Tibial Nailing—an innocent procedure? A ten year study
Amresh P. Singh, A. Mahaleb, Binod K. Singh
Musgrave Park Hospital, Taunton
City Hospital, Birmingham

Diaphyseal fracture of tibia is a common injury and is usually treated by tibial nailing. We did a retrospective study of 100 tibial diaphyseal fracture treated with closed tibial nailing between 1996 and 2006. The purpose of the study was to look for overall incidence of complications following tibial nailing and to see whether we have improved with time.

We also looked at union rate, Functional outcome and complication rate including anterior knee pain, metal work related complication and second operation rate.

The overall complication rate was 49%. Incidence of anterior knee pain was 18%, Removal of screws in 32% and removal of nail in 16%, Compartment syndrome in one case, thromboembolic complication in 2%, and infection in 2%.

The incidence of anterior knee pain in literature is between 10% and 50%.

Experience of the operating surgeon did not influence the incidence of anterior knee pain.

Intramedullary nailing is commonly used to treat most unstable fractures. These patients should be explained about the complication rate in detail preoperatively particularly anterior knee pain and the related disability.


Aim: Chronic osteomyelitis still remains challenging and expensive to treat in spite of advances in antibiotics and operative techniques.

We present our experience with free muscle flap after radical debridement of chronic osteomyelitis, performed as a single stage procedure.

Methods: We retrospectively identified eight patients (5 females) with mean age of 63 years (range 40–71 years).

Case notes were reviewed for co morbidities, pre and post treatment inflammatory markers (plasma viscosity and CRP) and clinical staging.

Mean follow up was 3 years (range1–6 years).

All the patients were jointly operated by orthopaedic and plastic surgeons and underwent thorough debridement and muscle flap (Seven free flaps and one rotational flap) in the same sitting. All the patients were reviewed regularly by plastic and orthopaedic surgeons.

Seven patients had free Gracilis flap and one had Triceps flap.

Clinical assessment of reinflection was made on presence of erythema and wound discharge. Primary outcome measure was resolution of infection.

Results: All patients had full resolution of osteomyelitis as evident by clinical examination and inflammatory markers.

One patient had minor wound discharge at three years which settled with conservative management. One further patient developed eczematous dermatitis around the flap which was managed successfully by the dermatologist.

Conclusions: We believe this to be the only study in which both the procedures (debridement and muscle flap) are performed in one sitting. This technique is a successful and useful addition to the armamentarium of surgeons in the management of chronic osteomyelitis.


Management of open tibial fractures—Implications of BOA/BAPRAS guidelines to acute trauma service in a district general hospital
S. Srinivas (MRCS) (Locum Specialty Registrar)*, H. Versey (MRCS) (Core Surgical Trainee (CT2)), A.N. Murty (MS, FRCS (T&O)) (Consultant Orthopaedic Surgeon)
Department of Trauma and Orthopaedics, Northumbria Healthcare NHS Trust, United Kingdom

Aim: To identify the change in practice that could occur if BOA/BAPRAS guidelines were implemented in non-specialist centres providing acute trauma care.
Methods: A clinical and radiological review of all open tibial fractures treated over a 2-year period (June 2007–June 2009) across 2 acute care hospitals (non specialist centres) was undertaken. Patient demographics, mechanism of injury, AO fracture type and soft tissue injury classification

Results: During period of review, we had treated 30 open tibial fractures [females 8, males 22; median age (range) = 35 (12–89) years]. Median (range) follow up period was 6 (0.5–24) months. Wound grades and fracture type are described in Tables 1a and 1b. If recommendations of BOA/BAPRAS were implemented, review of fracture patterns and/or wound classification showed that 26 out of 30 would have required referral to a specialist centre. Of these 26 cases, all patients received antibiotics, tetanus status checked in 18 and documented photographs were available in 6 patients. Antibiotics were given at surgical induction and continued for 48 h in 21 cases (not documented in 5 cases). All patients had a thorough wound debridement and 24 patients went on to have definitive fixation (IM nail 13; ORIF 7, external fixator 4). Plastic surgery were involved in soft tissue management in 10 cases, (<48 h = 6; delayed = 4). Average (range) time to fracture union was 16 (6–40) weeks. There were minor complications (superficial infection, symptomatic implant) in 4 cases. Major complications were graft failure/wound necrosis (3), deep infection (3), non-union (1) and death (1).

Discussion: Our current practice needs to improve by better documentation of initial management and standardisation of antibiotic policy. If new BOA/BAPRAS guidelines are implemented, more than two-thirds of open-tibial fractures seen will need referral to a specialist centre. This would mean that the receiving specialist centre will deal with at least 12 additional cases of these complex injuries every year from every referring hospital in its catchment area.

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1A.33

Prophylactic fixation of donor site in radial forearm osteocutaneous free flaps using locking reconstruction plate augmented with mineral cement

F. Yaish, P. Jettoo *, A. Waton, H. B’Durga, A. Nanu

Introduction: Donor site fractures in osteocutaneous radial forearm free flap (ORFFF) can be minimised by prophylactic plating. Techniques using DCP and LCP plates have been described. We report our experience using small fragment locking reconstruction plate augmented with mineral calcium phosphate cement used to fill the bony defect. This technique may provide a biological construct and stability in addition to preventing donor site fracture.

Methods: Retrospective review of 18 consecutive patients underwent prophylactic fixation of flap donor sites. Mean follow up was 22 months (7 months to 4 years). 9 were not contactable (7 died, 2 moved away). The remaining 9 completed a ‘Disabilities of the Arm, Shoulder and Hand’ questionnaire (DASH) score. Non-contactable patients had case-note review.

Results: 1 patient sustained a donor site fracture. This was asymptomatic detected radiologically in the early post-operative hospital stay. Radiological assessment revealed a harvested graft length of 71 mm and thickness exceeding 50%. The fracture progressed to satisfactory union. No other donor site fractures were detected in the rest of the group. The mean DASH score was 29.8. No other plate related complications were noted.

Conclusion: Prophylactic fixation of donor site in ORFFF using reconstruction LCP plate with calcium phosphate cement showed low incidence of donor site fracture. The use of reconstruction plate allows easy and conforming application with less prominent metal ware. The locking fixation in addition to the mineral cement augmentation may provide a biological environment for healing.


1A.34

The helicopter emergency service in the transport of trauma patients: a systematic review of the evidence

Daniel P. Butler *, Keith Willett

Department of Orthopaedic Trauma Surgery, University of Oxford, Kadoorie Centre, John Radcliffe Hospital, Oxford, OX3 9DU, United Kingdom

E-mail address: dan.butler@doctors.org.uk (D.P. Butler).

The UK’s National Confidential Enquiry into Patient Outcome and Death (NCEPOD) report into trauma care within the UK concluded that “almost 60% of the patients . . . received a standard of care that was less than good practice”, with pre-hospital care and trauma networks found to be deficient. Pre-hospital care of trauma patients is a matter of great debate. The optimal transport method remains undecided with conflicting data comparing helicopter and ground emergency medical transfer. This study systematically reviews the evidence comparing helicopter and ground transfer of trauma patients from the scene of injury.

Methods: A systematic literature review of all population-based studies evaluating the impact on mortality of helicopter transfer of trauma patients from the scene of injury. We searched MEDLINE, CINAHL and EMBASE from January 1980 to December 2008 and selected and reviewed potentially relevant studies.

Results: A search of the literature revealed 23 eligible studies. 14 of these studies demonstrated a significant improvement in trauma patient mortality when transported by helicopter from the scene. 5 of the 23 studies were of level II evidence with the remainder being level III evidence. Data were then entered into an evidence table and reference made to transport staffing, intubation rate, time at scene and time/distance of transfer.

Conclusions: The role and structure of HEMS in a modern trauma service is a debate that is likely to continue. Pre-hospital care design should be specific to critical incident frequency, geographical arrangements of hospital facilities and travel times within each trauma network. It is also important to consider the benefits and capabilities of the emergency medical team separately from the transport method being considered. An effective helicopter EMS will ultimately depend on effective operating procedures and task-