy or surgical procedure and commencement of antibiotic therapy.

### **Key results with supporting statistics**

Treatment failure was observed in 23 of 92 cases (25%). Early terminalisation or amputation (within 6 weeks from diagnosis) was not associated with treatment failure in any of ten cases ( $p=0.06$ ). Early bone biopsy ( $\leq 4$  days after first hand surgery review) was associated with treatment failure in 5/28 (17.86%) versus 18/64 (28.1%) in those biopsied at  $\geq 4$  days or not at all (odds ratio 0.56, 95% confidence intervals 0.18-1.69,  $p=0.43$ ).

### **Conclusions**

Early bone biopsy and early amputation were associated with a non-statistically significant reduction in treatment failure rates in hand osteomyelitis in this series.



## **Histological Clearance Margins and Recurrence of Melanoma in Situ treated with Wide Local Excision**

**Mr Francisco Serra E Moura, Ms Lucy Homer, Mr Alex Euan Hamilton, Mr Stuart McKirdy**  
Norwich

### **Background**

Melanoma in situ (MIS) is increasing in incidence faster than that of invasive melanoma. Despite varying international practice, a minimum of 5-mm surgical excision margin is currently recommended in the UK. There is no clear guidance on the minimum histological clearance margins.

### **Aim**

This study compares the histological radial clearance margins of MIS using Wide Local Excision (WLE) to the rate of recurrence and progression to invasive disease.

### **Methods**

A retrospective single-centre review was performed over a 5-year period. Inclusion criteria consisted of MIS diagnosis,  $\geq 16$  years of age, and treatment with WLE with curative intent. Those patients with a recurrence of a previous MIS or with a reported focus of invasion/regression were also included. Clinicopathological data and follow-up were recorded.

### **Results**

167 MIS were identified in 155 patients, 80% of which were lentigo maligna subtype. Of patients with histologically completely excised MIS ( $\rightarrow 0$ mm), 9% had recurrence with a median time to recurrence of 36 months (IQR 25-53). Three (1.8%) cases recurred as invasive disease. Age, MIS site, MIS subtype & histological evidence of foci of invasion/regression did not predict recurrence nor progression to invasive disease ( $P \rightarrow 0.05$ ). The recurrence rate of MIS with a histological excision margin  $\leq 3.0$  mm was 13% compared to 3% in those with margins of  $\rightarrow 3.0$  mm ( $P=0.049$ ).

### **Conclusion**

From this work a histological peripheral clearance of at least 3.0 mm is advocated to achieve lower recurrence rates. The follow-up duration should be reviewed due to the median recurrence occurring at 36 months in our cohort. Cumulative work on MIS needs to be collated and completed in a large multi-centre study.

# Hyaluronidase for Pain Relief During Local Anaesthetic Infiltration in Carpal Tunnel Decompression

Dr Sanjeev Sharma, Mr Anindya Lahiri  
London

## Aim

To investigate the effect of hyaluronidase on pain experienced during local anaesthetic infiltration for carpal tunnel decompression.

## Methods

This prospective cohort study consisted of two groups of twenty consecutive patients undergoing carpal tunnel release by a single surgeon over a five-month period. The first twenty patients received a local anaesthetic mixture of lignocaine and adrenaline whilst the second group were administered the same local anaesthetic and adrenaline mixture with added hyaluronidase (Hyalase®). The primary outcome measurement was pain experienced during local anaesthetic infiltration, measured using a visual analogue scale (VAS) between 0 (no pain) to 10 (maximum pain they can imagine). Secondary outcome measures were operating time and complication rates.

## Results

Patients administered local anaesthesia with hyaluronidase experienced significantly less pain on infiltration of the proximal palm (mean VAS 3.65 vs. 5.73 without hyaluronidase,  $p < 0.05$ ) and distal palm (mean VAS 3.40 vs. 5.31 without hyaluronidase,  $p < 0.05$ ). There was no difference in pain reported on initial needle insertion or infiltration of the distal forearm. No patients in either group required additional local anaesthetic. The mean tourniquet time for the group receiving local anaesthesia without hyaluronidase was 3.79 minutes (range 3-5 minutes, SD 0.71) versus 3.65 minutes (range 3-5 minutes, SD 0.67) for the hyaluronidase group. There was therefore no significant difference in operating time between the two cohorts ( $p = 0.53$ ). No complications were observed in either groups.

## Conclusion

Hyaluronidase appears to be useful for reducing pain during local anaesthetic infiltration for carpal tunnel release.

## **Vacuum cleaner friction burn**

**Mr Karl Walsh, Mr Mohamed Osman Elabd, Mr Ali Soueid, Mr Humayun Khan**  
Manchester

### **Aim**

To identify the prevalence of vacuum associated friction burns in our region and review the associated morbidity following conservative or surgical intervention.

### **Material and Methods**

A local hospital database was reviewed identifying paediatric patients who sustained vacuum friction burns over a 10 year period. Patients' medical records were reviewed to identify further clinical information in relation to their injury.

### **Results**

32 paediatric injuries caused by vacuum injuries, predominantly affecting the hand (n=31, 97%). The mean age of the child injured was 5 years of age (range 1-11). This injury was most prevalent in males (n=25, 78%) with the injury predominantly occurring in living room area (n=19, 59%).

Hand dominance could not be identified due to ages of the children. The left hand was most often injured (n=18, 56%), typically affecting the volar surface (n=29, 91%). The most common digits affected were the index finger (n=13, 40%) and the middle finger (n=11 [34%]). All injuries were less than 1% TBSA and were typically deep dermal/ full thickness injuries (n=27, 85%) crossing over joints of the hand (n=25, 78%). 11 cases (34%) were managed operatively with a mean length of stay of 3 days (range 1-11 days). Scarring was the main complication (n=27, 84%) in which scar management was required (n=23, 72%).

### **Conclusion**

Vacuum cleaners pose a significant risk to paediatric patients at home. This injury appears to occur in males exploring their home environment resulting in significant morbidity. In order to prevent these injuries, greater awareness is required to educate parents of the dangers a vacuum cleaner can pose to the paediatric population. Additionally manufacturers should be urged to improve the child safety of their devices.

## **Five-year mortality and amputation rates in hand osteomyelitis with arterial calcification: a retrospective cohort study**

**Dr Matthew Wyman, Mr Dallan Dargan, Ms Jennifer Caddick, Ms Victoria Giblin**  
Sheffield

### **Aims**

Hand osteomyelitis may be associated with poorer outcomes among patients with digital artery calcification. This study aimed to identify whether this specific radiological finding confers any useful diagnostic, prognostic, or therapeutic information.

### **Methods**

A cohort of 210 patients diagnosed with phalangeal or metacarpal osteomyelitis over 12 years (2008 to 2019) in our tertiary referral centre, were reviewed retrospectively for evidence of arterial calcification on plain x-rays.

### **Results**

Digital artery calcification was present in 29/210 patients (14%) with hand osteomyelitis. Overall 71 patients had diabetes mellitus and/or end-stage renal failure, including 28 of 29 patients with calcification. Ipsilateral arteriovenous fistulae were prevalent in the calcification group (n=17), as was steal syndrome (n=5), and digital ulceration or skin necrosis (n=15). Compared with controls (n=181), those with calcification experienced higher rates of polymicrobial infection, digit amputation, had more bones affected, surgical procedures, phalanges amputated, and higher mortality at one year (n=12), five years (n=20), and study completion (n=24), as a result of comorbidities. Absence of calcification in patients with diabetes and/or end stage renal failure (n=43) was associated with better outcomes on all the above parameters.

### **Conclusion**

Hand osteomyelitis with arterial calcification evident on plain x-rays is associated with increased rates of digit amputation, and higher one-year mortality compared with hand osteomyelitis in the absence of arterial calcification. Early amputation to maximise disease-free survival may be appropriate for patients with hand osteomyelitis and arterial calcification.

## **Serum inflammatory markers in the diagnosis and monitoring of osteomyelitis in the hand: a retrospective review of 146 cases**

**Dr Matthew Wyman, Mr Dallan Dargan, Miss Diana Kazzazi, Ms Jennifer Caddick, Ms Victoria Giblin**  
Sheffield

### **Aims**

To identify whether hand osteomyelitis causes elevated levels of serum inflammatory markers and assess associations with amputations.

### **Methods**

We identified 146 patients who presented to our tertiary referral centre from 2008 to 2019 with hand osteomyelitis and serum inflammatory marker levels. Blood results at first presentation as well as subsequent results were reviewed, including white-cell count (WCC), neutrophil-lymphocyte ratio (NLR), plateletlymphocyte ratio (PLR), and C-reactive protein (CRP).

### **Results**

All patients (n=146) had inflammatory markers measured within 14 days of diagnosis. Follow-up markers were collected for 68 patients (47%) at 15-60 days from diagnosis. Median interval between clinical diagnosis and diagnostic inflammatory marker measurements was one day; and between diagnosis and follow-up measurements was 31 days. Mean WCC and CRP at diagnosis were 9.2 (SD 4.6) and 40.5 (SD 53.9) respectively, compared with 8.2 (SD 3.9) and 30.2 (SD 42.4) at follow-up. A rise in CRP between diagnosis and follow-up was associated with an increased risk of amputation compared with a fall in CRP [10 (91%) versus 15 (44%), OR 12.7, 95% CI 1.5-110,  $p < 0.01$ ]. At diagnosis, sensitivity of CRP was 74%, NLR was 43%, WCC was 31%, and PLR was 28%. Each of the four markers had a low positive predictive value for amputation ( $\leftarrow 29\%$ ), and a high negative-predictive value ( $\rightarrow 90\%$ ). WCC and CRP both within reference ranges at diagnosis had a high negative predictive value for predicting amputation (NPV 96%)

### **Conclusions**

CRP has a higher sensitivity than WCC, NLR and PLR when used as a diagnostic adjunct in hand osteomyelitis. WCC and CRP both within reference ranges at diagnosis was highly

negatively predictive  
against phalanx or digit amputation.

## **Wide Awake Local Anaesthesia No Tourniquet (WALANT) in the treatment of hand infections – a single centre’s experience and point of technique.**

**Miss Jade Zhao, Miss Rupali Shah, Miss Ana Borges, Mr Robert Pearl**  
East Grinstead

### **Aims**

WALANT is an established technique, already proven to be safe and effective in hand surgery. During the COVID-19 pandemic we increased our use of this technique and have expanded its indications to include treatment of hand infections.

We report our experience in the use of WALANT in infective hand trauma cases, particularly pyogenic tenosynovitis, and suggest some technical considerations.

### **Methods**

Prospective data on all emergency hand trauma cases requiring surgery at our unit were collected between 1/4/20 and 18/6/20. Data collected on type of operation, anaesthesia used plus any need for conversion and length of stay. We use 1% Xylocaine, containing 1:200,000 Adrenaline, mixed with 8.4% Sodium Bicarbonate at a ratio of 10:1. We recommend a minimum of 25 minutes wait in order to achieve an adequate field.

### **Results**

A total of 405 emergency hand trauma cases were performed. Of these, 10.6% (n=43) cases were hand infections. Animal bite washouts were most common at 46.5% (n=20), followed by washouts for other hand infections 25.6% (n=11), flexor sheath washouts 23.3% (n=10) and post-operative infections 4.7% (n=2). The majority of these cases were performed under local anaesthetic (51.2%), with WALANT being the second most used modality of anaesthesia (32.5%), followed by regional (11.6%) and general anaesthesia (4.6%). Sub-analysis for pyogenic tenosynovitis showed 70% of cases were successfully performed with WALANT and 30% of cases required regional anaesthetic. 3 patients required a second washout and the average length of stay was 2.6 days.

### **Conclusions**

WALANT is a safe and effective technique in the treatment of hand infections. We demonstrated its effectiveness even for deep infections such as pyogenic tenosynovitis.