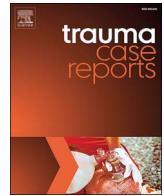


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Case Report

Luxatio erecta with greater tuberosity fracture: A case report

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ABSTRACT

Luxatio erecta is an unusual humeral dislocation. It is frequently associated with neurovascular injuries and concomitant fracture. As such, they require a thorough clinical and imaging evaluation. The vast majority of cases may be treated with closed reduction alone, but infrequently, some may require an open procedure. The authors report a case of luxatio erecta with fracture of greater tuberosity to underline the rarity of this entity, and to describe the mechanism of this injury and the therapeutic modalities.

Introduction

Luxatio erecta humeri (LEH) accounts for only an estimated 0.5% of all shoulder dislocations making it one of the rarest forms of orthopedic injuries [1]. The first description of this entity was done in 1859 by Middeldorpf and Scharm [2]. Clinically, it is characterized by hyper abduction of the affected arm, flexion of the elbow and pronation of the forearm. The diagnosis is confirmed by anteroposterior radiograph. Luxatio erecta is frequently associated with rotator cuff tears, fracture of clavicle, coracoid, or greater tuberosity, and it is potentially complicated by neurovascular compromise. As such, a careful neurovascular examination is required both before and after closed reduction which must be done with controlled and non-violent method to prevent iatrogenic complications.

We present a case of luxatio erecta with greater tuberosity fracture, in order to discuss in details the mechanism of such injury, and highlight the importance of prompt closed reduction and early mobilization to ensure a satisfactory long term outcome.

Case report

A 62-years-old patient who had been undergoing haemodialysis for 12 years for an idiopathic chronic renal failure was presented to our emergency department with pain and spectacular deformity of the left shoulder, following a fall to the ground. He described that he fell with his right arm extended above his head low-velocity injury. On physical examination, the left humerus was abducted, left elbow flexed, and left hand resting on his forehead. He was unable to bring the elbow back to the body (Fig. 1), and the humeral head is palpable in the axilla. The brachial, radial, and ulnar pulses were palpable, and neurological examination was grossly intact. He subsequently received a radiological assessment that objectified an inferior glenohumeral dislocation with fracture of the greater tuberosity of the humerus (Fig. 2).

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Fig. 1. Typical attitude of patient with hyperabduction of the shoulder, flexion at elbow and pronation of forearm.

Then, closed reduction under sedation using the 2-step maneuver was attempted. In fact, one hand was placed on the shaft of the humerus and the other one on the medial condyle. The hand on the shaft pushed the humeral head from an inferior location to an anterior location and the other hand provided gentle superior directed force at the distal humerus. Once accomplished, the humerus was adducted against the body. The humerus was then external rotated reducing the humeral head into the glenoid. Successful reduction was confirmed by radiograph, which showed anatomical reduction of glenohumeral joint and greater tuberosity fracture (Fig. 3). Once reduced, the brachial, radial, and ulnar pulses were palpable, and no motor or sensory deficits were detected. The arm was immobilized elbow to body for 4 weeks. Then, the patient was advised to physical therapy. Gentle pendulum exercises were initiated 4 weeks after reduction, with passive range of motion and isometric deltoid exercises. After 6 weeks, physician-directed rotator cuff strengthening program was initiated. At her third months post-reduction, the patient was satisfied on his function and stability and he felt able to perform activities of daily living.

Discussion

Luxatio erecta, or inferior shoulder dislocation, is a rare presentation case in the emergency department. It occurs more frequently in men with no age predilection as a result of a high-energy trauma such as a fall from a height or a motor vehicle accident [3]. However, low energy falls causing inferior dislocations have been reported as well. Davids and Talbott [4] reported two mechanisms of luxatio erecta. A direct dislocation results from an axial loading to a fully abducted arm. An indirect dislocation, which is more common, is the result of a hyper abduction combined with external rotation as in our case.

The classic clinical finding is the arm locked in abduction, the elbow in flexion and the forearm behind the head, and any attempt to move is resulted in intense pain [5]. Our patient had similar presentation as described. Radiologic presentation of luxatio erecta

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