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Complex Elbow Dislocation with Ipsilateral Proximal Third Radius Fracture: Comparison of Outcome of Two Cases Managed Differently

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Abstract

Complex elbow dislocation along with ipsilateral proximal third radius fracture is a very rare combination. We present two such cases that were managed differently. The elbow dislocation can be managed by closed means but clearly, there is superiority of open reduction when compared to closed reduction while managing fracture radius.

Keywords: Elbow dislocation; Ipsilateral; Forearm; Radius

Introduction

Elbow joint is one of the most commonly joint to get dislocated. If there is only dislocation of ulno-humeral joint without fracture, it is called simple elbow dislocation. If the elbow dislocation is associated with fracture of humerus, ulna or radius either alone or in combination, it is termed as complex elbow dislocation. We present two cases of complex elbow dislocation associated with fracture proximal third radius ipsilaterally. Both the cases were managed differently. We will compare the results of both.

Case Presentation 1

A 40 year old female sustained injury to her right dominant elbow in the form of fall from bike. She presented to Orthopaedic emergency in our institution. There was no history of loss of consciousness, ENT bleed, seizure or vomiting. The patient was conscious and oriented at the time of presentation. Local examination revealed tenderness, swelling and deformity at elbow region. There was no distal neuro vascular deficit. Radiological examination revealed elbow dislocation with fracture proximal third radius (Figure 1).



Figure 1: X-rays of elbow joint (AP and Lat Views) Showing fracture dislocation.

Closed reduction was done (Figure 2) and splintage applied and patient was counselled for surgery. However patient did not opt for surgery and did not come for follow up (Figure 2).



Figure 2: X-ray after doing immediate closed reduction.

After one year, she again visited GTB hospital for some unrelated complaints. Supination of forearm is from 0-50° and Pronation is comparable to contralateral limb while flexion at elbow is from 10°-120°.

Patient is able to do most of her daily activities. The fracture has united clinico-radiologically (Figures 3-5).



Figure 3: X-rays at final follow up showing malunited proximal radius along with radial head subluxation.



Figure 4: Pronation is comparable to contralateral limb while supination is restricted.



Figure 5: Showing Extension and flexion of elbow joint.

Case Presentation 2

A 25 year old male sustained injury to his left elbow joint. Patient fell from table on his left hand with elbow in full extension. There was no history of loss of consciousness, ENT bleed, seizure or vomiting. The patient was conscious and

oriented at the time of presentation. Local examination revealed tenderness, swelling and deformity at elbow region. There was no distal neuro vascular deficit. Radiological examination (Figure 6) revealed elbow dislocation with fracture proximal third radius (Figure 6).



Figure 6: X-rays of elbow joint (AP and Lat Views) showing fracture dislocation.

Closed reduction was done and splintage applied and patient was counselled for surgery. Patient underwent ORIF using Thompson approach with 6 hole DCP. Post op period was uneventful. The patient was started on Range of motion exercises 2 weeks after surgery. At the last follow up, the fracture has united clinico-radiologically and all the movements are comparable to the opposite limb (Figures 7-9).



Figure 7: Both supination and pronation are comparable to opposite limb.



Figure 8: Flexion and extension are comparable to opposite limb.



Figure 9: X-ray at final follow up showing fracture union.

Discussion

The elbow joint comprises of articulation of humerus with radius and ulna. The ulno-humeral is hinge joint while humero-radial is a ball and socket type of joint. The various articulations and collateral ligaments provides stability to the joint [1]. Fractures of forearm bones associated with elbow dislocation commonly occur around the elbow, i.e., in the proximal part and involve the radial head, olecranon, and coronoid process [2]. There are some case reports of elbow dislocation with ipsilateral both bone diaphyseal fracture [3,4] but the combination of elbow dislocation with ipsilateral fracture of proximal third radius is very rare. The literature search shows only one case described with this pattern of injury [5].

The mechanism of injury to cause elbow dislocation is typical fall onto an outstretched hand with elbow in full extension upon impact. However, in our cases there was additional fracture of proximal third radius as well as superior radio-ulnar joint

dislocation. The sequence of events leading to such injury are described. Both the patient had history of fall on outstretched hand with elbow in full extension. The axial force must have travelled from hand to radius leading to fracture of proximal shaft along with superior radio-ulnar joint disruption. Then the force must have travelled to ulna leading to elbow dislocation.

Our case report compares the outcome of two cases with same pattern of injury managed differently and clearly demonstrates the superiority of ORIF over conservative management in this type of injury.

Conclusion

Complex elbow dislocation with fracture proximal third radius is a very rare injury pattern. Thorough clinico-radiological examination should be done. This type of injury can be managed by closed reduction of elbow and open reduction of radius to obtain good functional outcome.

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