Isolated Volar Dislocation of Distal Radio-ulnar Joint: A Case Report

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What to Learn from this Article?
This article aims to prevent missed radio-ulnar joint injuries and will focus on timely management of these injuries.

Abstract

Introduction: Any dislocation of distal radio-ulnar joint is a rare injury especially when it is not associated with any fractures. A detailed history, careful physical examination, proper radiographic imaging along with a high index of suspicion is required to diagnose these injuries.

Case Report: We report a case of 40-year-old women, who sustained an acute volar dislocation of the distal radio-ulnar joint. Dislocation was reduced under general anesthesia followed by above elbow plaster of Paris (POP) slab.

Conclusion: Most of the case report reported in literature are managed same as our treatment by closed reduction and above elbow POP slab. Only a few case reports have described the management of these volar dislocations with open reduction and repair in the past 60 years.

Keywords: Distal radio-ulnar joint, acute isolated dislocation, volar, close reduction.

Introduction

Dislocation of distal radio-ulnar joint (DRUJ) is usually associated with distal radius fractures [1]. However, isolated dislocations of the DRUJ are quite uncommon. There is a little number of case reports or case series in relevant literature [2, 3, 4, 5, 6, 7]. Isolated dislocations of DRUJ can be easily missed due to lack of evident clinical deformity and the difficulties in assessment of faulty positioned wrist radiographs at emergency department [8]. In delayed cases, complex surgical procedures are needed for reconstruction, and possible loss of wrist function may occur [4]. Therefore, it is important to recognize these rare injuries at initial admission.

Herein, a case of DRUJ dislocation associated is presented, and radiologic diagnosis, clinical findings and treatment methods are discussed.

Case Report

A woman aged 40 years with h/o fall on ground heavily on her right hand with twisting her forearm, came to the hospital with wrist pain, which was increasing in any attempt to rotate the forearm. Movement at radio-carpal joint and elbow joint (flexion-extension) was normal. On examination forearm is locked in supination and any attempt to pronate the forearm is painful, depression over wrist at posterior ulnar side is there. Neurovascular examination...
was normal. Anteroposterior and lateral radiograph of the wrist showed anterior-radialward displacement of the distal part of the ulna, confirming the isolated volar dislocation of distal radio-ulnar joint (Fig. 1).

Dislocation was reduced under general anesthesia by traction and direct pressure over volar aspect of ulnar styloid process while forearm is pronated. Joint was reduced and stabilized in this position. Above elbow plaster of Paris slab was applied with forearm pronated for 6 weeks. Reduction was confirmed with both anteroposterior and lateral radiograph (Fig. 2).

Plaster was removed after 6 weeks and patient was referred to physiotherapist. At the final follow-up 3 months after the initial injury, movements were checked, there was no instability, and full movement was there at inferior radio-ulnar joint.

Discussion

Almost half of distal radio-ulnar joint dislocations are failure to recognize at initial admission to emergency department [9]. Reasons are a lack of clinically significant physical findings, difficulty in obtaining true.

The distal radio-ulnar joint dislocations are divided into two subtypes according to the direction of ulnar displacement, volar and dorsal DRUJ dislocations [2]. In volar (anterior), the terminal arch of supination lost lateral radiographs of wrist and decision-making using unstandardized radiographs lead to misdiagnosis. High index of suspicion is necessary to recognize these rare injuries whereas limitation of supination is seen with dorsal dislocation [2].

On anteroposterior wrist radiograph, an ulnar styloid overlapping with radius and bigger ulnar head suggest volar dislocation. On the contrary radioulnar separation and a smaller head suggest dorsal dislocation.

On standard lateral wrist radiograph, ulna superimposed with radius and aligns with the 3rd metacarpal base together with capitate and lunate bones [6]. Any deviation with this alignment suggests dislocation of DRUJ. Obtaining a true lateral radiograph is difficult due to painful extremity. Computed tomography is an alternative modality to confirm the diagnosis [10]. Initially, closed reduction attempted in DRUJ dislocations, followed by immobilization of the wrist for 4–6 weeks. Recurrent dislocations are common after closed reduction alone; stabilization with percutaneous pinning should be done in case of residual instability during the post-reduction examination. In patients whom closed reduction failed, open reduction and triangular fibrocartilage complex repair are required [8]. If DRUJ dislocation is timely recognize and treated properly, prognosis is excellent.

As a conclusion, isolated DRUJ dislocations are rare injuries. Early recognition of these injuries necessitates detailed physical examination, properly taken radiographs and high index of suspicion.

References


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