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Treatment of Supracondylar fracture humerus in children a Prospective comparative study comparing closed treatment versus open for type II and III fractures

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Objectives: The aim of this study is to make a comparison between two methods of treatment, closed reduction versus open reduction and internal fixation by smooth K-wires for supracondylar fracture of humerus in children for Gartland type II and III, taking in consideration function and range of motion.

Methods: Between first of November 2012 until first of March 2016, 60 children with extension type of supracondylar humerus fracture selected for this study, Boys and girls and dominant side selected, 3-13 years mean age range, 33 from 60 patients treated by closed reduction and percutaneous fixation and 27 by open reduction and internal fixation, two types of scores were used for assessment of outcome which are the Flynn criteria and the Mayo elbow performance score, these scores measures function and ROM.

Results: The fracture is more common in males and affected both dominant and non-dominant side equally, all 33 patients treated with closed technique got good to excellent reduction and range of motion was good with all patients and parents were satisfied

with the treatment. only 2 cases shows induced ulnar nerve injury treated by immediate removal of the medially located k wire and patient regain function very rapidly within days, the cause of ulnar nerve palsy was mostly compression of the nerve rather than injury, from 27 patients treated by open technique 1 show poor result and another patient shows fair result, 2 patients got pin tract infection and 2 with ugly scar. The rest of the patients ranged between good and excellent with high difference in the excellent outcome for ORIF (12 patients 44.4 % got excellent outcome according to Flynn criteria and 9 patients 33.3% showed excellent results according to Mayo score) in comparison to patients treated by CRIF (30 patients 90.9% got excellent results according to Flynn and 26 patients 78.8% according to Mayo score)

Conclusion: In conclusion, regarding treatment for children with displaced supracondylar fracture humerus type II or III, closed reduction and percutaneous K-wire application is the most precise technique for approaching these types of injuries.

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