

A neglected terrible triad of the elbow: A report case

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Abstract

Background: The terrible triad of the elbow was described in 1996 by Hotchkiss and is defined by severe trauma involving posterior dislocation of the olecranon, fracture of the radial head and coronoid process. Management has been a therapeutic challenge in recent decades due to its difficult treatment and poor prognosis. We report a case of a neglected terrible triad of the elbow in a 68-year-old patient following a road accident that occurred 1 month before admission.

Methods: Mr B.M, 68 years old, presented to the emergency department for a closed trauma to his left elbow one month after his admission following a public road accident, it was a motorcyclist hit by a car, resulting in trauma to multiple points of impact including the skull, spine and left elbow. On the radiograph of the elbow face, there was a fracture of the radial head associated with a fracture of the coronoid process and posterior humeroolecranon dislocation. CT imaging made it possible to better visualize the fracture traits and classify them confirming the diagnosis of a terrible neglected triad of the elbow.

Results: The patient received surgery under general anesthesia, with a lateral first of the elbow, a fracture of the radial head with a fracture of the coronoid process in place, after removal of the callus, reduction of the fracture of the head with installation of a mini T-plate, reduction of the olecranon and arthrodesis of the ulno-humeral joint by 02 pins in cross. Post-operative immobilization by a brachio-antebrachio-palmar splint was recommended.

Conclusion: The delay in taking charge of an unfortunate triad of the elbow engages the functional prognosis of the limb. Neglected fractures are still seen in our context and pose a real public health problem.

Keywords: Terrible Triad; Elbow; Traumatology; Public Road accident; Neglected

1. Introduction

The terrible triad of the elbow was described in 1996 by Hotchkiss and is defined by severe trauma involving posterior dislocation of the olecranon, fracture of the radial head and coronoid process. (1) It causes major instability of the elbow joint.(2)

Management has been a therapeutic challenge in recent decades due to its difficult treatment and poor prognosis.(3–6) Neglected fracture is defined as untreated fracture for 3 weeks (7) .

We report a case of a neglected terrible triad of the elbow in a 68-year-old patient following a road accident that occurred 1 month before admission.

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2. Case report

Mr B.M, 68 years old, operated in 1995 for fracture of the right leg having benefited from a tibia plate and operated in 2000 for fracture of the left femur having benefited from the insertion of a femur nail.

The patient presented to the emergency department for a closed trauma to his left elbow one month after his admission following a public road accident, it was a motorcyclist hit by a car, resulting in trauma to multiple points of impact including the skull, spine and left elbow.

The clinical examination found a patient presenting with pain and relative functional impotence of the elbow. We also objectified a deformation of the elbow with an antero-post enlargement of the elbow, disappearance of the Nelaton triangle and the Malgaigne line with shortening of the forearm and a bruise in front of the antero-external and posterior face of the left elbow, without a cutaneous opening or downstream vasculo-nervous disorder (**Fig 1**).



Figure 1 A : Flexion attitude B : Extension attitude

On the x-ray of the elbow face, there was a fracture of the radial head associated with a fracture of the coronoid process and posterior humeroolecranal dislocation (**Fig 2**). CT imaging made it possible to better visualize the fracture traits and classify them confirming the diagnosis of a terrible neglected triad of the elbow (**Fig 3**).



Figure 2 Elbow X-ray



Figure 3_Elbow scan

The patient received surgery under AG, with a lateral first of the elbow, a fracture of the radial head with a fracture of the coronoid process in cal, after removal of the cal, reduction of the fracture of the head with installation of a mini T-plate (**Fig 4**), reduction of the olecrane and arthrodesis of the ulno-humeral joint by 02 pins in cross (**Fig 5**). Post-operative immobilization by a brachio-antebrachio-palmar splint was recommended.



Figure 4 Osteosynthesis of the radial head



Figure 5 Elbow arthrodesis

3. Discussion

Neglected elbow fractures are not common in industrialized countries, but they are not uncommon in our context.(8,9)

The terrible triad of the elbow is a rare entity that accounts for only 10% of radial head fractures according to Van Riet and Morrey (10) and 11% of elbow dislocations. (11,12)

This injury association represents a complex elbow trauma that poses a diagnostic and therapeutic problem causing bone and ligament damage threatening the stability of the elbow in the short and long term, with a high rate of complications and random outcomes. (13) Despite the studies carried out on this subject in our country (14,15) There are no cases of terrible triad of the neglected elbow , neither in our country nor in the literature.

Any elbow dislocation should be considered a triad until proven otherwise, hence the value of CT with 3D reconstruction.(16)

Surgical treatment is needed in the face of great joint instability. The principle of management is based on the restoration of damaged ligament structures (mainly the lateral collateral ligament complex) and repair of the stabilizing bone elements (radial head and coronoid process). (17,18).

4. Conclusion

The delay in taking charge of an unfortunate triad of the elbow engages the functional prognosis of the limb. Neglected fractures are still seen in our context and pose a real public health problem.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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