**Scholars Journal of Medical Case Reports (SJMCR)** **ISSN 2347-6559 (Online)**
***Abbreviated Key Title: Sch. J. Med. Case Rep.*** **ISSN 2347-9507 (Print)**

A United of Scholars Academic and Scientific Society, India

# Unhappy Triad of the Elbow: Case Report

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**Article History**
*Received: 22.09.2018*
*Accepted: 03.10.2018*
*Published:30.10.2018*

**DOI:**
10.36347/sjmcr.2018.v06i10.012

**Abstract:** We report the case of a 32-year-old man who had suffered a postero-external dislocation fracture of the right elbow following a fall of stairs; the aim is to describe the unfortunate elbow triad, its complications and its therapeutic management.
**Keywords:** terrible triade, elbow, coronoid, radial head, fractures- dislocations, collateral ligaments.

## INTRODUCTION

The terrible triad injury of the elbow is a rare and severely unstable fracture dislocation. It is a combination of an elbow joint dislocation, fracture of the radial head and fracture of the coronoid process. It may result in chronic instability, elbow stiffness and post-traumatic arthritis, and consequently loss of function and chronic pain [1]. The aim of Terrible Triad Injury treatment is to restore the primary and secondary stabilizers of the elbow so as to obtain a stable joint and allow early rehabilitation.

We report a case of Postero-external dislocation of the elbow with fracture of coronoid and radial head in a 32-year-old man following a fall of stairs

## OBSERVATION

A 32-year-old man presented to the emergency department with a painful right elbow after a fall stairs with reception on the hand, the elbow in extention. Local examination noticed the anatomical landmarks of the elbow, represented by epitrochleate, olecranon and the epicondyle, which, on a bent elbow, should make an isosceles triangle (Nélaton triangle), are not found. There is a shortening of the skeleton of fore arm and deformity of the elbow of profile with posterior projection, corresponding at the olecranon. Palpation finds this "ax stroke", this posterior bony protrusion, and depression retro-humeral (Ombredanne sign). The olecranon is ascended with respect to the epitrochlear-epicondyle line. The radius head is seen outside the olecranon. In front, the foam projection of the humeral epiphysis completes the clinical picture. The vasculo-nervous examination is normal.

Standard radiographs, which showed elbow postero-external dislocation with coronoid end radial head fractures (fig.1).

Closed reduction was done under general anesthesia, traction of the forearm on the axis of the limb while the aid fixes the arm. Confirmation of succefull reduction was done under image intensifier. Then osteosynthesis of the radial head by screwing and suturing of the external collateral ligament (fig.1). the elbow was immobilized for 4 weeks followed by reèducation. Après three months of decline the result was good: Extension / average flexion: 10 ° / 110 °

- Prono-supination: 70 ° / 65 °
- score of mayo clinic: good results

## DISCUSSION

In 1996, Hotchkiss first clearly described a complex pattern of fracture-dislocation characterized by a posterior dislocation associated with radial head and coronoid fractures, which he termed the “terrible triad of the elbow” [2]. Most of these fracture-dislocations were previously treated conservatively, with closed reduction surgery and cast immobilization; however, this type of treatment generally failed, with patients subsequently suffering from pain, chronic instability and stiffness [3]. In the last two decades, it has been widely accepted that the treatment of TTI should be surgical in the majority of cases, with non-operative treatment being reserved for few selected cases [4].

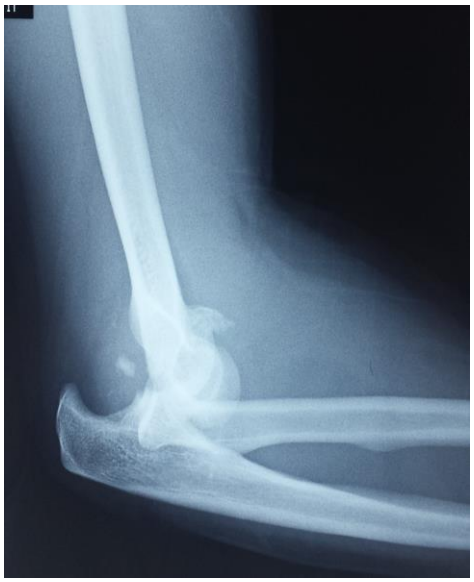

**Fig-1: lateral view of the right elbow showed postero-external dislocation with coronoid end radial head fractures**

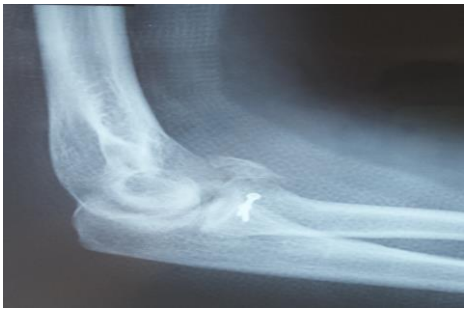

**Fig-2: lateral view after reduction of the luxation and screwing of the radial head**

Indeed, increased knowledge of primary and secondary elbow stabilizers and better surgical techniques has modified the diagnostic and therapeutic protocols in TTI, thus improving clinical outcomes after surgery [5, 6]. The authors of two recent retrospective studies reported satisfactory final outcomes in all the patients and few complications [8]. Other authors have instead reported a high rate of symptomatic and asymptomatic complications when current standardized surgical protocols are adopted. Complications include stiffness (0%-22%), arthritis (0–19, 5%), ulnar nerve entrapment (0–18%) and recurrent instability (4–38%), while the resulting re-intervention rate oscillates between 0% and 55% [9].

## CONCLUSION

The terrible triad injury of the elbow is a rare and severely unstable fracture dislocation. It is a combination of an elbow joint dislocation, fracture of the radial head and fracture of the coronoid process. The treatment of terrible triad wounds has evolved over the last decade. There is consensus that the radial head injury and the LCL lesion need to be treated, but there are differing opinions as to whether the radial head should be repaired or replaced, whether the coronoid fracture should be corrected, or whether the radial head should be corrected. MCL needs to be repaired. In addition, there has been an evolution in the late treatment of severe triad injuries.

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