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Isolated Luxation of Radial Head: Case Report and Review of the Literature

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ABSTRACT

We report a case of post-traumatic isolated posterior dislocation of the radial head in a 28-year-old following a sports trauma in a volleyball match with a hyperpronated fall of the right elbow, the patients were immobilized for 15 days in a 100 brachio-antebrachio-palmar cast. After one year, clinical examination revealed amplitudes comparable to those of the contralateral elbow. Only 20 cases of radial head dislocation in adults have been reported in 40 years, with no real therapeutic recommendations. Thirteen of these was reduced in the ER without surgical intervention and without recurrence at the last follow up.

CASE REPORT

A 28-year-old male with no medical history was admitted to emergency department following a sport accident with a mechanism of hyperpronation of the left elbow, the physical examination founded an total functional impairment, flexed at 90°, painful on mobilization.

Anteroposterior and lateral X-rays of the left elbow were done and revealed an isolated posterior dislocation of the radial head with no associated fracture (Figure 1).

Closed reduction under sedation with propofol and ketamine was performed and post-reduction radiographs showed a good realignment of the radial head and satisfying stability (Figure 2).

The patient was immobilized with a brachio-antebrachio-palmar cast in 100° of flexion. At 1 year follow up, the elbow remained pain-free with amplitudes comparable to the contralateral side: flexion at 130°, no extension deficit, pronation at 80° and supination at 90° with no signs of elbow instability.

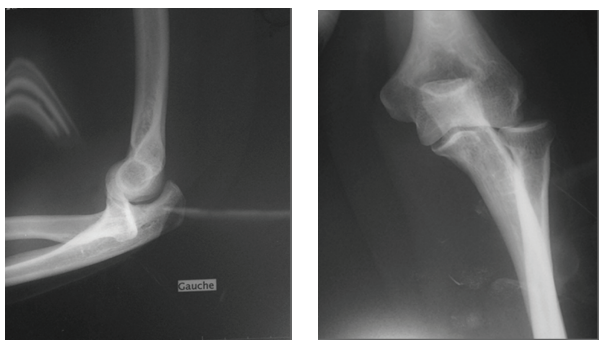

Figure 1: X-rays showing isolated dislocation of radial head.

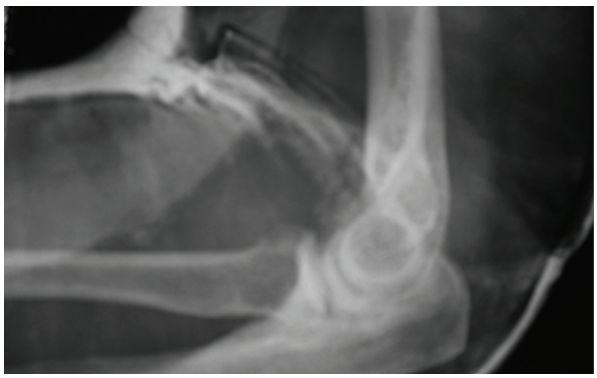

Figure 2: Post reduction X-rays showing good alignement of radial head.

Discussion

Isolated radial head dislocation without ulnar fracture or humerocubital subluxation in adults is a rare entity. Several cases have been reported in children, but only 20 cases have been reported in adults over a 40-year period, the majority of which have been reduced to closed focus with no notable complications [7]. Lateral dislocation of the radial head is the rarest, with only 2 cases reported in the literature; anterior dislocation is more frequent, with 6 cases, and posterior dislocation is the most common, with 12 cases [8].

Forced pronation is the most common mechanism. Bonatus reports one case of forced supination (1). As other cases involve complex trauma, it is sometimes difficult to determine whether the elbow was in flexion or extension at the time of injury [8].

The clinical examination finds a blocked prono-supination with preservation of elbow flexion-extension. 13 out of 20 cases were reduced to closed focus using a flexion-supination movement with direct pressure on the radial head under general anesthesia. Most authors suggest immobilizing the elbow in flexion and supination with a plaster cast [2],

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while Bonatus *et al.* [1] and Negi *et al.* [5] immobilized it in flexion and pronation. The immobilization period varies from 10 days [7] to 4 weeks [2].

The remaining seven cases, due to diagnostic delay or irreducibility, surgery was required, either with reconstruction of the annular ligament using the palmaris brevis muscle in three cases (6), or resection of the radial head in four cases [3].

Neglected dislocations of the radial head may be confused with congenital dislocations. Mizuno *et al* [4] have shown the arthrographic difference between congenital and traumatic dislocation. Arthrography shows that the humeroulnar, radioulnar and humeroradial joints form a single joint cavity in congenital dislocation, which is termed "intra-articular".

In traumatic dislocation, arthrography shows only the humeroulnar joint, and excludes the radioulnar and humeroradial joints. Traumatic dislocation is referred to as "extra-articular".

Conclusion

Traumatic dislocation of the radial head is rare in adults, with fewer than 20 cases published in 40 years. This frequency seems to be underestimated, as this lesion probably corresponds to an aborted posterolateral dislocation. The diagnosis should be made in the presence of elbow impotence in pronosupination, with preservation of flexion-extension amplitudes. X-rays centred on the elbow confirm an isolated dislocation, usually posterior. If the dislocation is anterior, it may be irreducible. If the diagnostic delay is < 2 or 3 weeks, orthopedic reduction always seems possible. Immobilization of the elbow at 90° flexion and supination for 2 or 3 weeks is necessary.

Conflict of Interest: Author not mentioned any conflict of interest

Ethical Consideration: Not Required

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