

A Rare Case of Monteggia Fracture Associated With an Ipsilateral Distal Radius Fracture

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Abstract: *Monteggia fracture is uncommon in humans, which includes a fracture of the proximal ulna associated with an ipsilateral radial dislocation of the head [1], the association of a fracture of the distal radius and a fracture of Monteggia remains exceptional and rare. We report the case of a 36-year-old patient who presented with a Monteggia fracture associated with a distal radius fracture; emergency management was based on osteosynthesis of the ulna using a DCP screwed plate, with osteosynthesis of the distal radius using a Kapandji type plug-in. Functional results were satisfactory with an elbow that was free with 110 ° flexion and full extension. For the wrist, the patient keeps minimal pain with a flexion at 50 °, an extension at 40 °. The follow-up was 4 months.*

Keywords: Elbow dislocation, fracture, radius, ulna, reduction, osteosynthesis

1. Introduction :

Monteggia fracture is uncommon in humans, which includes a proximal ulna fracture associated with ipsilateral radial dislocation of the head[1], the association of a distal radius fracture and a Monteggia fracture remains exceptional and rare. Although the treatment of these isolated lesions is simple, their association makes their management delicate. We report a case of Monteggia fracture associated with a fracture of the distal ipsilateral radius in a 36-year-old.

2. Observation :

This is a 36 year old patient, right-handed, builder, victim during a work accident of a scaffolding fall of a height of 2 meters with reception on the palm of the hand supination. Upon admission to the ER, the patient was conscious with a GCS of 15, with facial abrasions. The locomotor examination found a deformation of the elbow, forearm, and left wrist, with no associated skin lesions or vascular-nervous disorders. The cranial lesion assessment was without particularity. The radiological balance of the locomotor system showed a fracture of Monteggia type III, and a fracture of the extra-articular distal radius ipsilateral with posterior communication without damage of the carp (Figures 1).



Figure 1:Standard radiograph showing Monteggia fracture associated with an ipsilateral distal radius fracture.

After stabilization, the patient was admitted to the operating room, or he was initially treated under plexus block, with osteosynthesis of the ulna by a 10-hole DCP screw plate by approach centering on the ulnar crest, The radial head was reduced spontaneously after stabilization of the ulnar fracture, and in the second stage of a distal radius osteosynthesis by mixed-type skewering under fluoroscopic control. (Figure 2).



Figure 2:Post-operative radiography

The member was immobilized by a BABP splint for 21 days. After the removal of this one at post-operative J21, we began the rehabilitation of the wrist which was based on joint work (flexion/extension, pronation/supination, and cubital and radial inclinations),

and muscle building of the forearm. At the end of this drive, after 4 months of follow-up, the elbow was free with 110° of flexion and full extension, 80° supination and 80° pronation. For the wrist, the patient present a minimal pain with 50° flexion, 40° extension, 15° radial tilt, and 30° ulnar tilt. The force of the forearm is slightly reduced in relation to the contralateral side.

3 Discussion :

A trauma responsible for a fracture of the proximal third of the ulna and an anterior dislocation of the radial head was first described by Monteggia [2] in 1814. Then in 1956, Bado [3] classified this fracture into 4 stages with a type I: anterior luxation and anterior angulation; Type II: posterior luxation and posterior angulation; Type III: lateral luxation and lateral angulation; and type IV: third proximal fracture of the two bones and anterior luxation of the radial head.

Monteggia fracture associated with homolateral distal radius fracture is extremely rare in adults; the mechanism of these homolateral fractures is not well understood. The likely mechanism could be a fall on the outstretched hand with a fully locked forearm in supination, resulting in a fracture of the distal radius. During this time, the trunk continues to rotate and the longitudinal force as well as the external rotation force result in a Monteggia type injury at the elbow [4], this was the mechanism responsible in our case, Causing him a fracture of Monteggia Type III and a fracture of the wrist which is extra articular ipsilateral.

The diagnosis of these complex lesions must be done urgently with a complete bone lesion assessment for better therapeutic management in early times to avoid heavy complications and recurrences. The management of these complex injuries is difficult, anatomical reduction with a stable fracture is very important, and on the contrary if these parameters are not met the results will not be satisfactory [1].

This stability of the ulnar fracture site can be provided by DCP or LC-DCP or 3.5mm reconstruction plates, and the anatomical reduction of the ulna determines the spontaneous reduction of the radial head in 93% of cases. In the remaining 7%, the annular ligament prevents the closed reduction of the radial head [1] and an open reduction must be performed. Despite that, Bado type II fractures, Jupiter type IIA fractures, radial head fractures, coronoid fractures, According to studies, nerve damage and open fractures are risk factors for poor prognosis with a high possibility of second surgery [1,7].

Internal osteosynthesis for the distal radius fracture was associated with better functional scores in these combined lesions [5, 6] Mullan GB. [8] reported a case with a Monteggia type III fracture associated with a fracture of the distal radius type Goryand smith and scaphoid, its management was based on osteosynthesis by 2 semi-platesulna tubes and orthopedic treatment for radius and scaphoid; also Kembhavi RS. [6] described a case with a Monteggia Type II A fracture associated with an undisturbed articular fracture of the distal radius, where it benefited from a radial head resection and osteosynthesis by a 3.5 mm reconstruction plate for Ulna

4 Conclusion :

The association of a Monteggia fracture with a distal radius fracture remains rare. The complete radiological assessment makes it possible to make a precise diagnosis that will guide the surgical procedure, The functional prognosis of these lesions depends essentially on the anatomical reduction and rigidity of the mounting.

References:

- [1]. Suarez R, Barquet A, Fresco R. Epidemiology and treatment of monteggia lesion in adults:Series of 44 cases. Acta Ortop Bras. 2016;24:48–51.
- [2] Monteggia GB. *Instituzioni Chirurgiches*. 2nd ed. Vol. 5. Milan, Italy: Maspero; 1814. Lussazioni Delle Ossa Delle Estremita Superiori; pp. 131–3.
- [3] Bado JL. The monteggia lesion. Clin Orthop Relat Res. 1967;50:71–86.
- [4] Raghavendra S Kembhavi and Boblee James . Type IIA Monteggia Fracture Dislocation with Ipsilateral Distal Radius Fracture in Adult – A Rare Association. J Clin Diagn Res. 2016 Aug; 10(8): RD01–RD03.
- [5] Lee PC, Su JY, Yeh WL. Adult monteggia fracture with ipsilateral distal radius fracture:Case report. Chang Gung Med J. 2000;23:38–42.
- [6]. Kembhavi RS, James B. Type IIA monteggia fracture dislocation with ipsilateral distal radius fracture in adult - A rare association. J Clin Diagn Res. 2016;10:RD01–3.
- [7] Konrad GG, Kundel K, Kreuz PC, Oberst M, Sudkamp NP. Monteggia fractures in adults:Long-term results and prognostic factors. J Bone Joint Surg Br. 2007;89:54–60.
- [8] Mullan GB, Franklin A, Thomas NP. Adult Monteggia lesion with ipsilateral wrist injuries. Injury. 1981;12:413–6