

Original Research Article

To study using Flynn's criteria outcome in displaced supracondylar fracture humerus post operatively

Dr. Mohd. Sameer Qureshi¹(Asst. Professor), Dr. Mohd. Shoaib Qureshi² (Asst. Professor), Dr. Ankit Verma³ (Professor) & Dr. Romin Memon⁴ (Junior Resident)

Dept. of Orthopaedics, Amaltas Institute of Medical Sciences, Dewas, M.P.^{1,2&3}
CTVS, AIIMS, Bhopal, M.P.⁴
Corresponding Author: Dr. Mohd. Shoaib Qureshi

Abstract:

Background & Method: The aim of this study is to study outcome in posteromedial and posterolateral displaced supracondylar fracture humerus post operatively. All procedures and protocols used in this study had been approved by the medical ethics committee of our institution. Children with fractures are usually first seen in the casualty unit. The orthopaedic doctor on call will examine the child, assess the vascular and neurological status, and review the radiographs of the elbow. Evaluation of the neurology and vascular status was repeated in the ward. After obtaining the informed consent for the study and surgery, the patients would be kept fasted for surgery.

Result: There were only 10 patients in whom the result was rated as fair: 08 had posteromedial displacement and 02 had posterolateral displacement. 02 patients rated as poor, had posteromedial displacement.

Conclusion: From this prospective study, we concluded that high rates of neurovascular complications in supracondylar humerus fracture in children demand High index of suspicion in this fracture especially in POSTEROMEDIAALLY displaced fractures. Posteromedially displaced supracondylar fracture humerus should be considered as a red flag sign for neurovascular complications. Also better functional outcome is associated with cross k-wire fixation in Posterolateral displaced fracture.

Keywords: outcome, posteromedial, posterolateral, supracondylar, fracture, humerus.

Study Designed: Observational Study.

1. INTRODUCTION

The life structures of the distal humerus is intricate and, for clearness, might be considered a triangle. There is an extremely meager part of bone in the triangle that is the olecranon fossa[1]. Albeit the bone here is typically roughly 1 mm in thickness, an ordinary variety in kids is to have no bone by any stretch of the imagination around here; this might be viewed as "opening" on radiographs[2]. The foundation of the triangle is articular surface comprising of the trochlea, which explains with the ulna, and the capitellum, which articulate with the radius[3]. The two side of the triangle are the average and horizontal segments of the distal humerus, which might be areas of strength for considered of overwhelmingly cortical bone supporting any powers that happen across the elbow. The average and parallel sections start

to straighten and joint at the summit of the triangle, which is very level, as they continue from the foundation of the triangle to the top. Supracondylar breaks happen at the level of the olecranon fossa, where the average and sidelong segments start to straighten. It is useful to consider the condyles the lower part of the triangle, where the average and sidelong sections join the articular surface at the foundation of the triangle[4]. In this manner, the term supracondylar humerus break depicts a crack that happen above, or "supra" to the condyles. The front tendon is a wide and slender sinewy layer covering the foremost surface of the joint[5]. It is connected to the front of the average epicondyle and to the front of the humerus quickly over the coronoid and outspread fossae underneath, to the foremost surface of the coronoid cycle of the ulna and to the annular tendon, being nonstop on one or the other side with the insurance tendons. This tendon is in brachialis, besides at its most sidelong part[6].

2. MATERIAL & METHOD

All procedures and protocols used in this study had been approved by the medical ethics committee of our institution from Aug 2018 to Sep 2019. Children with fractures are usually first seen in the casualty unit. The orthopaedic doctor on call will examine the child, assess the vascular and neurological status, and review the radiographs of the elbow. Evaluation of the neurology and vascular status was repeated in the ward. After obtaining the informed consent for the study and surgery, the patients would be kept fasted for surgery. After general anaesthesia was administered, the patient would be placed supine with the injured upper arm at the side of the table. Image intensifier was placed along the table from caudal end of the patient. The injured elbow was placed on the plate of the image intensifier. Closed manipulative reduction was performed and the reduction was confirmed with the image intensifier. If the reduction was acceptable, the surgeon would scrub up, clean, and drape the injured arm to the axilla. The fracture would again be reduced and subsequently fixed with pins according to the selected configuration (cross K-wire)

Inclusion criteria:

1. Fresh supracondylar fracture humerus.
2. Gartland Type III supracondylar fracture
3. Pediatric patients 4-14 year of age.
4. Compound fractures Gustillo Anderson Type I and II

Exclusion criteria:

1. Pathological fractures.
2. Previous fracture in either elbow, and
3. Gartland Type I and II
4. Intraarticular extension of fracture
5. Old, ununited fractures of supracondylar Humerus

3. RESULTS

Table 1: AGE & GENDERWISE PATIENT DETAILS

Age in years	POSTEROMEDIAL		POSTEROLATERAL		TOTAL
	MALE	FEMALE	MALE	FEMALE	
3-6	08	06	04	02	20
6-9	14	10	08	04	36
9-14	10	06	04	04	24
Total	32	22	16	10	80
	54		26		

Table 2: LATERALITY

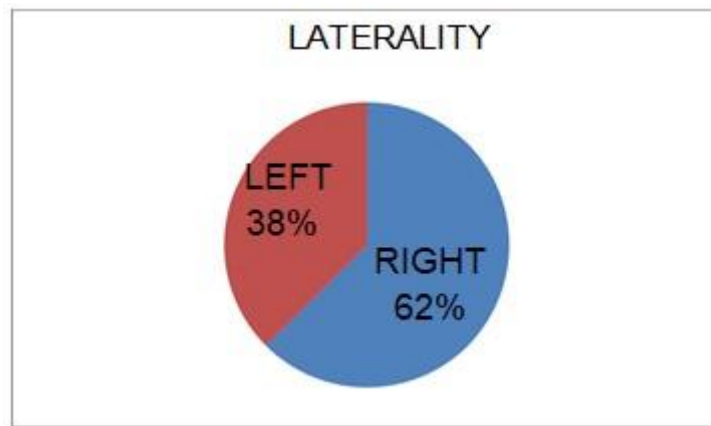


Table 3: OUTCOME

Carrying angle loss (degree)	Posteromedial	Posterolateral	Total no. of patients
0-4.9 (EXCELLENT)	26	18	222
5-9.9 (GOOD)	18	6	122
10-14.9 (FAIR)	8	2	5
>15 (POOR)	2	0	1
Total	54	26	400

There were only 10 patients in whom the result was rated as fair: 08 had posteromedial displacement and 02 had posterolateral displacement. 02 patients rated as poor, had posteromedial displacement.

4. DISCUSSION

Neurologic deficiencies were analyzed on affirmation. Four patients had outspread nerve paralysis while the other had halfway middle nerve injury. This large number of nerve wounds were in posteromedially uprooted supracondylar break humerus. These patients were followed up 6-week after week in the facility, and Four of them recuperated totally in somewhere around a half year after the surgery[7].

In this review, 12.5% (5 of 40) of patients had nerve wounds. Neurological wounds are accounted for to happen in up to 19% of patients with supracondylar humeral cracks.

Seddon grouped nerve sore as; neurapraxia, axonotmesis and neurotmesis, contingent upon the seriousness of injury. Low energy injury is probably going to cause a neurapraxia, the patient ought to be noticed and recuperation anticipated[8]. This study figured out that four patients (4 of 5) with nerve wounds recuperated completely, without employable intervention[9]. A high-energy injury is bound to cause axonal and endoneural interruption, making recuperation less unsurprising. An extremely high energy shut physical issue or an open physical issue, is probably going to partition the nerve and early investigation is suggested. High-energy crack sorts, Laurel IIIa and IIIb were related with neurological injuries[10].

5. CONCLUSION

From this prospective study, we concluded that high rates of neurovascular complications in supracondylar humerus fracture in children demand High index of suspicion in this fracture especially in POSTEROMEDIALY displaced fractures. Posteromedially displaced supracondylar fracture humerus should be considered as a red flag sign for neurovascular complications. Also better functional outcome is associated with cross k-wire fixation in Posterolateral displaced fracture.

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