Femoral Neck Stress Fractures In Military Personnel - A 20 Case Series

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ABSTRACT

Femoral neck stress fractures (FNSF) are uncommon, representing around 5% of all stress fractures. In military personnel, FNSF represents one of the severest complications of military training, which can result in medical discharge. Clinical examination findings are frequently non-specific and plain radiography may be inconclusive leading to missed or late diagnosis of FNSF. This paper highlights the significance of FNSFs in military personnel and alerts physicians to the potential diagnosis. We identified all military recruits, aged 17 to 26, who attended the Infantry Training Centre (Catterick, UK), over a four-year period from the 1st July 2002 to 30th June 2006, who suffered a FNSF. The medical records, plain radiographs, bone scans and MRIs of the recruits were retrospectively reviewed. Of 250 stress fractures, 20 were of the femoral neck; representing 8% of all stress fractures and an overall FNSF rate of 12 in 10,000 military recruits. FNSFs were most prevalent amongst Parachute Regiment recruits (1 in 250, $p < 0.05$). Onset of symptoms was most ! commonly between 13 - 16 weeks from the start of training. The majorit y (17/20, 85%) of FNSFs were undisplaced, these were all treated conservatively. Three FNSFs were displaced on presentation and were treated surgically. Overall, the medical discharge rate was 40% (8/20). FNSFs are uncommon and the diagnosis remains a challenge to clinicians and requires a high index of suspicion in young athletic individuals. In such individuals early referral for MRI is recommended, to aid prompt diagnosis and treatment, to prevent serious sequelae.

Incidence and risk factors of colonisation with MRSA in patients admitted with a fractured proximal femur

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Introduction

MRSA infections are a current concern in the elderly orthopaedic patient, with colonisation rates of between 4 - 17% reported in these patient groups. In our institution there has been concern regarding MRSA surgical site infection and cross contamination of elective and emergency patients. This prompted the unit to consider a screening programme to identify MRSA carriers. We undertook the following project to assess the feasibility and effectiveness of implementing such a screening programme.

Aim

To ascertain the incidence of colonisation with MRSA, rate of wound infection and associated risk factors in patients admitted with a fractured proximal femur.

Method

A prospective, blinded case series of 100 consecutive patients admitted to the trauma ward with a fractured proximal femur. Three swabs (axilla, nasal and perineum) were taken within 24 hours of admission. Data from each patient was collated and each patient was followed until discharge to assess for surgical site infection.

Results

Age range 60-97 years. 26% admitted from institutional care. Four patients were colonised with MRSA on admission. An association was seen between patients colonised on admission and long term or recent residence in institutional care. One of these patients went on to develop colonisation of the surgical wound however this did not lead to surgical site infection and the patient was successfully treated with MRSA eradication therapy only. In these 4 patients all wounds healed satisfactorily with no evidence of infection.

Conclusion

While MRSA continues to be a growing concern in the press we found that rates of colonisation and subsequent infection were not high. There were no documented cases of MRSA wound infection in colonised individuals. Given the cost to detect these low levels of colonisation we do not feel that a screening regime would be cost effective nor justified.

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Short Term Outcome of Subtrochanteric Fractures Treated with the New Synthes Proximal Femoral Nail Antirotation (PFNA)

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Introduction:

The PFNA device was developed to address problems of rotational instability in proximal femoral fractures whilst simultaneously employing a single femoral neck element. The PFNA makes use of a helical blade that compresses rather than destroys osteopaenic cancellous bone.

Study Design:

Prospective cohort.

Methods:

All subtrochanteric fractures admitted to the department were treated with the PFNA (AO 31A3). Demographic and clinical data during admission was recorded and formal post-operative X-Rays performed.

Outcome Measures:

4 month follow-up appointment with clinical and radiological assessments, VAS, SF36, Jensen Social Function Score and Parker Mobility Score.

Results:

From April to December 2006, 46 patients were included in the study. 4 month follow up has been completed in 17 of 23 patients. The average age was 78. 11 short and 7 long nails were inserted. Four patients required open reduction and internal fixation. There were no significant intra-operative or immediate postoperative complications. 1 short nail fractured through the site of the distal locking bolt during the follow up period and required revision.

At follow up, 5 patients had tenderness over the greater trochanter and 2 had leg length discrepancy. None had malrotation. Only 2 patients regained their pre-operative mobility status. The mobility and social function scores were significantly reduced at follow up compared to pre-operative status ($p=0.003$ and $p=0.001$ respectively). All domains of SF36 were low compared to normative data. The mean VAS was 3/10.

All fractures united and there was no migration, lysis around or cut out of the helical blade. In total, 25 distal locking bolts were utilised. Four of these had migrated or become loose.

Conclusions:

Patients with subtrochanteric fractures do not return to pre-fracture function at 4 months post injury. The PFNA appears to work well although there may be concern about bone hold of the distal locking bolts.

Spinal Injury From Vertical Aircraft Ejection: A prospective series revealing a high incidence of occult injury

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Background:

High velocity vertical aircraft ejection seat systems are credited with aircrew survival of 80-95% in modern times. Use of these systems is associated with exposure of the aircrew to vertical acceleeration forces in the order of 15-25G. The rate of application of these forces maybe upto 250G per sceond. Upto 85% of crew ejecting suffer skeletal injury and vertebral fracture is relatively common (20-30%) when diagnosed by plain radiograph. The incidence of subtle spinal injury may not be as apparent.

Aim:

A prospective study to evaluate spinal injury following high velocity aircraft ejection.

Methods:

A prospective case series, admitted to QMC Nottingham, from 1996 to 2006 was evaluated. During this interval 26 ejectees from 20 aircraft were admitted to the spinal studies unit for comprehensive examination , evaluation and management. The investigations included radiographs of the whole spine and magnetic resonance Imaging (incorporating T1, T2 weighted and STIR saggital sequences). All ejections occurred within the ejection envelope and occurred at an altitude under 2000 feet (mean 460 feet) and at an airspeed less than 500 knots (mean 275 knots).

Results:

In this series 6 ejectees (24%) had clinical and radiographic evidence of vetebral compression fractures. These injuries were located in the thoracic and thoracolumbar spine. 4 cases required surgery (indicated for angular kyphosis greater than 30 degrees, significant spinal canal compromise, greater than 50% or neurological injury. 1 patient had significant neurological compromise, following an AO A3.3 injury involving the L2 vertebra.

11 ejectees (45 %) had MRI evidence of a combined total of 22 occult thoracic and lumbar fractures. The majority of these ejectees with occult injury had multilevel injuries.

Conclusion:

This study confirms a high incidence if spinal fracture and particularly occult spinal injury. Evidently vertical emergency aircraft ejection imposes major insults on the spinal column.

Once, appropriately prioritised, life preservation measures have been undertaken, an early MRI of the spne is mandatory as part of comprehensive patient evaluation.

Attitudes and beliefs of military physiotherapists and their impact on the management of military patients with low back pain

(Maj JW Heywood RAMC)

Introduction:

The aim of the study is to investigate the attitudes and beliefs of military physiotherapists utilising the 'Health care providers beliefs attitudes and impairments scale' devised by Rainville *et al* (1994). The scale is a valid and reliable tool which indicates the likelihood of advice given to patients with a low back pain is either pro active or fear avoidant. The scale has been utilised amongst health care professionals and has shown a high degree of correlation with patient vignettes. A high score on the HC- PAIRS, is indicative of that advice given to patients is generally fear avoidant and cautious. Conversely, a low score supports current research and indicates that pro active advice is more likely to be given to the patient.

Method:

The HC PAIRS questionnaire was distributed to all 90 military physiotherapists currently serving in a clinical role. The questionnaire was accompanied by a letter explaining that the nature of the study and requesting the questionnaire be completed and that the biographical information of gender, rank, age range, years military service, years physiotherapy experience, qualification to practice as a physiotherapist and highest academic qualification obtained be recorded.

Results:

A total of 83 returns were received. Statistical analysis was undertaken using the SPSS (version 14) statistical package. Results indicated a mean score of 50.86(SD 10.189). Military service equated to a mean of 8.86 years (SD 9.153), whilst physiotherapy experience gave a mean of 8.87 years (SD 6.327). Further statistical analysis was undertaken to establish whether there was a correlation between any of the biographical data collected and of the HC-PAIRS score. No correlation of statistical significance was identified in any of the categories.

Conclusion:

The results obtained from the military physiotherapists are very similar to those obtained in similar studies utilising civilian physiotherapists, moderately fear avoidant. Attitudes and beliefs would appear to be developed very early in the physiotherapist's career, exposure to both clinical experience and military culture would appear to have minimal impact on these beliefs. This has important implications when changes to traditional management strategies are being considered and implemented.

Orthopaedic Pathology in Potential Military Recruits

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There are well-established guidelines for musculoskeletal and connective tissue disorders in the assessment of potential recruits. There have been no critical appraisals of the application of these guidelines since their recent revision. The aim of this study was to examine whether common presenting conditions are covered by the guidelines and whether there was adherence by the assessor to the recommended outcome. We reviewed 110 potential recruits presenting to an Orthopaedic Consultant. There were a number of conditions not covered and a few occasions when the decision seemed contrary to the guidelines. In particular we think more consideration is needed of congenital deformities.

Penetrating Missile Injuries During The Iraqi Insurgency 2006

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Abstract

Background:

The conflict in Iraq has evolved from a conventional war in April 2003 to a guerrilla-based insurgency. We investigated whether this change altered the pattern of wounding and types of injuries seen in casualties presenting to a military field hospital.

Methods:

From January 2006 – October 2006, data was collected on all casualties who presented to the sole British field hospital in the region following injury from hostile action (HA).

Results:

86 casualties presented with injuries from hostile action (HA). 3 subsequently died of wounds (DOW – 3.5%). 46 (53.5%) casualties had their initial surgery performed by British military surgeons. 20 casualties (23.2%) sustained gunshot wounds, 63 (73.3%) suffered injuries from fragmentation weapons and 3 (3.5%) casualties sustained injury from blunt trauma. These casualties sustained a total 232 wounds (mean 2.38) affecting an average 2.4 anatomical locations per patient.

Conclusions:

The current insurgency illustrates the likely evolution of modern urban conflict. Discrete attacks from improvised explosive devices (IEDs) have become the predominant cause of injury. These tactics have been employed against both military and civilian targets. With the current threat from terrorism, both military and civilian surgeons should be aware of the spectrum and management of the injuries caused.

Injuries sustained during Indirect Enemy Fire (IDF); Analysis of Personal Protection (PP), Combat Body Armour (CBA) and Standard Operating Procedures (SOPs)

Maj. D Edwards, Capt. C Lane

Background:

Casualties due to IDF have been rare on operations in Iraq (six seen on Op Telic 4). As a consequence PP systems are fortunately seldom tested. During the closing months of 2006, the Shaat-Al-Arab Hotel (SAAH) base, in Basrah, came under frequent and accurate IDF.

Case 1:

0653hrs, 26th November, 2006, the SAAH came under attack from 6 rounds of IDF. Three live mortars landed within the accommodation complex resulting in 7 casualties (3xT1, 2xT2, 2xT3). The rounds were discovered to be 81mm Mortars of recent Iranian Manufacture. The mortars landed sequentially resulting in the casualties being in varying states of readiness at time of injury.

Case 2:

0018hrs, 9th December 2006, 8 rounds of IDF stuck the SAAH. One mortar landed in the accommodation complex at SAAH. One soldier sustained injuries (1xT1).

Analysis:

All soldiers treated were assessed by a full history and examination. The injuries sustained were correlated to patient activity, use of CBA and adherence to SOP's, at the time of injury. This information was then compared between cases. This was done by discussion between Role 1 RMO and Role 3 Surgical SHO. Strict adherence of SOPs and use of PP by individuals had not occurred in Case 1. PP's and SOP's where subsequently modified. In Case 2 a direct hit on a 6 man tent (all present at the time) resulted in only one casualty. SOP's and PP were in use at the time.

Conclusion:

Communication between Role 1 and 3 is vital for analysis of incident and casualties. This allows important information to be fed to the chain of command and therefore PP or SOP's could be up held or modified, the value of such can also be delivered to the troops. This proved beneficial in reducing casualties.

Penetration of the Warrior Armoured Personnel Carrier (APC) by Shaped Charge Improvised Explosive Devices (IED) – Emerging Injury Patterns

Maj D Edwards, Capt C Lane, Wg Cdr G Pathak, Surg Cdr S Stapley

Background:

For 20 years the Warrior APC has been the workhorse of the British Army Infantry. Attacks have been focused on the weak point between the body and the turret resulting in injury to the commander, gunner and driver, but not the passengers. From December 2006 to February 2007 there were 3 IED incidents involving the Warrior APC in which the main armour and the body was breached. This resulted in significant injury patterns and casualty numbers.

Cases:

1. In late December 6 casualties were admitted to the Field Hospital (6xT3), all suffering from thermal and/or fragmentation injures.
2. In mid-January, 4 casualties were admitted (1xT0, 1xT1, 1xT2, 1xT3). Injuries sustained included traumatic amputation of the lower limb, thermal, and lower limb fragmentation injuries.
3. In early February 6 casualties were seen in the Field Hospital (1xT0, 2xT1, 1xT2, 2xT3). Again injuries sustained included traumatic amputation of lower and upper limbs, thermal and fragmentation and blast injury.

Analysis:

In each case the IED was deployed at distances of approximately 30ft and consisted of a homemade shaped-charge of approximately 32kg. Its detonation was via a short command wire and fired at an angle of 0-45°. Three injury patterns emerged - 1) Thermal, 2) Blast and 3) Ballistic – with worsening severity if suffering from one, two or all three types. The average number of casualties per incident was 5.3, higher than seen in data collected in 2006 (2.3, Ramasamay et al).

Conclusion:

The use of improvised shaped-charges has resulted in significant injuries to the passengers of the Warrior APC. These have been a combination of thermal, ballistic and blast, often resulting in traumatic amputation. Due to the confined space of the APC an increase in casualties per incident has been observed and subsequent increase demand on medical resources.

Fit for Role?: A Retrospective Cohort Study of Surgical SHO operative experience in a District General Hospital, England and in a British Military Hospital, Operation TELIC, Southern Iraq

Abstract:

This retrospective audit compares 12 months of SHO surgical operating activity in an English DGH (Frimley Park MoD Hospital Unit) to that in a deployed British Military Hospital supporting Operation TELIC, the ongoing British military operation in Southern Iraq. Military SHO's rotate in civilian BST and occasionally deploy whereupon they work a 24 hour 1 in 1 on call for all surgical and orthopaedic admissions for the duration of deployment, typically 2 months.

Deployed SHO's were the primary operator in 68% of procedures performed on TELIC compared to 19% of procedures performed in a DGH. Total number of procedures performed were similar, n=320 on TELIC vs n=395 in MDHU. However, SHO's were more likely to perform MUA ($p = 0.003$) and ORIF ($p < 0.001$) on Operations when compared to non-deployed SHO's in a DGH. Because of the case mix, deployed SHO's performed many more simple operations than when in the UK. Deployed SHO's performed 49 incision and drainage procedures compared to only 7 in a DGH. Deployed SHO's were the primary operator on 115 skin lesions compared to 19 in the UK.

Overseas Operations clearly offer substantial practical surgical experience as primary operator with consultant supervision to the current 'Lost Tribe' of SHO's.

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NB This is well suited to a podium presentation and / or poster presentation.

A case review of military patients with femoral fractures admitted to RCDM

Bains B, Mangat K, Porter K

Abstract:

Background:

The femur is the largest and strongest bone with a very good blood supply. Large forces are required to result in a fracture. However once a fracture does occur, there can be significant displacement due to the strong musculature surrounding it and loss of blood. As a result of this, the patients are prone to neurovascular and circulatory compromise which can lead to significant mortality and morbidity. In an open fracture, there is the added potential for infection.

Aims:

A case review of military patients with femoral fractures sustained in hostile zones admitted to RCDM for definitive treatment.

Method:

Retrospective analysis of military patients with femoral fractures admitted to RCDM. Factors to be considered include mechanism of injury, type of fracture (Gustillo Anderson and AO classification), pre- and post-transfer operative treatment, complications, microbiology, length of hospital stay, and discharge status. The presentation will include case discussion of interesting patients.

Shrapnel induced arthritis of the hip

G F Rushforth RAMC (V)

A patient is presented who sustained an injury on D+2 in Normandy resulting in German shrapnel entering the femoral head. The patient represented in the 1960's with discomfort in the left hip and retained metal was seen.

He represented in 1999 with degeneration of the femoral head.

Discussion of the change in treatment of retained metal fragments in joints will be discussed.

Arthroscopic Subtalar Arthrodesis: Early results of a series of 22 patients

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Introduction:

Arthroscopy of the ankle and subtalar joints are established techniques in foot and ankle surgery. Arthroscopic ankle arthrodesis is well described and is useful in patients with a poor soft tissue envelope. Subtalar fusion is traditionally an open procedure with potentially significant complications but there is little published on arthroscopic subtalar arthrodesis.

Patients:

22 patients, made up of 9 males and13 females were operated on from March 2004 to present day with 12 to 36 months follow up. Indications for surgery included primary osteoarthritis and degeneration secondary to previous calcaneal fracture, tibialis posterior insufficiency, neurological conditions and previous ankle fusion. 8 Patients had a concurrent arthroscopic ankle fusion and 4 patients also had a talo-navicular fusion.

Methods:

All patients had surgery by the senior author and followed the same postoperative course. Patients were protected in plaster for 12 weeks with gradual increase to fully weightbearing at 6 weeks and x-rays taken at 6 and 12 weeks. Successful outcome was taken as clinical and radiological evidence of fusion.

Results:

21 patients (95.5%) achieved fusion by 12 weeks. There has been 1 nonunion but there have been no wound breakdowns, deep infections or other serious complications.

Discussion:

Previous authors have reported variable complication rates and significant rates of delayed and non-unions following open subtalar fusion. These early results suggest that arthroscopic subtalar fusion is a safe and reliable method with a high success rate and a low complication rate.

Posterior Ankle Arthroscopy: Indications, Limitations and Outcomes

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ABSTRACT:

Ankle arthroscopy is generally performed through anterior portals and provides good access to the anterior aspect of the ankle joint. However, the structure of the talus and the anatomical confines of the ankle joint limit access to posterior structures via this approach.

Developments in the technique of posterior ankle arthroscopy have determined the appropriate site for portals with minimal risk of iatrogenic neurovascular injury. This facilitates treatment of conditions such as flexor hallucis longus (FHL) release, excision of os trigonum for posterior impingement, treatment of retrocalcaneal bursitis and treatment of ankle and subtalar joint pathology.

Posterior ankle arthroscopy is a relatively new technique and has recently been adopted by the senior author. This study was performed to explore the benefits and limitations of this procedure and to identify early post operative results.

We describe our experience of this technique in treating 9 patients with varied posterior ankle pathology. 2 patients had excision of os trigonum; 2 had FHL release; 1 had both excision of os trigonum and FHL release; 3 had curettage for posterior osteochondral defect (OCD) of the talus; and 1 had resection of Haglund's deformity. The mean pre-operative AOFAS scores (Ankle-Hindfoot Scale) was 73 (range 47 to 85). The mean post operative AOFAS score at 3 months was 82 (range 75 to 87). 4 patients had recent surgery and await follow up. There were no complications. Two cases exposed the limitations of this procedure: Incomplete resection of (i) a Haglund's deformity required conversion to an open excision and (ii) a posteromedial OCD lesion will require further anterior ankle arthroscopy due to inadequate exposure.

We conclude that for the experienced arthroscopic surgeon this is a safe technique that facilitates treatment of a variety of ankle and hindfoot problems that would otherwise require open procedures.

The Effect Of Posterior Tibial Slope On Coronal Alignment In Total Knee Arthroplasty

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Background:

Coronal alignment is an important factor in long-term survival of TKA. Many implant systems are available and most aim to produce a posterior slope on the tibial component to reproduce the 7^0 seen in the normal tibia. We hypothesized that resecting the tibial plateau with a posterior slope can introduce error in coronal plane alignment in TKA.

Methods:

We used a standard saw-bones model in conjunction with a computer navigation system that is available for use in TKA (Stryker Orthopaedics). The normal protocol for preliminary referencing was followed; care was taken to identify tibial landmarks (tibial plateau reference point, true sagittal plane and transmalleolar axis). We then used a standard extramedullary alignment jig (Scorpio TKR System, Stryker Orthopaedics) with cutting blocks designed to give 0, 3, 5 and 7 degrees of posterior slope and varied the position of the alignment jig.

Variations included:

(1) Medial rotation of the cutting block,
(2) Medialisation of the plateau reference point,
(3) Medio-lateral translation of the distal jig, and
(4) External rotation of the distal jig.

Results:

In all experiments, there was a greater deviation from ideal coronal alignment as the slope on the tibial cut was increased. The greatest influence was with external rotation of the distal part of the jig which produced 3^0 of varus at only 15^0 of external rotation with a 7^0 slope. Medialisation of the proximal reference point worsened this to 4.5^0 of varus.

Conclusions:

We have quantified the degree of coronal malalignment that can occur for different posterior slopes during tibial resection for TKA. We recommend either using a minimal slope or navigation to ensure correct implant positioning.

Effect Of Pre-Operative Counselling On Smoking Patterns On Patients Undergoing Forefoot Surgery

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Introduction:

Cigarette smoking is well recognised as contributing to a higher complication rate following foot surgery. The efficacy of pre-operative counselling to stop smoking has not been evaluated following foot surgery. The purpose of this study was to determine the effectiveness of pre-operative counselling prior to elective forefoot surgery.

Methods:

A record of smoking status was taken in all patients prior to surgery. Counselling as to the increased complication rate was undertaken by the lead surgeon at the initial outpatient visit and repeated at pre-operative assessment, with patients advised to see their GP for specific strategies and medications. Further smoking history was taken on admission and in review clinics. A telephone survey was then conducted to ascertain smoking patterns following surgery.

Results:

Ninety-eight patients underwent forefoot osteotomy or fusion surgery, over an eighteen-month period, by a single surgeon. Of these, twenty-four were recorded as smokers, with follow-up, at a mean interval of twelve months, achieved in twenty-two. Sixteen stopped smoking pre-operatively, with a further four reducing their daily intake as a direct consequence of the counselling. The majority of patients were unaware of the detrimental effects of smoking following foot surgery. Only four patients re-commenced pre-operative smoking patterns following surgery implying long-term behaviour change in the remainder. One complication of a DVT was recorded in a persistent smoker.

Conclusion:

This small study has illustrated the benefit of utilizing the pre-operative clinic consultation to educate our patients of the importance of giving up smoking prior to elective surgery. Counselling has been shown to provide an incentive for smoking cessation, which has been maintained after the peri-operative period. Although forefoot fusions and arthrodeses were used to provide the figures in our study, the results are transferable to other branches of foot and ankle surgery.

Podium or poster, publish or perish – conversion rates of Combined Services Orthopaedic Society Abstracts

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Introduction:

Presentation and subsequent publication has become 'the holy grail' of surgical trainees. This perceived importance of presenting work is further reinforced by the fact that over sixty percent of information contained in standard orthopaedic texts is quoted from published abstracts and not full papers. There is concern that increasing reliance is placed on such work and there are calls to restrict the routine use of abstracts in this manner.
This concern is born out of evidence that conversion of presented work into peer-reviewed publication is globally poor throughout the medical specialities.
The purpose of this study is to determine the conversion rate of work presented at the Combined Services Orthopaedic Society into peer review publication.

Methods:

A Medline search of 81 consecutive published abstracts over six years was carried out. Further cross-referencing was established using Dialog Datastar with a search strategy. The rate of publication of papers presented at these meetings was then compared against other medical specialities across national and international forums.

Results:

26 full paper publications were identified. This yields a conversion rate of 32%. This figure is on a par with meetings such as the BOA (35%), the AAOS (34%) and EFORT (40%). It is also a similar level to that seen with work presented at other speciality meetings.

Discussion:

The conversion rate of papers presented at the Combined Services Orthopaedic Society is competitive with other orthopaedic and medical meetings. Overall conversion of presented works to robust literature is poor. Reasons for low publication rates include pressures of time, insufficient planning and disputes amongst colleagues.
In light of increasing pressure on selection of trainees and the perceived need to present work at meetings, this paper reinforces the need for thorough planning when undertaking research & audit and strict acceptance criteria from organising bodies.

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The "Flipped fibular graft" ankle reconstruction following wide local excision of distal fibula sarcoma

Jackson WFM, Hinsley DE, Clover J, Theologis TN, Gibbons CLMH, Giele H

Young active patients with malignant tumours arising in the distal fibula, requiring excision, present a challenge to the treating surgeon. Wide local excision is advocated, to achieve clearance, however, disruption of the ankle mortise results and fusion is often required to restore stability. The loss of movement is poorly tolerated in the younger patient and leads to progressive degenerative changes in surrounding joints.
Excision of the distal fibula lesion followed by rotation of the proximal fibula on its vascular pedicle recreates the ankle mortise with consequent restoration of ankle stability and retaining ankle movement.
Between 2000 and 2007, we have performed this technique on 4 patients. Diagnoses were all of high-grade sarcomas. To date there has been no evidence of distant or local recurrence. One case was complicated by infection which resolved with further surgical intervention and antibiotics; All of the fibula grafts survived. Good to excellent results were achieved (Toronto Extremity Salvage Scores).
We will present the technical aspects of this procedure, with particular reference to the most recent case, performed on a young female patient with parosteal osteosarcoma.
We believe this technique provides good oncological and functional results and recommend this treatment option is considered in young active patients requiring distal fibula excisions for sarcoma.

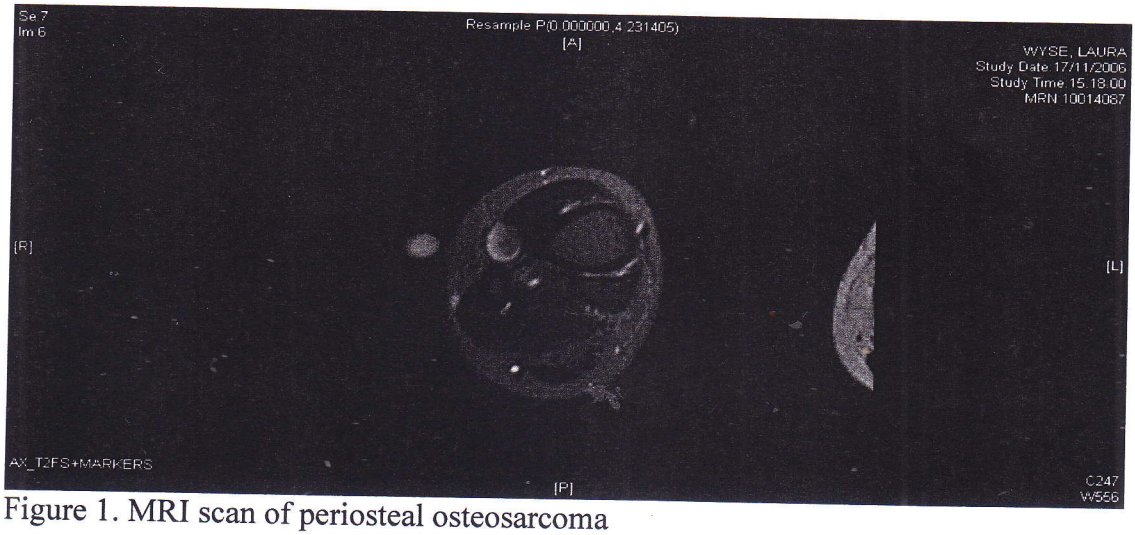

Figure 1. MRI scan of periosteal osteosarcoma

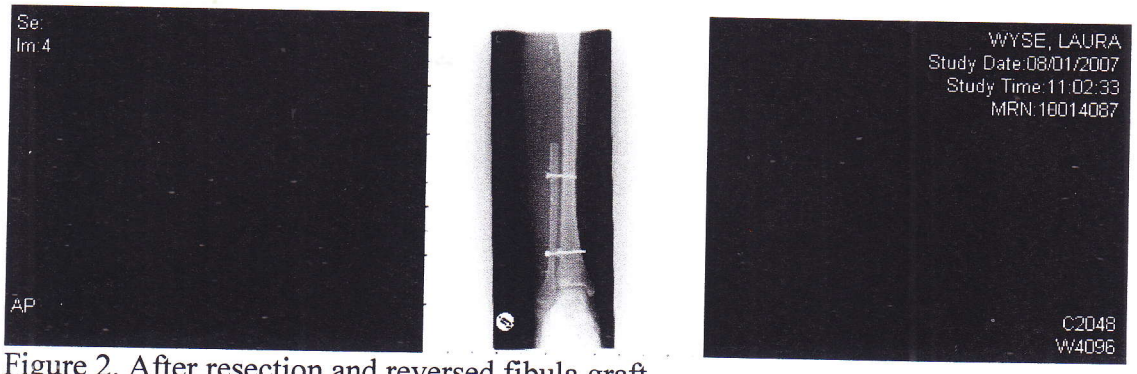

Figure 2. After resection and reversed fibula graft.

Combined Syringe Cement Pressurisation And Inter-Osseus Suction; An Effective Technique In Total Knee Arthroplasty

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Our study looked at the short and medium-term results of a new and cost-effective method of bone surface preparation and cement introduction. Early failure and loosening of components in knee arthroplasty has been attributed to inadequate bone-cement and prosthesis- cement interfaces, established at the time of surgery. Cement pressurisation and inter-osseus suction have been shown to achieve effective cement penetration and inter-digitation into cancellous bone.

We have devised a technique of cement pressurisation using a modified 20 ml syringe, combined with intra-osseus suction. Retrospective evaluation of a series of 50 post-operative radiographs of total knee replacements, undertaken without the use of tourniquet, have shown that even and effective penetration of cement to a depth of 8.0 10.6 mm can be achieved consistently using this technique. Evaluation of post-operative radiographs at a minimum of 5 years follow-up showed 16 knees with minor lucent lines about the tibial component with a maximum Knee Society Total Knee Arthroplasty Roentgenographic Score of 2.

In conclusion, we propose that this simple technique of bone surface preparation and cement introduction produces good results in the short and medium term.