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Case Report

Irreducible posterolateral elbow dislocation: A case report

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ABSTRACT

Elbow dislocations are very common, particularly in the posterolateral variety. Closed reduction is usually easy. However, an irreducible elbow dislocation without associated fracture is rare. We report the case of a 21-year-old patient who presented with an isolated posterolateral irreducible elbow dislocation. Open reduction revealed the buttonhole radial head in the capsule and the complex ligaments. A significant protrusion of the radial head associated with a closed reduction failure is highly suspicious of an irreducible dislocation.

Introduction

Elbow dislocations are very common, particularly in the posterolateral variety [1]. Closed reduction is usually easy [1]. In very rare cases, an associated fracture with fragment interposition may render the dislocation irreducible [2]. However, an isolated irreducible elbow dislocation is rare [3–6]. We report the case of a 21-year-old patient who presented with an irreducible posterolateral dislocation of the elbow. An open reduction revealed a herniation of the radial head through the capsule and the ligament complex.

Observation

This is a 21-year-old patient with no previous medical history who presented with a closed traumatism to the left elbow during a playful accident. He had a fall with a reception on the palm of the left hand and the elbow in extension. The physical examination showed a shortening of the antebrachial segment, a deformity of the elbow with a posterior projection of the olecranon and anterior of the distal end of the humerus (Fig. 1). We also noticed a depression between the humeral pallet anteriorly and the olecranon posteriorly, a protrusion of the radial head palpated outside the olecranon (Fig. 1). The neurovascular examination was normal. Anteroposterior and lateral standard radiographs confirmed a posterolateral dislocation of the elbow with no associated fracture (Fig. 2). Several attempts at closed reduction under general anesthesia and by different senior orthopedic surgeons were unsuccessful. Faced with this situation, a simple irreducible dislocation was retained and an open reduction via the Kocher approach was also performed. As soon as the skin and subcutaneous tissues were incised, the radial head came into direct view. The exploration revealed the head of the radius caught in the ligament complex and the capsule in a “buttonhole appearance” (Fig. 3). It is a herniation of the radial head through the ligament complex and the capsule. A small enlargement resulted in a satisfactory reduction of the dislocation confirmed on x-ray (Fig. 4). The postoperative course was simple with immobilization by a splint for 21 days. After a three-month follow-up, the patient has normal elbow mobility (Mayo Elbow Performance Score: MEPS at 100) with excellent function.

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Fig. 1. Deformity of the left elbow and radial head protrusion (yellow arrow).

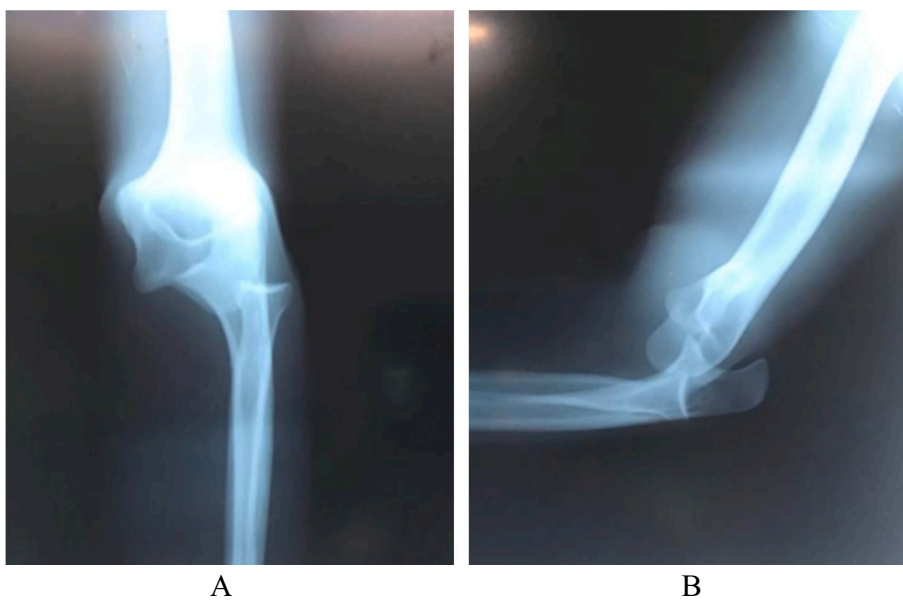


Fig. 2. Anteroposterior (A) and lateral (B) radiographs showing a posterolateral dislocation of the elbow without fracture.

Discussion

Elbow dislocations are not uncommon [1]. Most dislocations are posterolateral and reduction is usually done by simple traction with a leverage effect of the olecranon on the distal humerus [1]. In very rare cases, an associated fracture with fragment interposition may render the dislocation irreducible [2]. However, there are a few cases of isolated irreducible dislocation of the elbow described in the literature [3–8]. Fenelon et al. report that only four cases have been described in the literature in the last 50 years [7]. Open reduction shows in most cases blockage by the joint capsule or the complex ligaments or transbrachialis Buttonholing of the radial head [4,6–8]. As in our patient's case, the radial head caught in a “sandwich” or buttonhole appearance in the ligament complex and the joint capsule. A small enlargement between these allowed us to have an easy reduction.

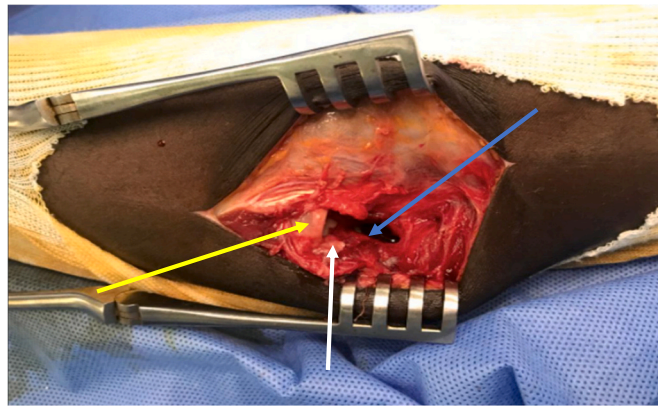


Fig. 3. Intraoperative image showing the radial head herniation "buttonhole aspect" (yellow arrow) through the annular ligament (white arrow) and joint capsule (blue arrow). The collateral ligaments not being visible on this image is located lower.

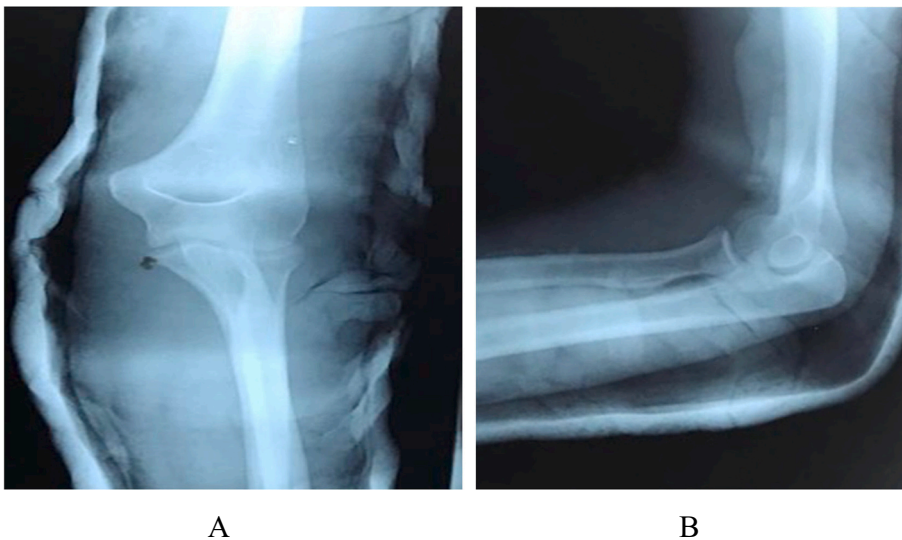


Fig. 4. Anteroposterior (A) and lateral (B) post-reduction radiographs.

All in all, our experience shows that an irreducible dislocation of the elbow with a significant protrusion of the radial head under the skin should suggest a hernia of the radial head. In this situation, an ultrasound or better an MRI could be useful for an idea on the blockage and eventually on the approach to take.

Conclusion

Irreducible posterolateral elbow dislocation is extremely rare. Usually a closed reduction is easy, but sometimes, an open reduction may be necessary. A significant protrusion of the radial head associated with a closed reduction failure is highly suspicious a radial head herniation through the capsule and the complex ligaments (buttonhole aspect).

Conflict of interest

All authors declared that there are no conflicts of interest.

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The authors declare they have received no funding for the preparation of this document.

Ethical approval

The ethical committee of the hospital gave the agreement to report this Case.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in- Chief of this journal on request.

Submission declaration

This article has not been published elsewhere in the same or similar form, in English or in any other language, without written consent of the copyright holder.

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