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Bilateral irreducible inferior shoulder dislocation: A case report

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ABSTRACT

INTRODUCTION: Bilateral inferior shoulder dislocation is rare; but the dislocation is almost always reducible by closed means. We present a unique case of irreducible bilateral inferior shoulder dislocation.
PRESENTATION OF CASE: A 35-year old male fell down from height. Direct axial loading while both shoulders were fully abducted resulted in bilateral inferior shoulder dislocation. All attempts of closed reduction failed. Open reduction revealed that the cause of irreducibility was the entrapment of the humeral head in a button-hole through the inferior joint capsule and the surrounding soft tissue envelope. At 6 months, there was almost full range of motion and no pain.
DISCUSSION: The direct axial loading resulted in a narrow defect in the inferior joint capsule/soft tissue envelope; and this may have led to button-hole entrapment of the dislocated humeral head and irreducibility. Open reduction required widening of the button-hole while protecting the axillary neurovascular bundle.
CONCLUSION: We present a rare case of bilateral irreducible inferior shoulder dislocation. We highlight the pathomechanics of irreducibility: button-hole entrapment of the humeral head. We emphasize technical tips during open reduction such as widening of the button-hole and protection of the axillary neurovascular bundle. The outcome is good although some limitation of shoulder abduction is to be expected.

1. Introduction

Among all joints of the body, the shoulder joint allows the widest range of motion, and hence it is considered as the most unstable joint in the body [1]. The most common presentation of traumatic glenohumeral dislocation is unilateral anterior dislocation. Bilateral dislocations are rare, and they usually occur posteriorly following seizures and electroconvulsive therapy [1–3]. The rarest form of shoulder dislocation is bilateral inferior dislocations (also known as bilateral luxatio erecta) [4]. Closed reduction is almost always successful in reducing inferior dislocations [4]. To our knowledge, only one case of irreducible luxatio erecta caused by an aberrant position of the axillary nerve was reported [5].

In this paper, we report on a case of bilateral irreducible luxatio erecta caused by entrapment of the humeral head in a button-hole through the inferior joint capsule and the surrounding soft tissue envelope. The work has been reported in line with the SCARE criteria [6].

2. Presentation of case

A 35-year old previously healthy Egyptian male fell down from 15 m height. The accident was work-related and occurred while fixing windows in a building. At the time of impact on his outstretched hands, both shoulders were fully abducted. The direct axial loading resulted in bilateral luxatio erecta. Initial assessment at the emergency room by the trauma team revealed no concurrent spine or systemic injuries. At the time of presentation, both arms were fixed in abduction. The elbows were flexed, the forearms were pronated, and the hands were above the head. Neurovascular examination of the hands did not reveal any evidence of vascular or brachial plexus injury. Radiographic examination confirmed bilateral inferior dislocation of the shoulders with fracture of the greater tuberosity of the humerus on the left (Fig. 1). Under general anesthesia, attempts of closed reduction using the "traction-countertraction" technique were unsuccessful. We then proceeded to open reduction through the deltopectoral approach. Our vascular surgeon was on stand-by in the operating room. The humeral heads were entrapped in a button-hole through the inferior joint capsule and the surrounding soft tissue envelope. The axillary vessels and axillary nerve were visualized and protected. The button-hole was widened and the surrounding soft tissue around the humeral head was dissected bluntly. Once this was done, reduction was easily obtained using the "traction-

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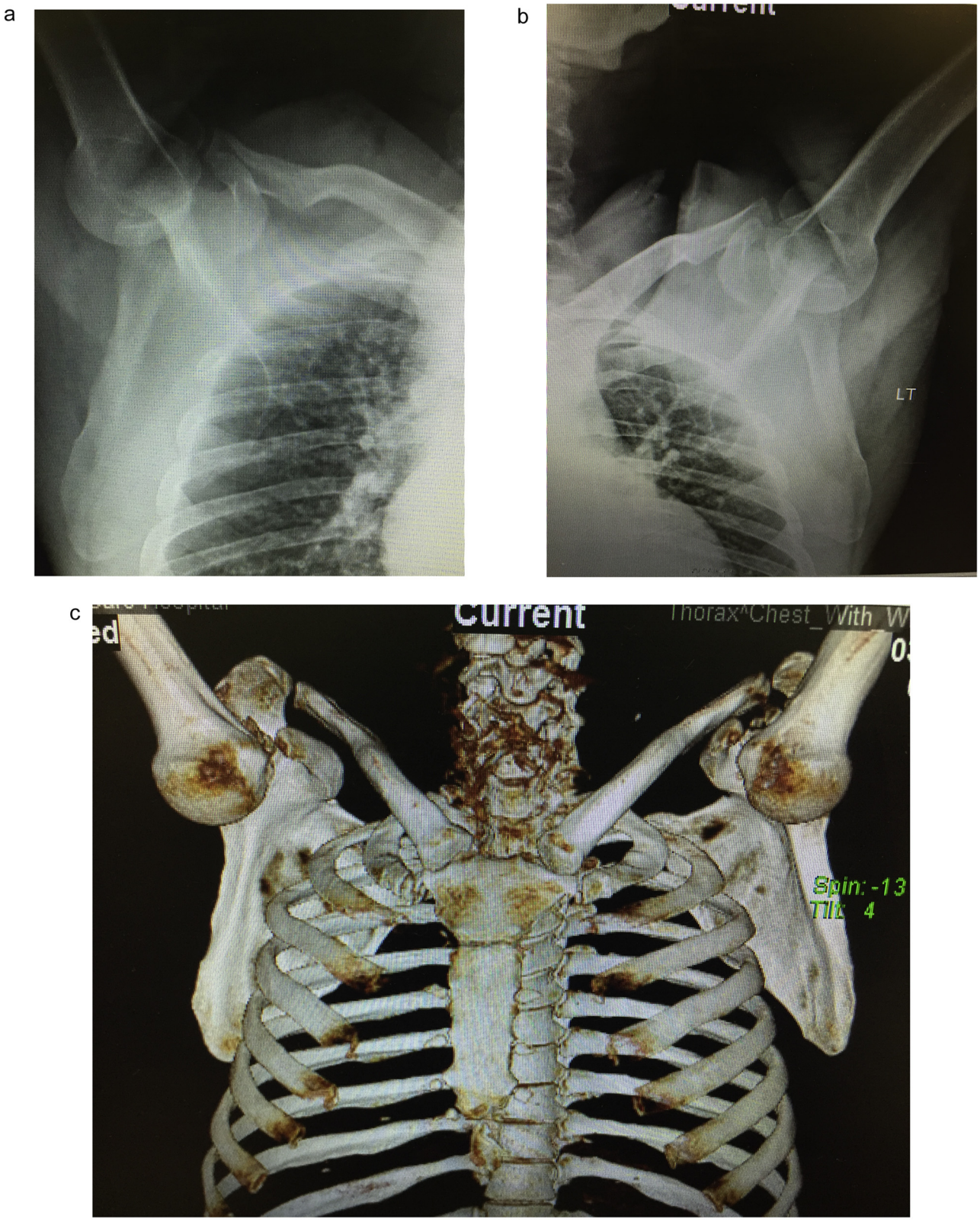

Fig. 1. Pre-operative radiological examination. A, B) Plain x-rays. Note the bilateral dislocation and the classic abduction posture. C) 3D–CT scan.

countertraction" technique. Finally, fixation of the left greater tuberosity fracture was done using 4 cannulated screws (Fig. 2). The post-operative course was uneventful and there was no evidence of any neuro-vascular injury after the reduction. The shoulder was immobilized for 4 weeks in adduction. Passive range of motion was started during the fifth week and active/strengthening exercises were started on the sixth week. Exercises and strengthening were done through regular formal visits to our Rehabilitation Department. The patient returned to work at 3 months. At 6 months, examination showed that both shoulders were stable with pain-