

Neglected Monteggia Lesion Revealed by an Ipsilateral Fracture of the Distal Radius: A Case Report

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Abstract: Introduction: A radial shaft fracture associated with dislocation of the distal radioulnar joint defines a Galeazzi fracture-dislocation. In contrast, an ulnar fracture associated with radial head dislocation defines a Monteggia lesion. The association of a distal radius fracture with radial head dislocation is unusual and may cause diagnostic confusion. Misinterpreting the acute or chronic nature of the dislocation may lead to unnecessary or unplanned procedures. **Case presentation:** We report the case of a 34-year-old man involved in a road traffic accident. An acute comminuted fracture of the distal radius revealed a neglected Monteggia lesion dating from childhood. The main diagnostic challenge was to determine whether the radial head dislocation was acute or chronic. The presence of a distal radius fracture alone could not establish the age of the dislocation, since an acute radial head dislocation may occur when the distal radial injury acts as a second disruption of the forearm ring. Chronicity was established based on several morphological findings: remodeling and osteophyte formation of the radial head, a well-corticated deformity of the proximal ulna without an acute fracture line, chronic radiocapitellar incongruity confirmed by computed tomography, and intraoperative irreducibility of the radial head. The distal radius fracture was treated by open reduction and internal fixation using an anatomical locking plate through an anterior Henry approach. The painless and well-tolerated chronic radial head dislocation was managed non-operatively with regular follow-up. **Results:** At the six-week follow-up, radiographs showed ongoing union of the distal radius fracture. Elbow flexion-extension was full and painless. Limitation of forearm pronation and supination persisted, without pain or neurological deficit. **Conclusion:** This case highlights the importance of systematically examining the elbow, forearm, and wrist in patients with a forearm fracture. Associated fractures and dislocations should not only be identified but also dated using clinical findings and radiological signs of chronicity. This approach helps distinguish an old deformity from a recent injury and avoids inappropriate treatment.

Keywords: Monteggia lesion; neglected injury; chronic radial head dislocation; distal radius fracture; case report.

Introduction

A Monteggia lesion is defined as a fracture of the ulna associated with dislocation of the radial head. It is rare in adults, and a radial head dislocation that appears isolated on initial radiographs is a classic diagnostic pitfall. Because the forearm behaves as a closed ring, the radial head cannot be displaced without a second failure of this ring, most often an ulnar fracture or plastic bowing of the ulna. An apparently isolated radial head dislocation in an adult should therefore be considered a Monteggia lesion until proven otherwise, which requires a methodical search for a subtle fracture or bowing deformity along the entire length of the ulna [1].

When a Monteggia lesion is missed or inadequately treated, it can progress to a chronic (neglected) radial head dislocation. Chronic dislocation can lead to progressive remodeling of the radial head and humeral condyle, limited pronosupination, elbow stiffness, pain, instability, and occasionally nerve compression. Nevertheless, some patients tolerate the deformity well and maintain satisfactory function for years, such that the lesion is revealed only by a new, unrelated trauma to the same limb.

The combination of radial head dislocation and an ipsilateral distal radius fracture has itself been reported, but almost exclusively in an acute form, in which the distal radial injury acts as the second, permissive disruption of the forearm ring and the dislocation reduces easily [2,3]. The essential problem posed by this combination is therefore not whether it can occur, but whether the radial head dislocation is acute or chronic — a distinction that cannot be settled on biomechanical grounds and rests entirely on morphological signs of chronicity. The two situations diverge radically in terms of treatment: an acute dislocation requires prompt reduction, whereas a well-tolerated chronic dislocation in an adult may warrant non-operative management.

We report the case of an adult in whom an acute distal radius fracture revealed a neglected Monteggia lesion dating from childhood. We emphasize the reasoning that allowed the radial head dislocation to be dated as chronic rather than acute, and the consequences of this distinction for treatment.

Case Presentation

Patient information: A 34-year-old man with no notable medical history was admitted to the emergency department for pain and functional impairment of the right forearm following a road traffic accident. He was riding a motorcycle when he was struck by a car.

Clinical findings: On admission, the patient was conscious, hemodynamically stable, and breathing comfortably, with no other complaints.

Examination of the wrist and distal forearm revealed swelling and deformity of the distal forearm. The skin was intact. Palpation elicited tenderness over the distal radius, and wrist movements were painful.

The elbow examination was otherwise unremarkable, showing only a slight deformity with no tenderness to palpation, particularly over the radial head. Elbow flexion-extension was full and painless. Pronosupination testing was not contributory at admission, being limited by the acute distal radius fracture rather than by the elbow itself. The position of the radial head appeared unchanged from its baseline state, favoring a long-standing dislocation rather than a recent event (Figure 1).



Figure 1. Clinical photographs of the right elbow showing a non-swollen appearance and preserved elbow mobility.

Radial and ulnar pulses were both palpable, neurological examination of the median, ulnar, and radial nerves was normal, and there was no sign of compartment syndrome.

Diagnostic assessment: Anteroposterior and lateral radiographs of the right forearm and wrist showed an extra-articular comminuted fracture of the distal radius (Figure 2).



Figure 2. Initial anteroposterior and lateral radiographs of the right forearm, wrist, and elbow showing the acute extra-articular comminuted fracture of the distal radius and the radial head dislocation.

Elbow radiographs showed an anterolateral dislocation of the radial head with several signs of chronicity: a rounded, remodeled, enlarged radial head bordered by marginal osteophytes; an established, well-corticated deformity of the proximal ulna, without an acute fracture line or recent periosteal reaction; and adaptive changes of the humeral condyle (flattening and remodeling opposite the displaced radial head). Overall, these findings were consistent with a long-standing radial head dislocation secondary to a neglected Monteggia lesion, rather than an acute dislocation (Figure 2).

Computed tomography (CT) of the elbow confirmed the chronic nature of the lesion, demonstrating long-standing radiocapitellar incongruity, remodeling of the radial head, and osteophytic changes, with no evidence of an acute bony injury at the elbow (Figure 3).



Figure 3. CT scan of the right elbow demonstrating chronic radiocapitellar incongruity and the associated remodeling changes.

Given this atypical clinical and radiological presentation, a more detailed history was retaken and the patient was re-examined. This revealed a history of trauma to the same limb during childhood, which had been treated non-operatively.

Therapeutic intervention: The patient was informed of the radiological findings — the distal radius fracture and the long-standing radial head dislocation — as well as the available treatment options. As the radial head dislocation was asymptomatic, a joint decision was made to surgically treat the distal radius fracture and to monitor the chronic dislocation, with delayed surgery to be considered should symptoms develop.

The patient underwent surgery under brachial plexus block, in the supine position, with the right upper limb positioned on a hand table and a pneumatic tourniquet applied at the root of the limb. Through an anterior (Henry) approach, open reduction and internal fixation of the distal radius fracture were performed using an eight-hole anatomical locking plate (Figure 4).



Figure 4. Intraoperative view of internal fixation of the distal radius with an anatomical locking plate, showing satisfactory fracture reduction with restoration of radial inclination and volar tilt of the articular surface.

Intraoperative evaluation confirmed the long-standing nature of the dislocation: the radial head was irreducible and had developed fixed fibrous attachments to the surrounding tissues, with no mobility toward reduction. Diastasis of the distal radioulnar joint was also noted, attributed to the acute distal radius fracture. Elbow flexion-extension was complete, with limited pronosupination (45° of pronation, 45° of supination) related to the chronic radial head dislocation. Given the chronic, asymptomatic nature of the neglected Monteggia lesion, no attempt at surgical reduction or reconstruction of the radial head was undertaken.

Postoperatively, the wrist was immobilized in a plaster splint for three weeks. Analgesics, an anti-inflammatory agent, and vitamin C were prescribed. Mobilization of the fingers and elbow was started immediately. Wrist rehabilitation began after three weeks, comprising passive followed by active mobilization, followed by muscle strengthening.

Follow-up: At the six-week review, radiographs showed ongoing union of the distal radius fracture. Wrist mobility was 60° of flexion and 50° of extension. Elbow flexion-extension was complete and painless, with forearm pronosupination remaining limited (45° of pronation, 50° of supination) due to the chronic radial head dislocation. The latter remained painless, and no neurological abnormality was observed. The patient had resumed his daily activities.

Discussion

A Monteggia lesion combines an ulnar fracture with dislocation of the radial head, and its treatment classically relies on anatomical reduction and stable fixation of the ulna, which usually allows the radial head to reduce. Because the forearm forms a closed ring, a radial head dislocation implies a second injury within that ring; in adults, an apparently isolated dislocation almost always conceals an ulnar fracture or plastic bowing of the ulna, and failure to recognize it is the usual cause of progression to chronicity. Inadequate radiographs, an incomplete elbow examination, and, above all, failure to check the radiocapitellar line on every view are the classic causes of a missed diagnosis.

The central question in our patient was not the mechanism, but the age of the radial head dislocation. This dating cannot be inferred from biomechanics alone, since an acute radial head dislocation can coexist with an ipsilateral distal radial injury; in that scenario, the distal radius fracture itself provides the second, permissive failure of the forearm ring, and such acute associations have been reported with an intact ulna and treated successfully by early reduction [2,3]. The distinction therefore rests exclusively on morphological criteria. In our case, several concordant findings established chronicity: a rounded, osteophytic, remodeled radial head; an established, well-corticated deformity of the proximal ulna without an acute fracture line; adaptive changes of the humeral condyle; and, intraoperatively, an irreducible radial head with fixed attachments to the surrounding tissue. The absence of pain, neurological deficit, or any recent change in elbow function, together with a documented history of trauma to the same limb in childhood treated non-operatively, completed a coherent chronic picture. An acute dislocation, by contrast, would have shown a congruent radial head of normal morphology, a recent ulnar fracture line, and, in most reported cases, ready reducibility.

The diastasis of the distal radioulnar joint noted intraoperatively deserves specific comment, since the combination of a proximal radial head dislocation and distal radioulnar disruption can mimic an acute longitudinal radioulnar dissociation (Essex-Lopresti-type lesion). In our patient, this possibility was ruled out: the distal radioulnar abnormality was confined to the acute comminuted distal radius fracture and resolved after anatomical fixation of the radius; there was no acute proximal migration of the radius, and the radiocapitellar changes were unequivocally chronic. The diastasis was therefore attributable to the recent distal injury rather than an acute proximal event, which preserves the interpretation of two lesions separated in time.

The chronic dislocation also had to be distinguished from a congenital dislocation of the radial head. The unilateral presentation, the well-corticated post-traumatic deformity of the proximal ulna, the absence of a dome-shaped hypoplastic radial head or hypoplastic humeral condyle, and the clear history of childhood trauma all argued in favor of an acquired, post-Monteggia origin [7].

Management of a neglected Monteggia lesion in adults remains controversial. Reconstruction — corrective ulnar osteotomy, open reduction of the radial head, and, if necessary, annular ligament reconstruction — aims to restore ulnar length, alignment, and angulation and to achieve a stable radiocapitellar joint [5], and is generally reserved for patients with pain, functional limitation, instability, progressive deformity, or nerve compression. In an adult with a painless, well-tolerated chronic dislocation, delayed reconstruction offers limited functional benefit and carries the risk of stiffness, recurrent instability, nerve injury, osteotomy nonunion, and deterioration of previously satisfactory function. We therefore treated only the acute distal radius fracture, by open reduction and internal fixation through an anterior Henry approach with an anatomical locking plate, and chose to monitor the chronic radial head dislocation, with reconstruction reserved for the onset of symptoms. The short follow-up is a limitation of this report, and prolonged clinical and radiological surveillance is needed to confirm the persistent tolerance of the untreated elbow.

Finally, this case illustrates that fractures at different levels of the same forearm are not necessarily contemporaneous. An old, remodeled deformity must be actively distinguished from lesions produced by recent trauma; a careful history and complete radiographs of the elbow, forearm, and wrist — supplemented here by CT to characterize the chronic radiocapitellar changes — are essential to avoid both overtreatment of a well-tolerated old dislocation and undertreatment of the acute injury.

Conclusion

A neglected Monteggia lesion can remain clinically well tolerated and be discovered incidentally at the time of a new trauma to the same limb. In an asymptomatic adult with satisfactory elbow function and no neurological deficit, non-operative management can be adopted. Treatment should be directed toward the symptomatic acute lesion, while the chronic lesion requires regular clinical and radiological monitoring.

Patient Perspective

The patient was informed of the chronic radial head dislocation and the available treatment options. He accepted conservative management of the elbow, as the lesion was painless and did not interfere with his daily activities.

Informed Consent

Written informed consent was obtained from the patient for publication of this case report and the associated clinical and radiological images.

Conflict of interest: The authors declare that they have no conflicts of interest.

Author contributions: All authors contributed to the management of the patient, the drafting of the manuscript, and approval of the final version.

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