

Patient-Reported Outcomes are Not Different in Pediatric Patients with Medial Epicondyle Fractures Treated Surgically or Nonsurgically at 2-10 Years after Injury

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INTRODUCTION:

Medial humeral epicondyle fractures account for 12% of all elbow fractures in children. Open reduction with internal fixation of the medial epicondylar fragment is often performed in instances of elbow instability, suspected ulnar nerve entrapment, or intra-articular displacement of the epicondylar fragment. Other relative indications for surgery include amount of displacement, ulnar nerve neuropraxia, participation in overhead sports, and patient preference. However, it is not known if patients report better function in the mid- to long-term following operative management of these fractures. The purpose of the present study is to compare patient-reported outcomes for surgical and nonsurgical management of medial humeral epicondyle fractures 2-10 years after their injury.

METHODS:

Patients with isolated medial humeral epicondyle fractures that were treated at our institution between 2-10 years ago were identified. Demographic information and details of treatment were obtained from the electronic medical record. The patients were divided into two groups – those treated surgically, and those treated nonsurgically. The patient's families were contacted by phone and were asked to complete patient-reported outcome scores including the QuickDash and PROMIS Pediatric Upper Extremity – Short Form. Independent t-test was used to assess for any differences in patient-reported outcome scores between surgical and nonsurgical patients.

RESULTS: Out of a total of 110 patients that were identified as having medial epicondyle fractures during the study timeframe, 41 were available by phone for data collection and were included in the study. In total, 29 were males and 12 were females. The average age at time of injury was 11.5 years and the average time to follow up was 4.8 years. A total of 24 patients were treated surgically and 17 were treated nonsurgically. The surgical group had higher number of patients who had a history of associated dislocation event (37% vs. 12%), and were older in age at the time of injury (12.8 years vs. 9.6 years). No differences were seen in the QuickDash (surgical 1.8, non-surgical 2.0, $p=0.86$) or PROMIS Pediatric Upper Extremity Score (surgical 56.0, non-surgical 56.1, $p=0.95$).

DISCUSSION AND CONCLUSION:

No significant differences in patient-reported outcomes using the QuickDash or PROMIS Pediatric Upper Extremity were seen in children who were treated surgically or nonsurgically for medial epicondyle fractures at 2-10 year follow up.

Despite trends toward surgical management of medial epicondyle fractures, there continues to be no evidence to support improved patient outcomes compared to nonsurgical management up to 10 years after the injury.