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A Rare Case of Simultaneous Bilateral Elbow Dislocation in a 25 year old Lady following a Simple Fall - An Unusual Mode of Injury

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Abstract

Introduction: Bilateral elbow dislocation is a rare injury, with only a small number of case reports in the literature. Te majority of these reports describe associated ligamentous injuries only. Simultaneous bilateral radial head fracture in association with bilateral elbow dislocation has only been described on two occasions previously.

Case Report: We report an extremely rare case of simultaneous bilateral elbow dislocation in a 25 years woman following self-fall. Bilateral elbow dislocation with bilateral radial head fractures was confrmed radiographically. Closed reduction under sedation was performed in the emergency room. Thepatient was immobilized for 5 weeks. e patient was mobilized and had good function of bilateral elbow at 8-month follow-up.

Conclusion: Te purpose of this report was to describe a very rare injury paaern, to present the treatment approach chosen for this case, and to emphasize the importance of early mobilization following bilateral elbow dislocation.

Keywords: Bilateral elbow dislocation, female, rare case report, simultaneous.

What to Learn from this Article? Simultaneous bilateral elbow dislocations are extremely rare injuries in non athletic patients in the absence of generalised ligament laxity. Tere should be a high index of suspicion for associated injuries by careful examination and evaluation with radiographs. Prompt reduction and early rehabilitation ensures an excellent functional outcome.

Introduction

In adults, elbow dislocations are the second most common dislocation afer that of the shoulder, with an estimated incidence of 5.21 dislocations per 100 000 person-years [1]. Simultaneous elbow dislocations are rare,some injuries may be associated with radius head and neck fractures, however, with only a handful of cases described in the literature so far.

Our proposition is to report this rare case of bilateral elbow dislocation with bilateral radial head fracture and to present the treatment approach chosen for this case.

Case Report

A 25-year-old female, homemaker weighing 95 kg was brought to the emergency department by ambulance with simultaneous bilateral elbow dislocations afer landing on both hands with extended elbows. Te parents reported no of history consistent with joint hyperlaxity of the patient. Thre was no positive family history for joint hyperlaxity.

Clinical examination showed deformity of both elbows with the loss of posterior triangular relationships of the olecranon and epicondyles suggesting bilateral posterolateral elbow dislocation

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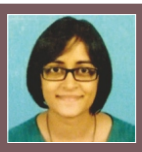
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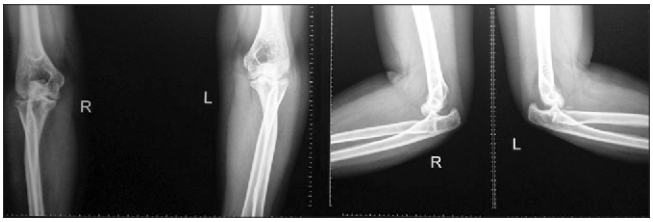

Figure 1: Radiograph post-trauma.

Figure 3: Supination and pronation of both elbows afer 12 weeks.

Figure 5: Extension of both elbows afer 12 weeks.

associated with swelling and hematoma formation. Thre was no neurovascular defcit. Radio graphs showed bilateral posterolateral elbow dislocations with a bilateral radial head fracture (Fig. 1). Both elbows were reduced under sedation within an hour of the injury. Te radial head fracture was undisplaced. She was splinted at 90° of fexion for 3 weeks with an above elbow slab. A check radiograph of both the elbows was taken to confrm the reduction of the elbow joints (Fig. 2). Afer 7 days, the swelling subsided and slab was converted to an above elbow cast. At the end of 5 weeks, both the casts were removed and she underwent physiotherapy. By the end of the 8th week, the patient had regained functional range of movement and at 12 weeks she was doing her regular house work (Fig. 3, 4, 5).

Discussion

Elbow dislocation is a common event, being the most frequent joint subject to dislocation afer the shoulder, the majority being posterior [2, 3, 4]. It is common for children to suffer an associated fracture and many are the result of sporting injuries [1]. Bilateral elbow dislocations occurring simultaneously, however, are extremely rare. Reported cases of bilateral elbow dislocation

Figure 2: Radiograph afer 12 weeks.

Figure 4: Flexion of both elbows afer 12 weeks.

have been limited to young female gymnasts with proven joint hyperlaxity [3, 4, 5] and an isolated hang-gliding accident in an adult male [3], and remain rare. Te rarity of bilateral elbow dislocation stems from the fact that it may only occur under special circumstances with both the elbows extended and most of the body weight acting through the elbow joints with elbows in extension and hands outstretched [3, 4, 5].

Elbow dislocations from 11% to 28% of all injuries to the elbow [3, 4]. Te most common mechanism of injury is fall on outstretched hand. Thebody weight generates a downward force with vertical and horizontal component which unlocks the ulna out of trochlea [3]. As the elbow joint continues to hyperextend, the anterior capsule and collateral ligaments fail leading to posterior dislocation of the elbow joint [2, 6]. Bilateral posterior elbow dislocations occur in special instances where the patient tries to stop his fall with both hands outstretched at the time of impact [3, 4, 5].

Cadaveric studies have shown that posterior dislocation is most likely with the elbow between 15 and 30° of fexion [7] and that a rotatory torque applied to the ulna, e.g., in a fall with the forearm pronated, plays a role in the mechanism of dislocation [6]. With the elbow in full extension, the majority of stress is directed on the tip of the coronoid process [7].

Josefsson *et al*. [8], in 1987, reported outcomes achieved through the analysis of surgical treatment of the elbow dislocation against the non-surgical one, concluding that surgical treatment should not be provided in a simple dislocation, which can be reduced by closed means.

It is agreed that prolonged immobilization results in poor outcome [2, 3, 4], and periods of accep table immobilization vary from immediate mobilization to 4 weeks immobilization although this depends on the post-reduction stability of the elbow [2, 4].

In the present study, the patient totally recovered the fexion-extension motion of the lef elbow, with good valgus and varus

stability. In the 18-month follow-up period, the X-ray control was shown to be normal, and the patient returned to all her daily activities.

Complications such as adhesions, fbrosis, myositis, and contractures have been observed by Syed and O'Flanagan [3, 9]. Protzman [3, 10] had studied the degree of remnant fexion contractures of the elbow afer immobilization to vary from 3° to 21° depending on the duration of immobilization. In our patient, we observed a remnant fexion contracture of around 5°. However, our patient did not present with any instability of the elbow or recurrence of the posterior dislocation. She had good functional range both the elbows.

Conclusion

Te purpose of this report was to describe a very rare injury patern, to present the treatment approach chosen for this case, and to emphasize the importance of early mobilization following bilateral elbow dislocation.

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