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Poster

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Improving fracture clinic services and becoming compliant with BOAST 7 guidelines with the use of Virtual Fracture Clinic

Charles Wallace
SPR Homerton Hospital, UK

The British Orthopedic Association recommends that patients referred to fracture clinic are reviewed within 72 hours. With the increase in referrals and limited clinic capacity it is becoming increasingly difficult to see every referral with in a 72-hour time frame. Some patients are waiting 2 weeks or more before they can be seen in a fracture clinic. With the aim of improving care by seeking to meet BOAST 7 target, waiting times for fracture clinic appointments at the Homerton University Hospital were audited prospectively against this national guideline, before virtual fracture clinic was implemented and 6 weeks after the implementation of virtual fracture clinic at our hospital. Virtual fracture clinic is where an Orthopedic consultant reviews a patient's x-rays and A&E documentation and decides if that patients' needs to be seen in a face to face fracture clinic to discuss operative vs. non-operative management of their injury or if a treatment plan can be delivered without the patient having to come back to hospital.

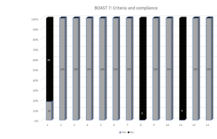
Materials and methods: The study was conducted as a prospective closed-loop audit in which the second cycle took place after the implementation of the new virtual fracture clinic service.

Results: The first cycle showed a non-compliant waiting time with only 18% of patients being seen within 72 hours. Following the implementation of virtual fracture clinic, 84% of all patients were reviewed within 72 hours.

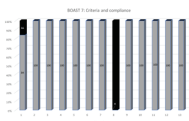
Discussion: The improvement in performance was delivered with no increase in the clinic's capacity. Virtual fracture clinic eased the clinic's capacity by avoiding overbookings and oversubscribing of patients and more than 80% of patients were seen within 72 hours.

Conclusion: Virtual fracture clinic delivered a significant reduction in waiting times. Virtual fracture clinic has only just been implemented at the Homerton University Hospital and hopefully at the next audit we will be 100% compliant with the BOA BOAST 7 Guideline. We would recommend that virtual fracture clinics being rolled out in Orthopedic departments in all hospitals which have Orthopedic services.

BOAST 7: Results (April 2019)



BOAST 7: Re-audit Results (August 2019)
(After Virtual Fracture clinic implementation)



Biography

Charles Wallace currently works at the Homerton Hospital as a Specialist Registrar in Trauma and Orthopedics. He is dedicated to quality improvement projects and being a part of NHS Improvement.

charlesnwallace@gmail.com

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Tibial polyethylene insert locking mechanism in posterior stabilized arthroplasty can fail with or without trauma

Shady Hermena
Worcestershire Royal Hospital, UK

Modular knee replacement systems allow intra-operative flexibility in component choice. Tibial polyethylene inserts locking mechanisms have been developed to reduce micro-motion and backside wear of the tibial insert.

Case report: We describe a case of failure of the locking mechanism in a posterior stabilised primary knee replacement 6 years after the initial surgery. There was a previous history of trauma 9 months before presentation. Radiographs confirmed failure of the locking-bar with migration to the medial side of the knee. The tibial insert and locking-bar were revised, and the patient made a full recovery.

Conclusion: Locking mechanism is essential to reduce back wear in modular total knee arthroplasty systems. However, disengagement between the polyethylene insert and the metal base plate has been reported in early and late stages after surgery.

Clinical Massage: This case report describes one mode of failure to be considered when a patient presents with a painful knee replacement. Similar case has been reported in 2012 by E. Thienpont without a history of trauma. We are not aware of any similar case reports in the English literature. Diagnosis of a locking-bar failure can be easily diagnosed by anteroposterior radiographs.

Keywords: Modular knee replacement, failure of the locking mechanism, posterior stabilized primary knee replacement.

Biography

Shady Hermena is trauma and orthopaedic middle grade in Yeovil District Hospital NHS Foundation Trust. Shady was graduated from the faculty of medicine at Assiut University in Egypt in 2007. He completed his basic training in trauma and orthopaedic surgery in Egypt. He was awarded a master's degree in trauma and orthopaedic surgery from Assiut university (Egypt) after completing primary research evaluating the results of using the Triple Neurotization technique for reconstruction of upper trunk brachial plexus in adult juries. In 2016 he was awarded the membership of the royal college of surgeons of England. In 2017 he moved his training to the UK and started to work in the NHS.

shadypaulis@hotmail.com

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Outcomes of surgical management of recurrent dislocation of primary Total Hip Arthroplasty (THA)

Weng Jeng Chan
Warrington and Halton Hospitals NHS Foundation Trust, UK

Background: Recurrent dislocation or instability after Total Hip Arthroplasty (THA) remains a challenging problem. The aim of this study is to evaluate the outcomes, particularly re-dislocation after surgical treatment of recurrently dislocating primary THA.

Methods: We retrospectively reviewed all patients who underwent open surgical management for recurrent dislocation of the primary THA from 2008 to 2018 in Warrington Hospital. Data collected includes; demographics, number of dislocations prior to surgical management, indication for primary hip replacement, any neuromuscular condition or congenital or developmental hip pathology. We also collected details of the components revised (acetabular cup, femoral stem or both) and recorded the outcome with the primary outcome looking at re-dislocation following revision surgery.

Results: A total of 39 patients were identified with mean age of 75(35-91) years, 33(85%) were females. All patients suffered more than 3 complete dislocations before undergoing surgical treatment. Three patients had a primary diagnosis of inflammatory arthritis and all others were diagnosed with osteoarthritis of the hip joint.

Posterior Lip Augmentation Device (PLAD) was used in 6(15.5%) patients, 2 out of these 6 patients suffered further dislocation after the revision surgery (33% failure rate). In 8(20.5%) patients both femoral and acetabular components were revised, one patient suffered further dislocation in this group (12.5% failure rate). In the remaining 25(64%) patients; only acetabular component was revised, two patients in this group suffered further dislocation (12% failure rate). Dual mobility components were used in 4(10.2%) patients and constrained acetabular components were used in 4(10.2%) patients, no further dislocation was observed in these patient groups. A total of 12.8% re-dislocation rate was observed in this cohort of patients.

Conclusion: In patients undergoing revision surgery for recurrent dislocation of total hip replacement, we observed 12.8% failure due to further dislocations. Our study is limited by smaller numbers and retrospective design.

Biography

Weng Chan is an F2 doctor in trauma and orthopaedics, he is interested in Orthopaedics and keen to pursue it as a career path. He is actively involved in quality improvement and audit projects, with a strong desire to learn and contribute more for the medical field.

weng.chan@nhs.net

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Identification of indicators to assess the variation in Fragile Hip Fractures (FHF) recovery: A European Pathway Association study

Cedric Slock
University of Leuven, Belgium

Statement of the problem: Fragile Hip Fractures (FHF) have a devastating impact on the elderly, are regarded as a major public health concern and remain to be associated with excessive short-and long-term mortality. McGlynns' landmark study showed that only 22.8% of recommended care was given to hip fracture patients. Surprisingly, there remains to be heterogeneity in adherence to clinical guidelines within and between hospitals, resulting in suboptimal patient care and patient outcomes throughout Europe even though it has been shown that optimal FHF care can result in improved patient outcomes and cost-savings. In addition, tailored multidisciplinary clinical pathways and programmes can improve patient outcomes. Nonetheless its potential to improve outcomes and adherence to guidelines, it remains unclear why improved compliance to evidence based key interventions does not always lead to improved patient outcomes. Therefore, this study aims to assess the variation within and between European organization that provide care for FHF patients.

Methods: A multimethod design was used by 15 European hospitals involved in FHF care, to develop a set of FHF care pathway indicators. The development process is supervised by the European Pathway Association.

Findings: A literature review was presented during a 2-day expert panel in May 2019. The outcome of this consensus meeting is a set of 16 process and 8 structure indicators. These indicators will help the teams in understanding, benchmarking and enhancing the rapid recovery pathway for FHF. The next step is a retrospective analysis of 450 patient records (30 in each of the 15 participating centres). This analysis will provide the necessary data to benchmark the organization of care within and between these 15 European trauma centres. Based on the feedback report the trauma centres will be able to further improve their organization of care.

Biography

Cedric Slock is a physiotherapist and health services researcher. He works as research assistant at the Leuven Institute of Healthcare policy at KU Leuven. He is the project officer of the Fragile Fracture Pathway Study under the lead of the European Pathway Association. This European multicentre study is funded by Zimmer Biomet with an unrestricted grant to the E-P-A.

cedric.slock@kuleuven.be

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Accepted Abstracts

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Surgical gowning technique: Are we contaminated before we cut?

Kenton Panas
O.U. Medical Center, USA

Objectives: The purpose of this study is to assess possible breaches of sterility during the initial gowning step.

Design: Observational study. 27 gowning events were monitored for contamination during a simulated two-person gowning process in which a surgical technician assists a surgeon in the gowning process at the beginning of a surgical procedure. The lower portion of the technician's gown was coated resin power prior to the gowning process to simulate contamination.

Setting: Single-institution level 1 trauma center.

Participants: Three physicians and three tenured surgical technicians.

Intervention: Observed contaminated areas represented by ultraviolet (UV) resin powder under UV light on the gown of the surgeon after the two-person gowning step.

Main Outcome Measurement(s): Number and surface area of contamination events.

Results: There was a 66.67% rate of contamination of the surgeon's gown sleeves while being gowned by a surgical technician. The overall median contamination for the short surgeon was 1.3 cm^2. For the medium height surgeon, the overall median contamination was 1.4 cm^2. The tall surgeon had an overall median contamination of 2.9 cm^2. Of the short, medium, and tall surgeons, the number of contamination events were six, five, and seven, respectively. The study suggested the surgeon's height was a significant source of variation (p=0.046).

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Use of preoperative calibration markers and digital templating in patients undergoing hemiarthroplasty at St Mary's Hospital

Prachi Mann
Imperial College London NHS Trust, UK

Introduction: Use of pre-operative digital templating is useful in selecting the correct size implant, anticipate potential intraoperative difficulties and minimize postoperative complications including Limb Length Discrepancy (LLD) and dislocations in patients with neck of femur fractures undergoing total hip arthroplasty or hemiarthroplasty. Calibration markers should be placed on digital radiograph to correct the variation in magnification factor between X ray images.

Standard: The British Orthopaedic Association 2012 guidance recommends that X ray calibration and digital templating should be used in all patients undergoing hip arthroplasty.

Aims/Objectives: To evaluate whether a calibration device is used in preoperative imaging in patients who are admitted with a neck of femur fracture in St. Mary's hospital. In addition, this audit will assess if digital templating software (Trauma CAD) is used by surgeons for preoperative planning.

Methods: Inclusion criteria was patient's at St. Mary's Hospital with a neck of femur who had undergone a hemiarthroplasty. Patients were identified from the departmental neck of femur fracture database that St. Mary's Hospital. Data was obtained from Picture Archiving and Communication System (PACS) to determine percentage of patient's that had a calibration marker on preoperative radiograph and evidence that digital templating had been used to plan the hemiarthroplasty.

Results: 34 cases were identified that met in inclusion criteria. Only 6 out of 34 patients had a calibration marker on preoperative radiographs and use of digital templating. The majority of patients did not have calibration marker of preoperative radiographs. VoyantMark® was the preferred calibration marker over King Mark®. In patient's that did have a calibration marker, it was either incorrectly positioned or only partially visible on the radiograph. Therefore, we implemented an education programme for radiographers including posters in the X-ray department and tutorials on the use of calibration markers.

Conclusion: The number of patients have calibration marker and digital templating prior to hip arthroplasty needs to increase. The calibration marker should also be appropriately position on preoperative radiographs. We will re-audit in 3 months' time to close the audit loop and assess the impact that our changes have made.

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Isolated primary bone tumours of the lesser trochanter: Demographics, diagnosis and management

Ahmed Saad
Royal Orthopaedic Hospital, UK

Primary bone tumours of the Lesser Trochanter (LT) are rare and the literature describing them is sparse. In this paper, we describe the largest series of LT tumours describing the demographics, diagnosis and management.

Methods: A retrospective search of prospectively maintained radiology and oncology databases was performed to identify bone tumours of the LT diagnosed between 2007 and 2018. Metastatic lesions were excluded. All cases were re-reviewed by a senior Consultant Radiologist and all case of benign isolated tumours of the LT were included.

Results: 23 cases of isolated LT tumours were identified. There were 15 males and 8 females. Median age of our cohort was 32 (14 - 63) years. Most (n=19, 82.6%) cases had classic radiological (Radiographic, MR Imaging and CT) features and therefore did not undergo biopsy. 4 patients had equivocal radiological investigations that required biopsy to confirm the diagnosis. MR imaging was the most commonly used imaging modality for diagnosis (n=17, 73.9%).

There was a broad range of tumour subtypes, and osteochondroma (n=17, 73.9%) the most frequently diagnosed. Surgical excision was performed in 4 patients (all osteochondromas) and 4 patients underwent therapeutic radiological guided hip injections for symptomatic relief. The remaining cases were managed conservatively. Where they were identified incidentally, no intervention was required.

Conclusion: We report the largest case series of isolated primary bone tumours of the LT. All isolated primary bone tumours of LT are benign. Osteochondroma is the most common. The diagnosis can be made with on radiological investigations in most patients.

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Warfarin versus low molecular weight Heparin versus Aspirin with regards to infection rates following knee or hip arthroplasty: A meta-analysis of 9 studies including 184,094 cases

Luke Hughes
University of Central Lancashire, UK

Aim: To review current literature and determine if patients undergoing hip or knee arthroplasty and receiving warfarin in the perioperative period, are at increased risk of developing peri-prosthetic joint infection.

Methods: A systematic literature search was conducted on 12th March 2018 using PubMed, EMBASE, CINAHL and Cochrane Register of Controlled Trials (CENTRAL) databases to identify studies that compared warfarin, aspirin and/or low molecular weight heparin with regards to infection and/or DVT/PE rates following hip or knee arthroplasty. Identified studies were reviewed to identify eligible studies. Studies were included if they compared perioperative anticoagulation with warfarin, aspirin and/or heparin with regards to rates of infection in those with hip or knee arthroplasty.

Results: 9 articles including 188,399 patients met the inclusion criteria for the meta-analyses. Meta-analysis showed that warfarin prophylaxis is associated with a higher risk of deep infection as compared to aspirin (primary and revision TKAs combined) with an estimated OR 1.929 (95% CI 1.20-3.11, P=0.007). Similarly, warfarin prophylaxis is associated with a higher risk of overall infection as compared to aspirin (primary and revision TKAs combined) with an estimated OR 1.610 (95% CI 1.028 – 2.522, P = 0.038). There was no statistically significant difference in the estimated rates of infection between warfarin and LMWH and between LMWH and aspirin (Table 3). Meta-analysis of the studies included in the infection analysis and which reported on VTE rates, showed that warfarin prophylaxis is associated with a higher risk of PE as compared to aspirin (primary and revision TKAs combined) with an estimated OR 1.340 (95% CI 0.97 – 1.83), Furthermore, warfarin prophylaxis is associated with a higher risk of overall VTE as compared to aspirin (primary and revision TKAs combined) with an estimated OR 1.340 (95% CI 0.97 – 1.83).

Conclusions: Warfarin is associated with a higher infection rate compared to aspirin but with an equivalent or less VTE rate. This needs to be considered when choosing the agent for DVT prophylaxis and when comparing infection rates amongst different providers.

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Improving the management of shoulder dislocation by use of the BESS/BOA patient care pathway for the management of traumatic anterior shoulder instability

Mahmoud Awadallah
North West Anglia Foundation Trust, UK

Background: Shoulder dislocation and associated neurovascular injuries can have poor outcomes if missed. In 2015 the British Elbow and Shoulder Society and British Orthopedic Association (BESS/BOA) published a Patient Care Pathway for the Management of Traumatic Anterior Shoulder Instability. We audited our management of shoulder dislocations against these guidelines and implemented changes to improve patient care.

Methods: We conducted an initial audit of the management of shoulder dislocation in the Emergency Department (ED). We noted areas of poor performance for the documentation of neurovascular examination and for obtaining adequate X-ray views. We concentrated on improving these prior to audit 2. We produced a simple chart and pro forma to guide correct management conducted teaching sessions for ED staff. We also met with ED consultants, radiographers and radiology consultants to encourage the use of Axillary / modified Axillary view X-rays.

Results: Audit 1, n=22. Pre-reduction; the Axillary nerve was documented in 6 patients (27%). Median, Ulnar and Radial nerves 2(9%). AP X-ray was performed in 22(100%) and Axillary X-ray 4(19%). Post-reduction; the Axillary nerve was documented in 6(27%). Median, Ulnar and Radial nerves 1(4.5%). AP X-ray 22(100%), Axillary X-ray 3(15%).

Audit 2, n=20. There was a large improvement in all parameters.

Pre-reduction; the Axillary nerve was documented in 16(80%). Median, Ulnar and Radial nerves 15(75%). AP X-ray was performed in 19(95%), Axillary X-ray 16(80%). Post-reduction; the Axillary nerve was documented in 11(55%). Median, Ulnar and Radial nerves 11(55%). AP X-ray 22(100%), Axillary X-ray 17(85%).

Conclusion: We have greatly improved the documentation of neurovascular status after shoulder dislocation and the use of pre- and post-reduction X-rays, including a large increase in the use of Axillary / modified Axillary views.

Implications: By implementing the BESS/BOA guidelines we have improved the care of patients with shoulder dislocations.

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Ultrasound-guided surgery for the tarsal tunnel syndrome (UGAFDS): A novel ultra-minimally invasive approach

Alejandro Fernandez Gibello
La Salle Campus Madrid, Spain

The Tarsal Tunnel Syndrome (TTS) was first described by Keck et al. and Lam et al. in 1962 and yet we still don´t know the real prevalence of this pathology, but we know other interesting data such as the plantar heel pain has a prevalence of 11-15% of the adults with foot problems and it has been seen that up to 88% of the patients with this chronic pain have some degree of entrapment.

The purpose of this study is for describe and proof the safety of a novel ultrasound-guided surgery for the decompression of the tibial nerve and its branches.

For the "*in vitro*" study, we performed the technique on 10 fresh-frozen feet (6 males, 4 female), which belong to the Body Donation Centre of the Completeness University of Madrid.

In our study we made the liberation of the tarsal tunnel without damaging any Nobel structure.

For the conclusion, it could be a promising technique to treat the TTS minimizing the possible adverse effects and complications.

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Steroid vs my special preparation for Osteoarthritis/PFPS

Kiran Kumar Shah
St. Michael Hospital, China

Introduction: In osteoarthritis most surgeons prefer steroid namely triamcinolone or methyl prednisolone for Intra-Articular injection, but its efficacy is very limited, source can be proved from various article review. But I prefer my special preparation which consists of combination of triamcinolone hexacetonide or hydrocortisone or methyl prednisolone plus vit. B1 plus vit. B12 plus lidocaine plus normal saline. In my clinical practice as Orthopaedic Surgeon I have given IA for 15 cases of OA. Their follow-up was made at 2 weeks, then at 1 month for three consecutive months, then at 6 months, then finally at 2 months. After one single shot of my special preparation patient was pain free for over 1 year in which 15 days physiotherapy course was included in 1st 2 weeks after IA. All 15 cases were known cases of DM-2 with HTN and age between 49 to79.

Discussion: Since all patients had comorbid conditions and already under lots of drugs for DM and HTN, so my special preparation for OA, does not include any oral meds just single shot of my preparation. This puts patients in favourable state and puts patients in no risk or harm from long term analgesic use.

Conclusion: My special preparation single shot is superior and cost effective in comparison to other steroid repetitive use. It uses help avoid long term analgesic use and its complications in patients with DM and HTN as their renal function and Heart function are always at risk.