Functional Outcome in a Series of Fifty Supracondylar Fracture Humerus Managed with Lateral Versus Crossed Percutaneous Pinning

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Introduction

• Supracondylar fractures are a common elbow injury in children

• Account for 16% of all pediatric fractures

• Associated with morbidity due to malunion, neurovascular complications and compartment syndrome
Aims and Objectives

To study functional outcome using Flynn's criteria in a series of 50 Type III supracondylar fracture humerus in children managed with closed reduction and K-wire fixation using either two cross or two lateral wires in a parallel or divergent configuration.

Material and Methods

- The study was conducted in a tertiary care military hospital from July 2019 to July 2020.
- Study design was retrospective in nature.
- 50 children were included in the study having closed type III Supracondylar fractures of humerus.
- They were treated either with medial-lateral pin fixation (n = 10) or with 2/3 lateral pin fixation (n = 40).
- All patients were operated under general anaesthesia.
- Followed up for a mean of 1 year.
Preoperative X-rays

Immediate post operative X-rays
Results

• All children achieved union in a mean time of 4 weeks (range: 3-6 weeks)

• Post-operatively, one patient (2%) had ulnar nerve injury (managed with cross K wire fixation) and one (2%) patient had pin tract infection

• Comparison between two groups such as cross K-wire group (10) and lateral K-wire group (n = 40) by using the Chi Square Test showed that in case of 8 weeks with (P-values = 0.76), in 16 weeks (P = 0.86) and 24 weeks (P = 0.55) with respective excellent, good, fair and poor categories were not found statistically significant
Conclusion

• Lateral percutaneous pinning technique of displaced Supracondylar fractures of the humerus offers a viable alternative to the crossed pinning group as it offers the same stability and similar functional outcome without the incipient risk of iatrogenic ulnar nerve injury.

• However if done carefully both the techniques offer excellent results with similar complication rates (as in our study).

References: Nerve injuries associated with supracondylar fractures of the humerus in children
Kwok et al Bone Joint J 2016;98-B:851–6