



Journal Club: 2nd November 2010
Organiser: Mr. Bijayendra Singh
Medway NHS Foundation Trust, KENT.

Title: Tibial Fractures Plating / Nailing / External Fixation

Management of severe open tibial fractures: the need for combined orthopaedic and plastic surgical treatment in specialist centres.

Naique SB, Pearse M, Nanchahal J.
J Bone Joint Surg [Br] 2006;88-B:351-7.

Critique: Rahij Anwar SpR 6, South East Thames Orthopaedics

This retrospective study of 73 grade 11B open fractures. The fractures were split into 2 groups, a primary group, and a tertiary group. The primary group was a group of patients who had their initial management at the study center. The tertiary group had their initial surgery at another institution before referral to the study center for further management.

The study found that the timing to initial surgery didn't affect the deep infection rate, but the tertiary group had increased (non statistically significant) incidence of deep infection. The tertiary group had a longer time to definitive soft tissue cover, and increased incidence of flap failure (again both non significant). The tertiary group also had high levels of early stabilization revision (48%). The final functional results of the two groups were similar.

The study advocates that the treatment of serious open fractures be conducted in a unit that has a combined orthopaedic plastic trauma service.

It was felt that this study did show trends, but failed to demonstrate significance in a lot of its measures. It was felt that it raised important questions that have been addressed in the most recent BOA/BAPRAS guidance for open fractures. This paper was felt to be important and would potentially change the practice of the delegates.

Factors affecting fracture healing after intramedullary nailing of the tibial diaphysis for closed and grade I open fractures.

Drosos GI, Bishay M, Karnezis IA, Alegakis AK.

J Bone Joint Surg [Br] 2006;88-B:227-31.

Critique: Sanjay Sinha, SpR 6, South East Thames Orthopaedics

This retrospective analysis of 161 patients with closed or open grade 1 diaphyseal tibial fractures was initiated to delineate prognostic factors for delayed union in these fractures after intramedullary nailing.

This study found three factors statistically significantly increase fracture healing time. Fracture comminution, a residual fracture gap of more than 3 mm and late nail dynamization.

This study was retrospective, but had large numbers of fractures. It was felt that it didn't add any new knowledge to this subject, nevertheless it was felt to be an important study because of its size and that it adds weight to the evidence already in the area.

A prospective, randomised trial comparing closed intramedullary nailing with percutaneous plating in the treatment of distal metaphyseal fractures of the tibia.

Guo JJ, Tang N, Yang HL, Tang TS.

J Bone Joint Surg [Br] 2010;92-B984-8.

Critique: James Tyler, ST4, South East Thames Orthopaedics

As the title suggests it compares interlocking intramedullary nailing with a minimally invasive plate osteosynthesis system for extra-articular distal tibial fractures. The study included both closed and grade 1 open fractures.

This study showed that the results of the 2 groups were similar in the amounts of residual pain, alignment and function at one year. The operative time and amount of radiation administered intra-operatively were significantly less in the intramedullary nailing group. The intramedullary nail group also had less wound problems. The study also found that metalwork was regularly removed, but the intramedullary nails were easier to remove.

The study advocates the use of intramedullary devices for extra articular distal tibial fractures.

This study was felt to be a well constructed prospective, randomised trial with a large number of patients. It was felt that it was useful, and may influence the delegates practice, but the very strict exclusion criteria may limit its value in the patient population that suffers distal tibial fractures in the UK.