

Anterior Dislocation of Elbow with Fracture of Medial Epicondyle: A Rare Injury Case Report

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Learning Point of the Article:

Anterior elbow dislocation is one of the rare elbow injury, as discussed in the literature and it is usually associated with periarticular fractures. It needs prompt intervention and fracture fixation for early recovery and better functional outcome. The mechanism of injury and method of reduction are learning points in this rare case report.

Abstract

Introduction: Anterior elbow dislocation is a rare occurrence, mostly produced by direct trauma to elbow in flexion attitude following fall from height. Posterior dislocation is the commoner entity at the elbow joint, thus rarity of this case incites reporting.

Case Report: A 53-year-old male presented to our outpatient department with complaints of pain, swelling, and inability to move his right upper limb, following fall from height. On examination, no associated neurovascular deficit was found. Radiological investigations confirmed anterior dislocation of elbow joint with medial epicondyle fracture of the right humerus. Dislocation was reduced under general anesthesia with ulnohumeral K-wire and fracture of the medial epicondyle was stabilized by open reduction and internal fixation with K-wire.

Conclusion: Anterior dislocation of elbow is a rare occurrence with frequent association with periarticular fractures and neurovascular injury. Therefore, a careful assessment followed by the early proper reduction and management leads to better functional outcome.

Keywords: Elbow joint, anterior dislocation, medial epicondyle.

Introduction

Traumatic anterior elbow dislocation is an uncommon rare injury [1, 2]. It is usually associated with periarticular fractures [3, 4] or neurovascular deficit [5]. The aim of the treatment is to provide a good clinical and functional outcome with concentric reduction, good fixation of periarticular fractures with adequate soft-tissue handling with best available methods [6, 7]. Till now, very few cases of anterior elbow dislocation are reported in the literatures and are usually associated with neurovascular or ligamentous injury.

Case Report

A 53-year-old male presented to emergency department with complaints of pain, swelling, and deformity around the right elbow joint with inability to move his right elbow (Fig. 1). He had a history of fall on palm with hyperflexed elbow while performing his household chores in the same morning. On presentation, he was holding his left elbow semiflexed and supported by opposite hand. On examination, his elbow was at 30° flexed attitude, forearm in mid-prone position swelling and tenderness was observed around the right elbow and wrist region. The three point relationship of the right elbow was lost. Olecranon was not palpable posteriorly; there was increased

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Author's Photo Gallery



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Figure 1: Pictures showing deformities of the right elbow at the time of presentation.

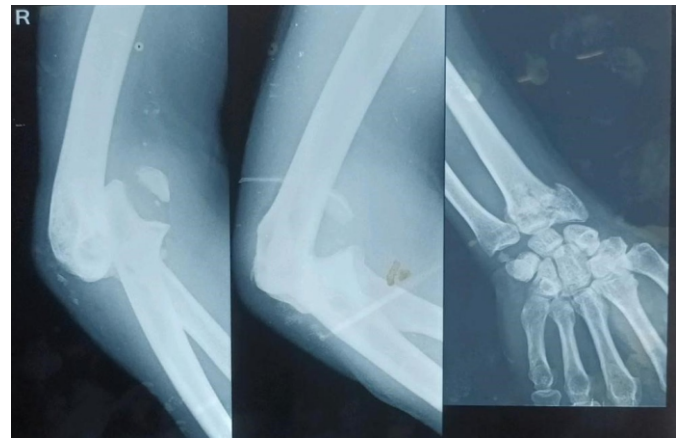


Figure 2: X-ray showing anterior elbow dislocation with fracture medial epicondyle and fracture distal radius.

tenderness on palpation over medial condylar region. There was also tenderness over the right wrist and restriction of movement around the wrist joint. The range of motion around the right elbow was painful and restricted without any distal neurovascular deficit. Radiological examination (X-Ray) revealed anterior dislocation of the right elbow with medial epicondyle fracture of humerus (Fig. 2). X-Ray of the right wrist revealed comminuted fracture distal radius. A posterior long arm slab was given, and the patient was advised for limb elevation. Then, we planned for reduction of the dislocation and fracture fixation under general anesthesia. Close reduction of the elbow joint was achieved by applying longitudinal traction in line of supine forearm with the elbow in 60–70° flexion. With the assistant giving counter traction in line of the humerus, the elbow was taken into mild valgus, the forearm was pushed backward, and the elbow reduced with a clunk. To maintain the reduction, a 2.5 mm K-wire was given to transfix the ulnohumeral joint. The medial epicondyle was fixed with open reduction and K-wire, due to its smaller size (Fig. 3). Distal radius fracture was fixed with forearm distractor due to its high comminution. All the fixations were confirmed with the help of

image intensifier. A forearm pouch was given to the patient and advised for limb elevation in the post-operative ward. The patient was discharged on post-operative day 3 after wound inspection and advised for non-weight lifting. The patient was followed up after 1 month. The ulnohumeral K-wire was removed. Elbow arc of motion encouraged with active physiotherapy, following after a period of 3-month elbow range of motion, was found 30–100°. He was advised further physiotherapy.

Discussion

Anterior elbow dislocation is among the rarest of the injuries in contrast to posterolateral elbow dislocation, which is a common occurrence and is usually associated with periarticular fractures [1]. Majority of the reported cases had associated fractures of olecranon, medial and lateral epicondyle, and radial head [2-5]. The mechanism of injury described in various literatures are that, it may occur due to a direct trauma to posterior aspect of ulna with elbow in mid flexed position [3] or may be due to sudden pull on forearm in an attempt to prevent a fall [1]. We believe that the mechanism may be due to fall on palm with

hyperflexed elbow that results in axial loading of forearm and wrist, explaining anterior dislocation and distal radius fracture at the same time torsional forces result in medial epicondylar fracture [4-10]. The elbow joint owes its stability to the ulnotrochlear articulation and collateral ligament complexes which are its primary static stabilizers. The radial head, joint capsule, common flexor,

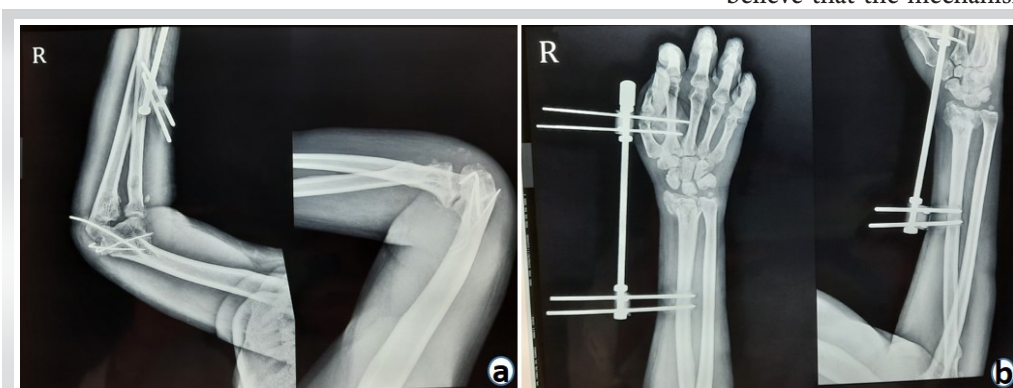


Figure 3: Post-operative X-ray of elbow joint reduction and medial epicondyle fracture fixation comminuted distal radius fracture fixed with forearm distractor.



Figure 4: Picture showing fixation of medial epicondyle and distal radius with multiple K wires and Forearm distractor respectively.

and extensor origin which are the secondary static stabilizers and anconeus, triceps, brachialis muscles act as the dynamic stabilizers [4, 11]. The posterior column is formed by the olecranon, the triceps, and the posterior aspect of capsule. This explains the rare occurrence of anterior elbow dislocation. To have anterior dislocation, the disruption of the posterior column is necessary [8, 12]. The clinical picture in acute anterior elbow dislocation found to be, elbow in a flexed attitude, pain, swelling, deformity, range of motion restricted by pain, and usually associated with soft-tissue injuries [7].

This case report is that of closed anterior dislocation with medial epicondyle fracture humerus and distal radius fracture, without any neurovascular deficit. Anterior dislocation mostly occurs with fracture olecranon dislocation with medial epicondyle that is also a known entity, which is more common than lateral epicondyle [8, 13]. Mostly, the underlying mechanism is direct trauma to posterior aspect of elbow and to wrist. After initial evaluation, the patient was treated by closed

reduction of elbow joint with medial epicondyle fracture fixation with the help of K-wire due to small subarticular fragment [5, 8]. Medial epicondylar fractures are traditionally treated conservatively which leads to fibrous union rather than bony union [14]. Here, we have fixed the fragment to prevent severe chronic medial instability although it rarely occurs with fibrous union [8]. We followed the reduction maneuver of gentle traction to the forearm, the posterior and downward pressure is applied to the forearm with gentle anterior pressure on the distal humerus, and the method opposite to the reduction maneuver for posterior elbow dislocation [2].

Conclusion

Anterior dislocation of elbow although very rare may be associated with periarticular fractures, which results in compromised stability. Accurate diagnosis, Concentric reduction and periarticular fracture fixation around the joint is the key for normal functional outcome of the elbow.

Clinical Message

Although anterior elbow dislocation is rare in occurrence, high index of suspicion has to be there in mind to rule out anterior elbow dislocation patients presenting with mid flexed elbow and history of direct injury to the elbow. Even though the injury is predominantly closed, there is a high incidence of associated soft-tissue injury, periarticular fractures, and neurovascular injury. Early detailed evaluation and management are essential for an optimal functional outcome.

Declaration of patient consent: The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given the consent for his/ her images and other clinical information to be reported in the journal. The patient understands that his/ her names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Conflict of interest: Nil **Source of support:** None

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