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Case Study

WHY REDUCE AND FIX AN ISOLATED AND DISPLACED ACROMIAL FRACTURE? REPORT OF A CASE

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ABSTRACT

The fracture of the acromion is rare, only 8% of all scapular fractures. The purpose of the clinical case is to highlight the rarity of this condition, and the indication of surgical treatment to prevent subsequent functional damages as well as chronic pain conditions. We report the case of a 54-year-old patient who suffered a fall from a high height on the right shoulder following which he presented pain and total functional impotence of the upper limb without neurovascular disorders. The diagnosis of the acromion fracture was suspected by physical examination and confirmed by imaging. The treatment consisted of an open reduction with racking fixation. Then, reeducation was started early. The evolution was marked by the disappearance of the pain and the resumption of a good mobility of the shoulder after a retreat of 6 months. The fracture of the acromion is a rare condition that occurs following direct violent trauma. The scanner plays an important role in the management. Surgical treatment is intended to avoid complications and to obtain a functional shoulder especially in displaced forms.

KEYWORDS: Shoulder pain, scapula, acromion, fracture, surgery.

INTRODUCTION

The fracture of the acromion is an articular fracture of the scapula. It is relatively rare, only 8% of all scapular fractures [1]. It is not always easy to diagnose because it most often accompanies life-threatening injuries and is a cause of persistent pain on a traumatized shoulder.

CT scanner is very useful for diagnosis and provides essential support for therapeutic orientation.

Surgical treatment has its place in the displaced forms, to avoid the complications of type pseudarthrosis or sub acromial conflict.

The purpose of the clinical case is to highlight the rarity of this condition, and the indication of surgical treatment to prevent subsequent functional damages as well as chronic pain conditions of the shoulder.

CASE REPORT

This is a 54-year-old patient with no significant pathological history who suffered a direct fall from a high height on the right shoulder's stump, resulting in severe pain with swelling but without net deformation. Two days later, the patient consulted in our department following the persistence of the pain.

The clinical examination showed a total functional impotence of the right upper limb with a painful mobilization and no neurovascular disorders.

Standard radiography revealed a fracture at the base of the acromion (Fig 1). Computed Tomography (CT) with 3-dimensional reconstruction (3D) showed a fracture line at the base of the acromion with a displacement of the acromial fragment (Fig 2-3).

The patient was operated under general anesthesia and in a half sitting position. An anterior approach of the sub-acromial space allowed to expose the fracture of the acromion and to fix it with 3 Kirschner pins (Fig 4-5). On exploration, there was no damage to the rotator cuff. A postoperative immobilization by a scarf elbow to the body for 6 weeks was instituted. Reeducation was started early with gentle active movements of the shoulder. No infection of the operative site was noted. Ablation of the osteosynthesis material was performed after 8 weeks (Fig 6).

After a retreat of 6 months, the result is considered very well by the disappearance of the pain and the recovery of a good painless mobility of the right shoulder.

Figure 1: Standard X-ray showing fracture at the base of the right acromion.

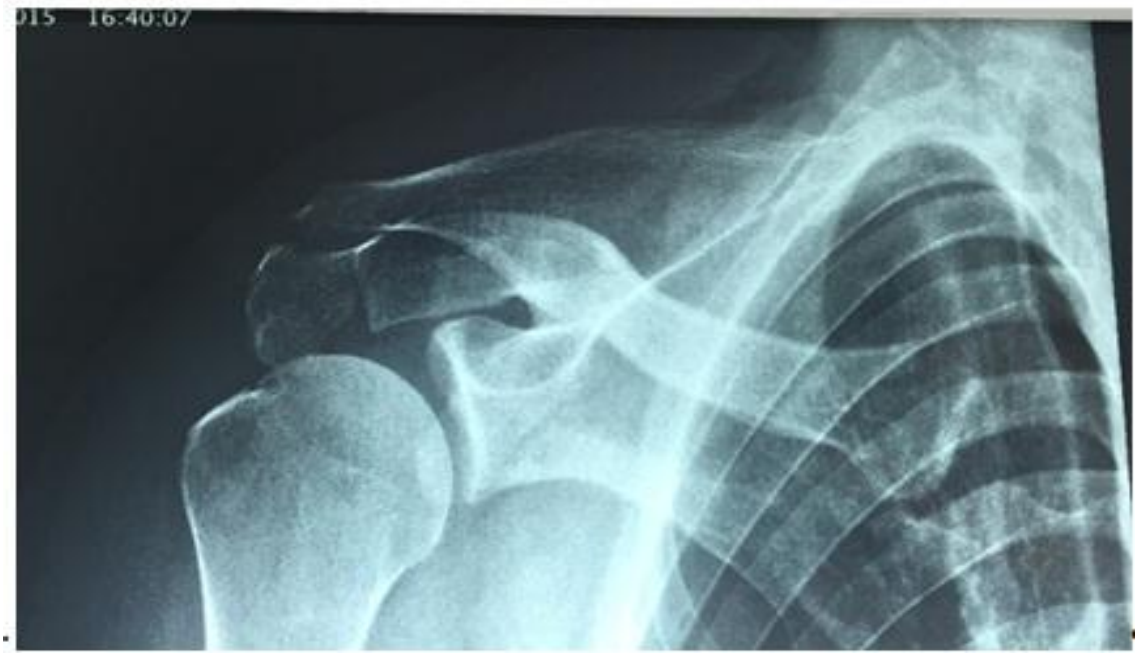


Figure 2-3: CT with 3D reconstruction showing the fracture of the right acromion with displacement of the acromial fragment.

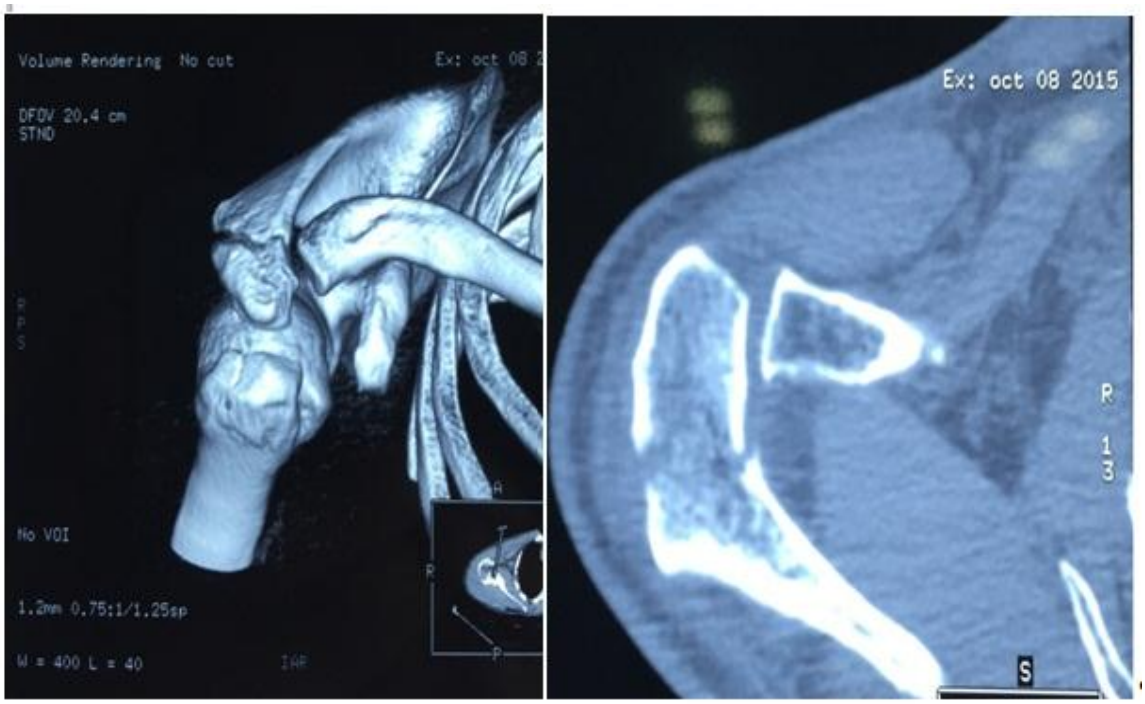


Figure 4: Intraoperative image showing a fracture of the acromion.

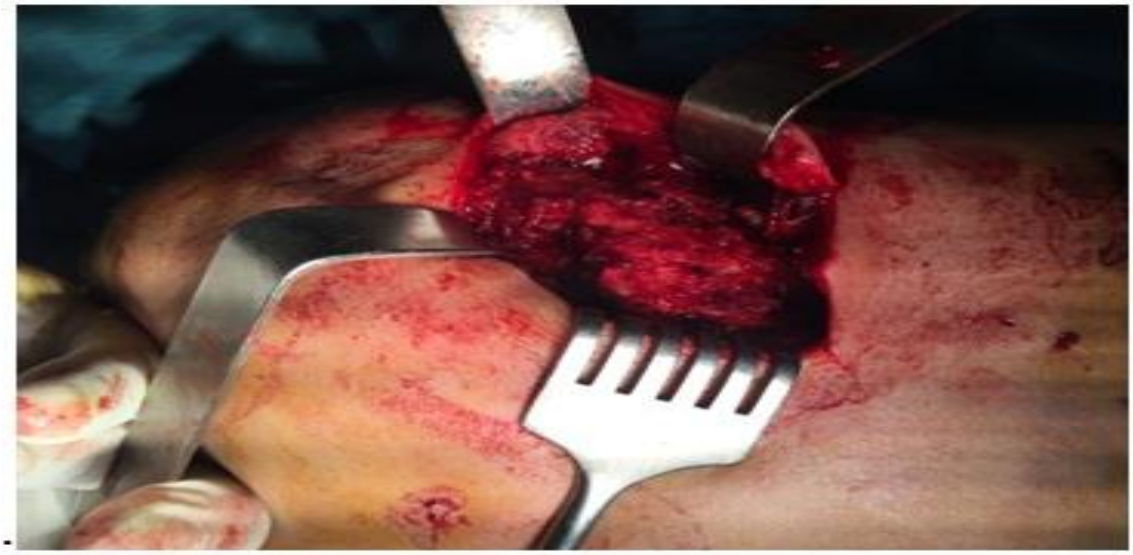


Figure 5: Standard X-ray showing fixation of the fracture of the acromion by 3 pins.

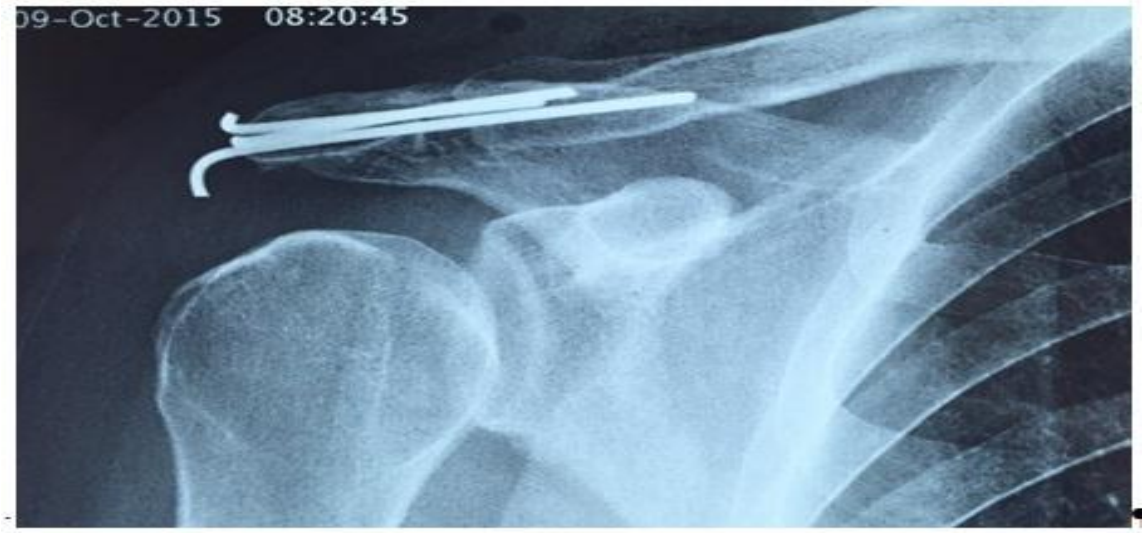
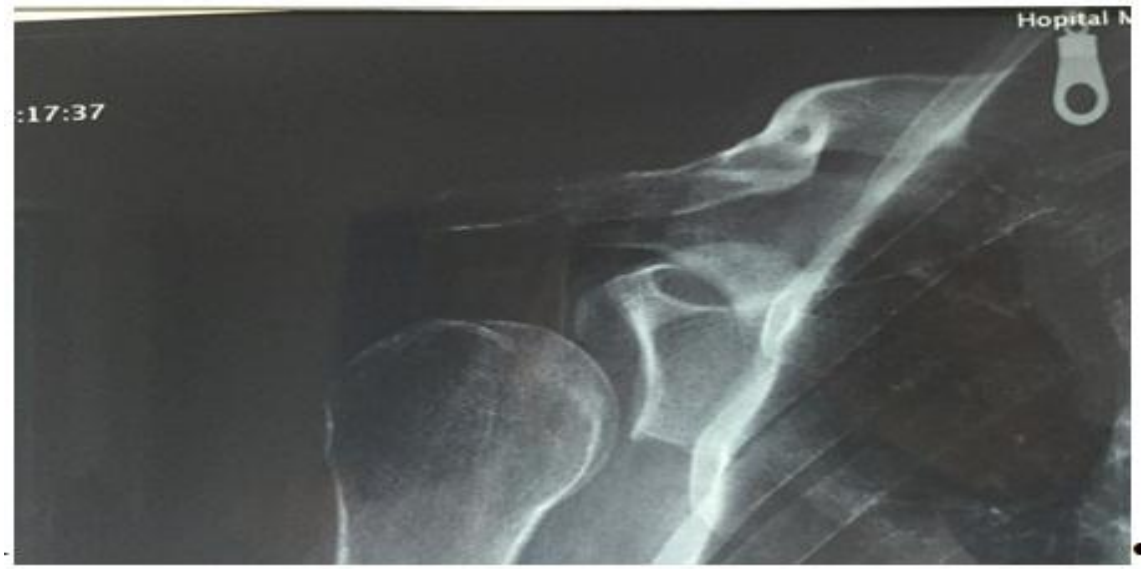


Figure 6: Standard radiograph of the shoulder after removal of osteosynthesis material.



DISCUSSION

Fractures of the scapula are rare, about 3 to 5% of shoulder fractures [2] and those of acromion are even rarer, accounting for only 8% of all scapular fractures [1]. They are often the result of a direct violent trauma on the upper face of the shoulder, which explains their passage unnoticed especially in the polytraumatized. They can be associated with injuries such as dislocation of the shoulder, rupture of the rotator cuff, or brachial plexus involvement. This last lesion is rarely reported in the literature [3].

Isolated acromion fractures are described in small series of cases in the literature. Some authors have divided these fractures into five distinct types that have been classified into three groups. There is type I with minimal displacement, which gathers type IA following avulsion and type IB following direct trauma, type II with lateral, superior or forward displacement without reduction of the sub acromial space, these two types are generally orthopedic and finally type III with displacement and reduction of subacromial space, which requires surgical treatment [4].

The fracture line is typically located at the base of the acromion, resulting in a moderate displacement of the acromial fragment, generally forwards due to the deltoid and acromioclavicular ligament. This type of fracture is usually difficult to see in standard radiographs. The scanner with 3D reconstruction is the examination of choice to date; it provides essential assistance to the development of surgical treatment [5].

Most of the fractures of the acromion are slightly displaced and respond to nonsurgical treatment. In case of displacement, a reduction maintained by an osteosynthesis can be practiced in order to avoid the occurrence of a sub acromial conflict secondary to a consolidation in a vicious position. Several surgical techniques have been reported in the literature. Some authors recommend a closed reduction of displaced fractures; others recommend the open reduction with fixation or excision of the acromial fragment [4] if it is small to avoid the reduction of the deltoid strength and the erasure of the lateral relief of the shoulder [6]. The osteosynthesis is carried out either by use of the Kirschner pins by simple racking; it is the fixation in our case, or racking-guying, or by use of a compressive screwing if the direction of the fracture line allows it.

Some authors have also suggested the use of reconstruction plates especially in the associated forms, when the acromioclavicular joint is clearly involved or when a fracture of the distal clavicle is associated [7].

Certain complications can occur during a fracture of the acromion in the post-traumatic conflict type, secondary to the lack of reduction, or also a nonunion following a soft tissue interposition, especially in the fractures of the base of the acromion.

CONCLUSION

The fracture of the acromion is a rare condition that goes unnoticed. The scanner plays an important role in the management. Surgical treatment has its place in displaced forms. It avoids the complications related to the sub-acromial conflict and to obtain a functional and painless shoulder.

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