



Case report

Posterior shoulder fracture-dislocation : open reduction and screw anchor osteosynthesis (A rare case and review of the literature)

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Abstract

Posterior glenohumeral dislocation is a rare entity. It is most often a result of highenergy trauma and a frequently overlooked diagnosis.

We report the case of an 83-year-old patient who presented a posterior glenohumeral dislocation of the shoulder with a trochin fracture and who had benefited from an open reduction with osteosynthesis of the trochin by an anchor.

Keywords : shoulder – Dislocation – Reduction

Introduction

Posterior glenohumeral dislocation is a rare entity accounting for less than 3% of all dislocations of the shoulder. The main etiologies are direct or indirect trauma, seizures and electrocution. [1]

The diagnosis of posterior dislocation is missed in 50 to 80% of cases. The non-diagnosis of a posterior dislocation most often results in a stiff and painful shoulder with significant risk of necrosis of the humeral head.

Case report

Patient, 83 years old, female, right-handed laterality,

having as an antecedent an ischemic stroke, treated depression, admitted to the emergency room for closed shoulder trauma following a fall in the context of a crisis. The clinical examination had objectified a deformed upper limb in adduction and rotation int with an impossible external rotation. The left shoulder is painful deformed with palpable humeral head posterior without cutaneous opening or vasculo-nervous attack.

AP and lateral radiographs (figure 1a-b) showed rounded humeral head in forced internal rotation with disappearance of the glenohumeral joint space associated with a trochin fracture. CT of the shoulder showed posterior glenohumeral dislocation with fracture of the trochin. (Figure 2)

The reduction was impossible by external maneuver (traction in the axis of the arm in adduction with mediolateral pressure on the shoulder and external rotation) under general anesthesia. So, the reduction of dislocation was achieved by the superexternal approach of the shoulder ; we has found in the exploration: incarceration of the biceps, tearing of the trochin and a comminuted fracture of the trochiter. We did a tenotomy of the biceps with a re-insertion of the trochin with the head by screwed metal anchor diameter 5 and reinsertion of the two tuberosities between them by osteosuture. The clinical and scopic checks were satisfactory (Figure 3). The patient remained immobilized by bandage elbow to the body with the upper limb in neutral rotation for 45 days.

At 15 day and 45 day of follow up, clinical and radiological progress was good. The tuberosity of the upper end of the humerus has been consolidated and the joint still in place. A gentle and progressive reeducation has been prescribed. At 3

months follow-up, the shoulder was painless, mobile with slight limitation of the antepulsion “90°” and abduction “80°”.

The patient was reviewed on D15 and D45 with good clinical and radiological progress. The tuberosity of the upper end of the humerus has been consolidated with one shoulder still in place.



Fig 1 A-B : anteroposterior and lateral radiographs showing rounded humeral head in forced internal rotation with disappearance of the glenohumeral joint space associated with a trochin fracture



Fig 2 : CT of the shoulder showing posterior glenohumeral dislocation with fracture of the trochin

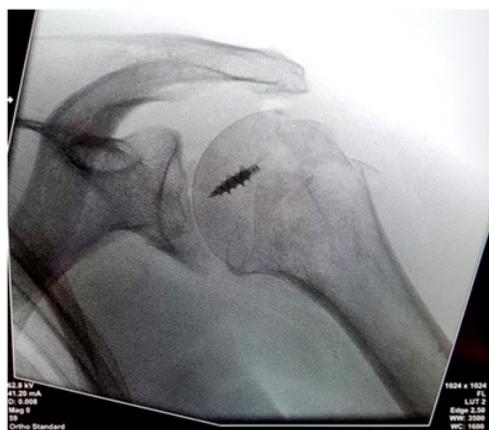


Fig 3 : postoperative scopic check showing reduced dislocation of the shoulder and tuberosities

Discussion

Posterior shoulder fracture-dislocation is a rare injury accounting for approximately 0.9 % of shoulder fracture-dislocations. Impression fractures of the articular surface of the humeral head, followed by humeral neck fractures and fractures of the lesser and grater tuberosity, are the more common associated fractures [1]. Multiple mechanisms have been implicated in the etiology of this traumatic entity most commonly resulting from forced muscle contraction as in epileptic seizures, electric shock or electroconvulsive therapy, major trauma such as motor vehicle accidents or other injuries involving axial loading of the arm, in an adducted, flexed and internally rotated position. Despite its' scarce appearance in daily clinical practice, posterior shoulder dislocation is of significant diagnostic and therapeutic interest because of its predilection for age groups of high functional demands (35-55 years old), in addition to high incidence of missed initial diagnosis ranging up to 79 % in some studies [1]. Several treatment options have also been proposed to address this type of injury, ranging from non-surgical methods to humeral head reconstruction procedures or arthroplasty with no clear consensus over definitive treatment guidelines, reflecting the complexity of this injury in addition to the limited evidence provided by the literature. The surgical treatment is indicated in the rare cases when a closed reduction of the shoulder joint was not possible. A significant displacement of the humeral fracture is alsoan indication for surgical treatment [3]. The authors consider this is a wise optionwhen the stability of the reduced shoulder joint is confirmed and also if the risk of post-traumatic shoulder osteoarthritis is accepted. It hasbeen shown that post-traumatic degeneration of the glenohumeral joint is relatively uncommon after posterior dislocation, but when it occurs the severity of the degenerative osteoarthritis is usually worse than that following anterior dislocation. Avascular necrosis of humeral

head is a risk that must be taken into consideration if an open surgery is to be performed [4]. However, chronic cases or acute cases with defects over 25% of the humeral head and complex fracture-dislocations demand open reduction and additional procedure to achieve stability. Shoulder arthroplasty, either hemi or total, is usually seen as a last option to treat chronic dislocations over 6 months, associated with defects over 45% or deformities of the humeral head [5]. Persistent shoulder stiffness and functional incapacity after a simple dislocation are frequently associated with delay in diagnosis ; other possible complications include deformity, osteoarthritis, or osteonecrosis of the humeral head [6].

Conclusion

Posterior shoulder fracture–dislocation is a rare traumatic condition prone to be missed on initial presentation. Delays in diagnosis, errors in treatment, and protracted morbidity frequently occur.

Early diagnosis is the key to a favorable prognosis. Indeed, in case of chronicization, osteochondral lesions can lead to joint destruction with a surgical treatment that will become complex with little chance of restoring the functional anatomy of the shoulder.

The key to diagnosis of posterior shoulder fracture-dislocations lies in maintaining a high index of clinical suspicion and performing appropriate radiographic investigations.

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