Posterior Elbow Dislocation with Ipsilateral Distal End Radius Fracture – A Rare Case Report

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Abstract
Posterior Elbow dislocation with ipsilateral distal radius fracture may be a rare pattern of injury, although it’s common for elbow dislocation and forearm fractures to occur separately. We report a rare case of a 45-year-old female who had a posterior elbow dislocation and ipsilateral distal radius fracture. Elbow dislocation was first reduced by Parvin’s method and distal radius fracture was then reduced intra-operatively. At 4 months follow-up, the patient had no pain in her elbow with full range of movement and no pain at wrist on heavy lifting and had resumed her work.

Keywords: Dislocation, distal radius, elbow joint, fracture

Introduction
Distal end radius fracture associated with ipsilateral elbow dislocation is a rare injury.

The elbow joint is relatively stable however elbow dislocations are fairly common occurrence. This injury frequently occurs during sporting activities when an individual falls on an extended elbow. In most instances the semilunar notch of ulna is dislocated posteriorly from the distal humerus. In simple elbow dislocation there is no associated fracture. Complex elbow dislocation usually involves proximal part of ulna and/or radius fracture. Elbow dislocation with Ipsilateral Distal End Radius Fracture is a rare entity and literature has only reported very few cases so far.

Here we present a case report of distal end radius fracture associated with ipsilateralpostero-medial dislocation of the elbow.

Case Report
A 45-year-old female came to emergency department with a history of fall from bike at our hospital. She had complaints of pain over left elbow joint and wrist joint. On examination, her left elbow was grossly deformed, and there was swelling over her left wrist. Tenderness was present over both her left elbow and wrist joints. The range of motion of her left wrist and left elbow joint were painfully restricted. No distal neurovascular deficit was noted. Her plain x rays revealed a posteromedial elbow dislocation and distal end radius fracture.

Elbow was reduced using Parvin method. Traction was applied to proximal forearm, and force was applied posteriorly while the elbow was hyper-flexed. Reduction was checked and it was acceptable.

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The distal end radius fracture was exposed through modified henry approach, reduced and a locking allis plate was applied. An above elbow slab was applied in flexed elbow position. The patient was reviewed weekly and elbow mobilization was encouraged after 4 weeks.

Fig 2 X-ray Showing reduced Elbow
Fig. 3 Xray showing Distal end radius fracture

Fig. 4 Post-op Xray Showing Radius Fixed with Implant in situ

Discussion
The elbow joint is a hinge type of joint. Bony architecture gives it inherent stability still it’s second commonest joint to be dislocated. Radial head, coronoid process and olecranon fracture are commonly related to elbow dislocation. Posterior elbow dislocation with coronoid process fracture with radial head fracture is named the “terrible triad of
“elbow”. Elbow dislocation with ipsilateral radial and ulnar diaphyseal fracture has also been reported.3,4

The presumed mechanism of injury in posterior dislocation of elbow is forceful axial loading and extended elbow (outstretched hand) posteriorly directed force at elbow causing dislocation at ulnohumeral and radio-capitellar articulation5. It can occur thanks to the only impact theory of fall from height leading to compressive forces that when directed on outstretched hand fracture the distal end radius first. Since the energy is gigantic, it extends to hyperextended and valgus elbow, leading to posterior dislocation of elbow. Since the force fractures the radial column, the remaining force is merely transmitted along the ulna thus pushing the ulnar groove out of trochlea and hence causing posterior dislocation of elbow.6

The second pattern would be a double impact theory as seen during a road traffic accident, the subject falls on outstretched hand leading to distal end radius fracture followed by immediate impact to elbow leading to anterior elbow dislocation with coronoid process fracture.7

Conclusion

We suggest that in every case of elbow dislocation, wrist joint should be assessed clinically as well radiologically. [If clinical signs are suggestive of injury] to check any associated injury. A high index of suspicion should be kept for distal end radius fracture.8 And from our experience elbow dislocation should be reduced first followed by reduction (and fixation if necessary) of distal end radius fracture.

References