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Bilateral *Luxatio erecta* following a fall from standing height: A case report

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Abstract
Luxatio erecta is a rare entity of shoulder dislocation, the clinical presentation with shoulder hyperabduction and the humeral head felt in the axilae is unmistakable. Treatment of choice is closed reduction under sedation, most cases have a good prognostic.
We present the case of a 68-year-old male who went to the emergency room with a diagnosis compatible with bilateral luxation erecta of the glenohumeral joint. An awake closed reduction was performed with good results and no complications.

Keywords: *Luxatio erecta*, shoulder dislocation, closed reduction

Introduction
Glenohumeral luxation is the most common type of luxation seen in the emergency department, due to being the joint with the greatest range of motion in the body. Most dislocations are anterior followed by posterior and finally inferior, also known as *Luxatio erecta*. *Luxatio erecta* represents 0.5% of dislocations. Clinical manifestation is typical and is characterized by hyperabduction of the affected arm, flexion of the elbow and pronation of the forearm. This type of dislocation is related to complications such as neurovascular lesions. Early recognition and treatment is essential to reduce complications.

Case report
A 68-year-old male was brought to the emergency department by ambulance after falling from stranding height while walking on the street, slipping down and hitting his face and chest on the ground, causing pain and functional impotence of both upper limbs. Upon physical examination both shoulders were abducted and flexed at 160º, with elbows partially flexed. (Figure 1) The patient was unable to adduct and lower the arms and there was immediate intense pain when attempting passive or active movements. Both humeral heads were palpable in the lateral chest wall of the axillae. The patient referred paresthesias in the left hand, deep and superficial sensation in both arms were complete and no vascular deficit was found. Radiological assessment revealed a bilateral lower glenohumeral dislocation. (Figure 2).

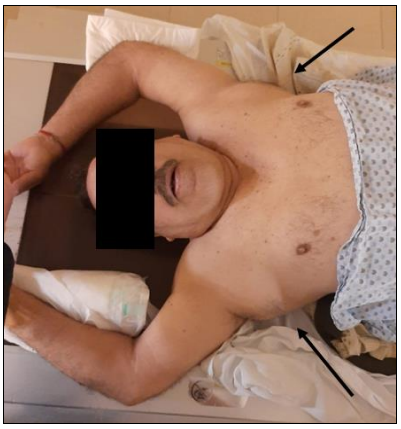

Fig 1: Patient presentation at the emergency department

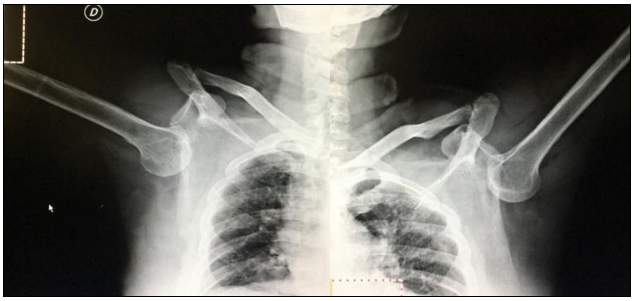

Fig 2: X-rays showing bilateral inferior glenohumeral dislocation

Closed reduction was performed by a traction-counter traction following the administration of a single dose of IV buprenorphine. Reduction was obtained on the first attempt and confirmed by radiography. (Figure 3) No fractures were identified. Brachial, radial and ulnar pulses were palpable, no motor deficit was detected and the patient referred improvement of the paresthesias.

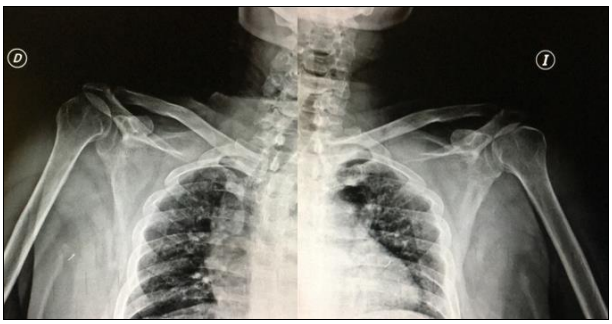

Fig 3: X-rays showing reduction of bilateral glenohumeral dislocation

Patient was discharged from the emergency department with immobilization of both upper limbs with bilateral slings in adduction and internal rotation for three weeks with posterior progressive physiotherapy. At the four-week assessment the patient denied shoulder pain or instability and showed little range of motion limitation at end degrees nevertheless without limitation in daily activities.

Discussion

Luxatio erecta is a rare form of glenohumeral dislocation, presented secondary to a traumatic injury. The two mechanisms of injury described in the literature are an inferior vector force applied to an abducted extremity, disrupting the inferior ligamentous complex, and axial loading of a fully abducted upper extremity with the acromion acting as a fulcrum leading to an impaction of the humerus into de inferior capsule [1]. It is associated with complications such as rotator cuff tears and brachial plexus injury in up to 80% and 60% of cases respectively. Among less frequent injuries, fractures of the acromion, humeral neck, greater tuberosity, clavicle, coracoid and humeral head have been reported [1, 2].

Thus, a thorough and well documented neurovascular exam should be performed before and after reduction as well as a close follow up in the weeks following dislocation [3]. If present, it usually presents itself as neurapraxia which resolves itself between 2 weeks and 12 months without specific treatment [4, 5].

Closed reduction should be attempted with adequate patient relaxation. Nevertheless, if anaesthesia or sedation is not available and patient is cooperative reduction may be attempted. Two reductions techniques have been described, traction-counter traction, described by Freundlich *et al*. in 1983 and a two-step technique described by Nho *et al*. consisting in anterior translocation of the humeral head through rotation followed by traction and replacement in the glenoid fossa [2, 6]. In cases of irreducible dislocations despite adequate sedation and muscle relaxation or presence of a neurovascular lesion, open surgical approach must be attempted.

Conclusion

Bilateral luxation erecta is an uncommon diagnosis, which is highly painful, uncomfortable and associated to vascular and nervous injuries, thus the need to make a careful and fast reduction. Sedation prior to reduction should be used whenever possible as it helps with muscle relaxation a patient pain, nevertheless an adequate and fast reduction is possible without sedation in a cooperative patient.

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