

Elastic stable intramedullary nailing for both-bones diaphyseal forearm fractures in children. Is a radius-only fixation sufficient?

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Introduction: Diaphyseal forearm fractures are common injuries in the paediatric age group. Both-bones forearm fractures are potentially unstable, and when intramedullary nailing is the chosen treatment option, both bones are fixed in most cases. We report our experience in treating these common injuries with radius-only Intramedullary Nailing.

Methods: Between August 2004 and August 2008, 29 children were treated with radius-only intramedullary nailing for both-bones forearm fractures. 27 were closed and 2 were open injuries. There were 9 girls and 20 boys and the mean age was 9 years (range 5–17 years). We retrospectively reviewed the clinical notes and radiographs of those children.

Findings: Closed reduction was achieved in 21 patients, while eight patients required open reduction. All the patients were immobilised in an above elbow cast for average period of 3.4 in the initial post-operative period. After this period, a below elbow light weight cast was applied for mean duration of 2.8 weeks for all except 3 patients. The mean total duration of cast immobilisation was 6.8 weeks. All children underwent a further procedure for removal of nail after successful fracture union of both bones which was demonstrated clinically and radiologically. All fractures achieved clinical and radiological union at 6–8 weeks, with no residual functional abnormality at the final follow up. Two children had pin site infections which resolved completely with one week course of oral antibiotics. Two patients had limitation of supination after the initial immobilisation period (6 and 5 weeks) and that resolved completely after physiotherapy exercises. Their final follow up was at 10 and 12 months, respectively.

Conclusion: From our experience, radius-only intramedullary nailing seems to be a sufficient and effective option in treating both bones forearm fractures in the paediatric age group, with excellent function and union rates and minimal complications.

doi:10.1016/j.injury.2010.07.391

2B.10

Management and outcome of paediatric femoral fractures: 10 years experience at a London Trauma Centre

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Purpose: The last two decades have witnessed a transition in the management of paediatric femoral fractures, with a shift from a more conservative approach to an increasing trend toward surgical intervention. In view of these changes we reviewed our experience at a London trauma centre with a broad based multicultural community over the past 10 years.

Methods: We present a retrospective study of the management and outcome of 224 paediatric femoral fractures between 1998 and 2008. Data was collected on patient demographics, clinical and radiological union, indication for operative stabilisation and need for open reduction, surgeon's experience and complications, and finally, functional outcome.

duration of follow up was 3.8 years. We report 195 closed isolated femoral diaphyseal fractures resulting from low velocity injury, 14 open fractures, and 11 femoral neck fractures. 77 of the fractures were treated with early hip spica, 84 with elastic nails and 4 with external fixator. Complications include 5 malunions all within acceptable limits and 4 non-unions requiring further intervention. 73% of operative interventions were performed by trainees, 20% by paediatric orthopaedic consultants, and the remainder by other consultant staff. The average hospital stay was 6 days.

Conclusions: Early intervention has evolved to establish itself at the forefront of our management of paediatric femoral fractures, the consequences of which are far reaching in terms of hospital costing and patient satisfaction.

doi:10.1016/j.injury.2010.07.392

2B.11

Remanipulation rates in paediatric fractures: a review of 593 manipulations

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Introduction: Many common paediatric fractures are treated with manipulation under anaesthesia. Loss of reduction is a known complication of closed manipulation and may be treated by a further procedure such as repeat manipulation.

Methods: Data searches of the theatre management system of The Royal Belfast Hospital for Sick Children were performed for all procedures performed by the orthopaedic team over 24 months (October 2007–October 2009). Data included patient ages, treatment method and dates of procedures.

Results: In October 2007–October 2008, 470 procedures for fracture treatment were identified including 288 manipulations and 122 K-wiring procedures. In October 2008–2009 487 procedures for fracture treatment were identified, including 305 manipulations and 167 K-wiring procedures. Interim measures (e.g. change of thomas splint) and procedures that may have been as elective procedures (e.g. application of hip spica) were not included.

In 2007–2008 there were 240 manipulations and 19 K-wiring procedures on forearms, 98 supracondylar/humeral K-wirings and 30 tibial/ankle manipulations. In 2008–2009 there were 244 manipulations and 17 K-wiring procedures on forearms, 106 supracondylar/humeral K-wirings and 40 tibial/ankle manipulations.

The overall re-operation rate after initial MUA was 4.9% in 2007–2008 & 3.6% in 2008–2009. Most re-operation cases were after initial forearm or tibial manipulations, treated with further MUA rather than K-wiring, ORIF or external fixation.

Remanipulation rates in 2007–2008 were 6.1% for forearm manipulations and 23.1% for tibial manipulations. Remanipulation rates in 2008–2009 were 3.8% for forearm manipulations and 13.5% for tibial manipulations. Rates of primary fixation procedures were comparable in both periods.

Discussion: Of 957 procedures for fractures, 593 were manipulation and 36 of these required re-operation, usually with remanipulation. Rates of forearm remanipulation were in keeping with published literature. Rates of remanipulation of tibial fractures were higher but it is unclear how many of these were planned rather than correction of loss of reduction.

doi:10.1016/j.injury.2010.07.393