Elbow dislocation with ipsilateral distal radius fracture

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Abstract

Elbow dislocation associated with ipsilateral distal radius fracture is a rare pattern of injury, although it is common for elbow dislocation and forearm fractures to occur separately. We report a rare case of a 20-year-old male who had a posterior elbow dislocation and ipsilateral distal radius fracture. Elbow dislocation was first reduced in extension and distal radius fracture was

then reduced in flexion. Both the injuries were conservatively managed. At 6 months follow-up, the patient had no pain in his elbow and minimal pain in his wrist on heavy lifting and had resumed his work as a laborer.

Key words: *Dislocation, distal radius, elbow joint, fracture*

INTRODUCTION

Fracture dislocations around the elbow joint are common and usually involve proximal radius or ulna. Posteromedial elbow dislocation with associated distal radius fracture is a rare entity.[1] Only few cases of elbow dislocation with ipsilateral distal radius fracture have been reported in the literature.[2-4] We present a rare combination of elbow dislocation with ipsilateral distal radius fracture and discuss the possible mechanisms of injury and management issues.

CASE REPORT

A 20-year-old male presented to our emergency department after falling from his bike and landing on his outstretched right hand. He complained of pain over right elbow joint and wrist joint. On physical examination, right elbow was grossly deformed and swelling was present over the wrist joint. Tenderness was present over both wrist and elbow joint. Range of motion of elbow and wrist joint were both painful and were not assessed. There was no distal neurovascular deficit. Plain radiographs showed posterior elbow dislocation and distal radius fracture with intraarticular extension [Figure 1a and b]. Closed reduction of the dislocated elbow joint was immediately performed with elbow in extension under sedation. Distal radius fracture was then reduced with elbow in flexion. Because the patient did not want surgery for distal radius, it was decided to manage the fracture conservatively. An above-elbow cast was applied for 4 weeks, which was then converted to a below-elbow cast [Figure 2a and b]. The cast was then removed after 2 more weeks. Active elbow and wrist movements were started after 6 weeks of trauma. At 6 months follow-up, patient has regained full flexion and extension of elbow and wrist joint and full pronation and supination of forearm. He has resumed his occupation as a laborer.

DISCUSSION

Elbow joint is one of the most inherently stable articulations of the skeleton. Fractures associated with elbow dislocation commonly occur around the elbow, and involve the radial head, olecranon and coronoid process.[1] The "terrible triad" of the elbow, consisting of a posterior dislocation together with a fracture of the coronoid process and the radial head, has been described before.[5] Ulnar diaphyseal forearm fracture associated with radial head dislocation has also been described before as the Monteggia fracture-dislocation.[6] Elbow dislocations with concurrent fractures of both the ipsilateral radius and the ulnar diaphysis have also been reported.[7]

Elbow dislocation with ipsilateral distal radius fracture is a rare injury pattern. An extensive search of the literature showed that only few such cases with this combination are reported. The cases already reported are either compound fracture/dislocation or have occurred in children. This is the first report describing a combination of closed elbow dislocation and closed distal radius fracture in an adult. The isolated elbow dislocation without radiocapitellar involvement makes this injury pattern very unique.

Most probable mechanism to produce this type of injury would be a fall on the outstretched hand. First, the distal radius fracture occurred due to direct contact of wrist with the ground. In this case, the rebound forces from the ground were dorsal to the radius as the fracture was dorsally angulated. This dorsal force would hyperextend the elbow causing posteromedial dislocation. The reverse scenario of events (i.e., initial distal radius fracture followed by posterior elbow dislocation) does not seem plausible. Elbow dislocation could be easily reduced once the patient was sedated. Although the distal radius fracture in our case was intraarticular and should have been operated, but our patient refused surgery due to

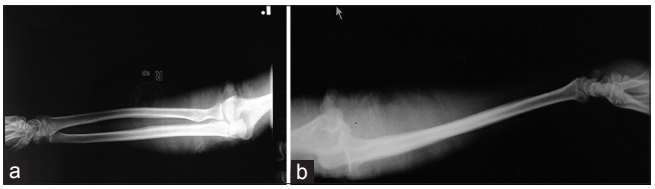

Figure 1: (a and b) Radiographs showing posterior dislocation of the elbow with fracture of the distal radius

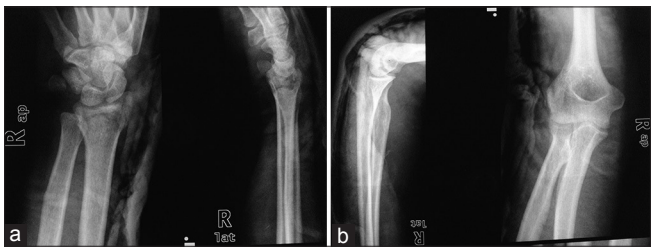

Figure 2: (a and b) Radiographs after closed reduction of elbow joint and distal radius fracture

financial constraints and the fracture had to be managed conservatively. Once the elbow had been reduced, the distal radius fracture could be easily reduced with traction given in 90° elbow flexion.

The purpose of this report is to increase awareness of the presence of a double injury in the forearm.[8] Diagnostic evaluation of these injuries must be thorough due to the high incidence of missed injuries.[2] The radiographs must always include the elbow and the wrist joints.

CONCLUSION

We recommend that in every case of elbow dislocation, wrist joints be assessed clinically as well as radiologically for any associated injury. A high index of suspicion of distal radius fracture should be kept in every patient of elbow dislocation. In our experience, elbow dislocation should be first reduced in extension and then only should one proceed with reduction of distal radius fracture in flexion.

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