

Surgical Treatment of Chronic Elbow Dislocation Allowing Early Range of Motion: Operative Technique and Early Clinical Results

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Background/Purpose: Management for a chronic elbow dislocation is a difficult problem. Historically, results have been suboptimal due to elbow stiffness, recurrent instability, and dysfunction of the triceps extensor complex. Postoperative complications have led some surgeons to recommend against surgical procedures for older patients and patients who are greater than 3 months out from initial injury. We report on an operative technique we have developed that allows early range of motion with little risk of dislocation. Our hypothesis is that our surgical technique and postoperative protocol allows for good patient outcome regardless of injury duration.

Methods: We performed a retrospective review of clinical and radiographic records of patients who had undergone surgical treatment for chronic elbow dislocation. We excluded patients with associated fracture. Physical examination, the Mayo Elbow Performance Index (MEPI), and radiographs were obtained on all patients. Operative technique involved both medial and lateral approaches to the elbow while sparing the triceps. The ulnar nerve was transposed anteriorly. All soft tissues are dissected off of the distal humerus. The distal humerus was delivered out of either incision depending on ease of delivery. The olecranon fossa and coronoid fossa were cleared of soft tissue and the elbow was reduced after transposition of the ulnar nerve anteriorly. While there was no attempt to individually reconstruct the elbow ligaments, the soft-tissue envelope was repaired around the elbow as sleeves. Physical therapy for range of motion (0-90°) was initiated two days after surgery. Prophylactic indomethacin was given immediately to prevent heterotopic ossification.

Results: 25 patients (20 males) with a mean age of 25 years (range, 7-56 years) met inclusion criteria for this study. The mean patient follow-up was 5 months (range, 1-15 months). Duration of dislocation averaged 6 months (range, 1-34 months, standard deviation [SD] 7 months). Mean preoperative range of motion (ROM) was 7° (range, 0-30°). Mean ROM at final follow-up was 94° (range, 55-125°, SD 24°). The mean postoperative MEPI was 88 (range, 80-100). All patients had improvement in elbow motion. There were no infections or recurrent dislocations. There was one patient who developed transient ulnar nerve palsy postoperatively.

Conclusion: This is one of the largest case series of surgically treated patients with chronic elbow dislocation. All patients had improved elbow function and there were few complications. Open reduction of chronic elbow dislocation can be accomplished while permitting early motion and with little risk of dislocation. Long-term follow-up will be required to determine if these early clinical results continue.