

A rare case of bilateral antero-internal shoulder dislocation: A case study and review of the literature

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Abstract

Introduction: Although anterior dislocations of the glenohumeral joint are the most frequent type of dislocation, bilateral forms are very rare [1] dominated by the posterior variant. We report a new case of bilateral anterior dislocation of the glenohumeral joints and discuss the mechanism and treatment.

Case report: This concerns a 55-year-old patient, who presented to the emergency room with closed trauma to both shoulders in undetermined circumstances. The patient reported a disturbance of consciousness followed by a post-critical coma and generalized tonic-clonic seizures according to witnesses. Clinical examination revealed total functional impotence of the upper limbs, with the following findings: filling of the delto-pectoral groove, bilateral external axe strike, oedema of both shoulders. X-rays of both shoulders revealed bilateral anterior glenohumeral dislocation, with a nondisplaced fracture of the left great tuberosity.

Discussion: Bilateral shoulder dislocation is a rare occurrence typically associated with specific etiologies such as epileptic seizures, electrical or neuromuscular disorders, or traumatic events. This report presents a case of bilateral shoulder dislocation in a patient with no history of ligament hyperlaxity, categorized under Brown's classification as traumatic origin. Despite the rarity of this presentation, similar unusual mechanisms of shoulder dislocation have been reported in the literature, including cases where each shoulder dislocated due to different mechanisms.

Keywords: Shoulder; Glenohumeral Jointm; Dislocation; Bilateral dislocation; Epilepsy

1. Introduction

Although anterior dislocations of the glenohumeral joint are the most frequent type of dislocation, bilateral forms are very rare [1] dominated by the posterior variant that often occurs as part of the "triple E syndrome" secondary to epileptic seizures causing violent and synchronous muscle contractions of the two shoulders, pushing back the humeral

head most often in the posterior direction. Anterior forms are exceptional, fewer than thirty cases have been published [1-4]. We report a new case of bilateral anterior dislocation of the glenohumeral joints and discuss the circumstances, radiological appearance, treatment, and prognosis with a literature review

2. Case report

This concerns a 55-year-old patient, with no documented medical history, who presented to the emergency room with closed trauma to both shoulders in undetermined circumstances. The patient reported a disturbance of consciousness followed by a post-critical coma and generalized tonic-clonic seizures according to witnesses. On clinical examination,

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the patient was hemodynamically and respiratory stable, with a Glasgow score of 14/15. Musculoskeletal examination revealed total functional impotence of the upper limbs, with the following findings: filling of the delto-pectoral groove, bilateral external axe strike, oedema of both shoulders (figure 1). Examination of the circumflex nerve was normal on both sides, and the rest of the examination was unremarkable. He benefited from a standard radiographic work-up consisting of an X-rays of both shoulders, a frontal chest X-rays. Which revealed bilateral anterior glenohumeral dislocation, with a nondisplaced fracture of the left great tuberosity (figure 2). The patient was taken to the operating room under general anesthesia. Using external maneuvers (traction, abduction, external rotation, internal rotation, adduction), both dislocations were reduced, and immobilization with an elbow brace was applied. X-rays confirmed the reduction of the dislocation (figure 3).

Three weeks after the accident, both shoulders remained reduced. The immobilization was removed and rehabilitation sessions began, starting with pendulum movements. A sling was put in place on the right between rehabilitation sessions.

Nine weeks after the accident, the mobility of both shoulders was satisfactory: abduction was 150° for both shoulders, internal rotation reached 80° on both sides, external rotation was 30° on the right and 40° on the left. The sensitivity and contractility of both shoulder stumps were normal. There were no signs of hyperlaxity: no sulcus sign, no recurvatum of the elbow and the thumb-radial edge distance forearm was 10 cm.



Figure 1 Clinical aspect

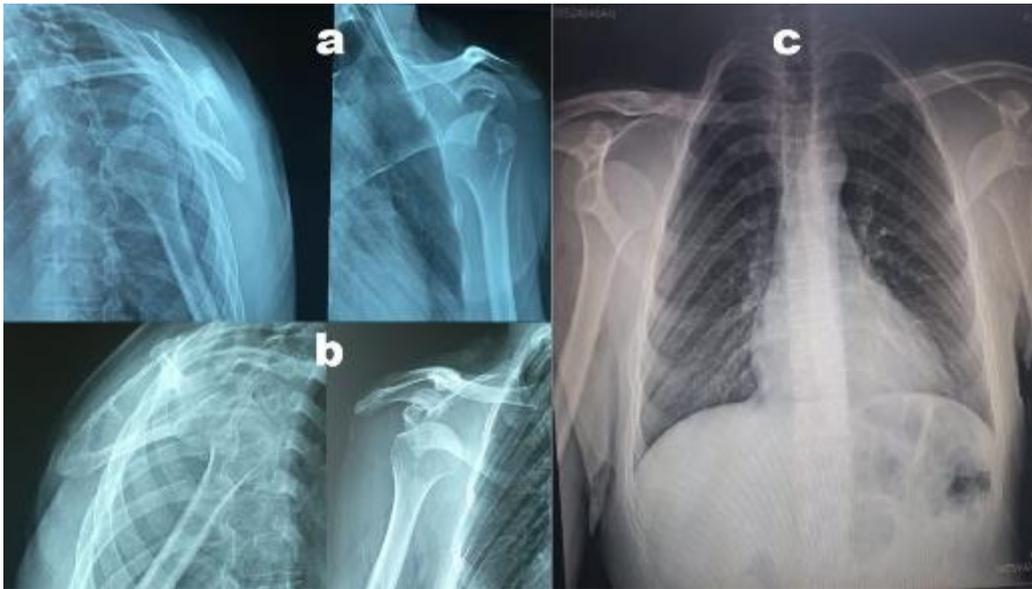


Figure 2 X-rays showing bilateral antero-internal dislocation of the shoulders: sub-coracoid variety, with great tuberosity fracture of the left humerus

a: Front and lateral view of the left shoulder; b: Front and lateral view of the right shoulder; c: frontal chest view

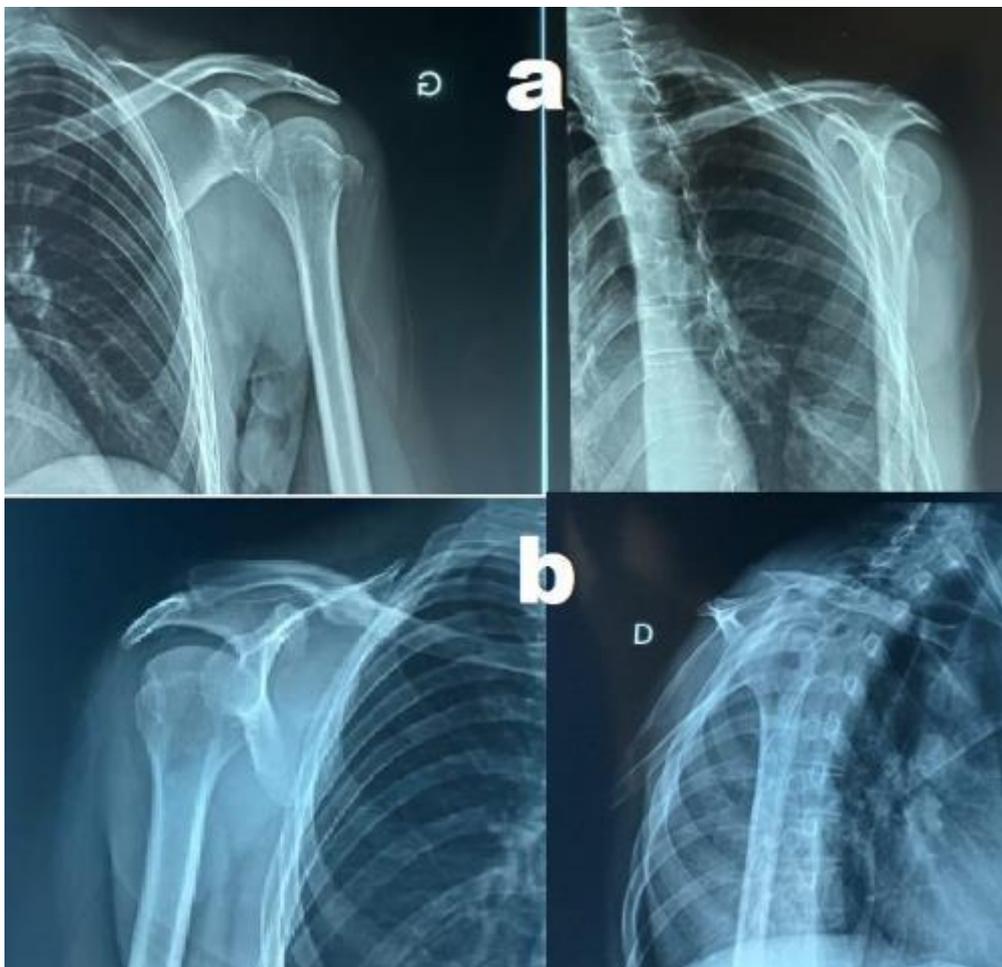


Figure 3 Post reduction radiographs, showing that both dislocations were reduced

a: left shoulder b: right shoulder

3. Discussion

Bilateral shoulder dislocation is a rare clinical entity [1,2,5]. In fact, the force required to produce it must act symmetrically and synchronously on both glenohumeral both glenohumeral joints. This most often occurs in epileptic seizures, electrical or neuromuscular disorders [4]. The first case was described in 1902 [6]. In 1984, analysis of 90 cases of bilateral dislocation published in the literature, Brown [5] identified three different etiologies: violent muscle contractions (49%) ; trauma (23%) ; atraumatic (36%). These dislocations may be posterior (the most frequent form), inferior or anterior [4,7]. Bilateral anterior varieties are rarer. A review of the literature revealed around thirty cases. Most are of traumatic origin, or secondary to seizures or epileptic seizures [8].

Our case, with no history of ligament hyperlaxity and belonging to Brown's group 2, is interesting in two respects points. The mechanism of dislocation in our patient has not been identified. These circumstances had never been described in the literature, but other unusual traumatic mechanisms have been reported. Singh and Kumar [3] reported a case in which both shoulders dislocated by different mechanisms: dislocation of the left shoulder was secondary to a motorcycle fall on the shoulder, whereas on the right, the dislocation occurred when paramedics were helping the patient into the car by the right upper limb. This patient had a history of instability of the right shoulder, and this was his fourth episode. Two other cases of bilateral anterior shoulder dislocation were reported in patients with no history of instability, having lifted bars during a weight training session, the shoulder dislocations occurred when the bar was tilted backwards. The authors recommended the use of fixed bars to prevent such dislocations [4,9].

The dislocations were easily reduced under general anaesthetic with Kocher's method. We did not want to reduce it under sedation, the method usually used in the department for cases of shoulder dislocation. The pain experienced by the patient during the Kocher method might have provoked a reflex contracture, which could prevent the reduction of one or two dislocations [2]. The Spaso technique, described by Miljesic and Kelly in 1998 [10], is said to be more effective. This simple technique involves vertical traction on the traumatized limb, held by the wrist, with the patient in dorsal recumbency, then gradually progressively externally rotate the limb. The force used to achieve reduction with this technique would be Kocher's method [3,11]. The orthopedic treatment we instituted; we achieved a good result. This confirms our orthopedic management.

4. Conclusion

Bilateral shoulder dislocation is a rare injury, and a post-traumatic etiology is exceptional. We report an unusual occurrence of the causal mechanism.

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.

References

- [1] Dunlop CC. Bilateral anterior shoulder dislocation. A case report and review of the literature. *Acta Orthop Belg* 2002;68(2):168–70.
- [2] Devalia KL, Peter VK. Bilateral post-traumatic anterior shoulder dislocation. *J Postgrad Med* 2005; 51:72–3.
- [3] Singh S, Kumar S. Bilateral anterior shoulder dislocation: a case report. *Eur J Emerg Med* 2005;12(1):33–5.
- [4] Cresswell TR, Smith RB. Bilateral anterior shoulder dislocations in bench pressing: an unusual cause. *Br J Sports Med* 1998;32(1):71–2.
- [5] Brown RJ. Bilateral dislocation of the shoulders. *Injury* 1984; 15:267–73.
- [6] Myenter H. Subacromial dislocation from muscular spasm. *Ann Surg* 1902; 36:117–9.

- [7] Ryan J, Whitten M. Bilateral locked posterior shoulder dislocation in a footballer. *Br J Sports Med* 1997;31(1):74–5.
- [8] Sharma L, Pankaj A, Kumar V, Malhotra R, Bhan S. Bilateral anterior dislocation of the shoulders with proximal humeral fractures: a case report. *J Orthop Surg (Hong Kong)* 2005;13(3):303–6.
- [9] Maffulli N, Mikhail HM. Bilateral anterior glenohumeral dislocation in a weight lifter. *Injury* 1990;21(4):254–6.
- [10] Miljesic S, Kelly AM. Reduction of anterior dislocation of the shoulder: Spaso technique. *Emerg Med* 1998; 10:173–5.
- [11] Yuen MC, Tung WK. The use of the Spaso technique in a patient with bilateral dislocation of shoulders. *Am J Emerg Med* 2001; 19:64–6.
- [12] Saragaglia D, Picard F, Le Bredonchel T, Moncenis C, Sardo M, Tourne Y. Les instabilités antérieures aiguës de l'épaule : résultats à court et moyen terme du traitement orthopédique. *Rev Chir Orthop* 2001 ; 87:215–20