



Bilateral anterior shoulder dislocation and fracture of the humeral neck combined with a large rotator cuff tear on the left side

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Abstract

We present an unusual case of bilateral anterior shoulder dislocation and dislocated fracture of the humeral neck combined with a large rotator cuff tear on the left side following a hypoglycemic convulsion. Operative treatment was performed at the same day with the same operation on both shoulders. At follow-up 15 months post surgery, the patient was able to work and perform routine daily activities without problems. He had no pain at night in the shoulders.

Introduction

Bilateral anterior fracture dislocations of the shoulder are rare. Only a few cases have been reported in the literature [1,2,6,7,9]. The most common mechanisms producing bilateral anterior dislocation or fracture dislocation of the shoulder are violent bilateral traction and sudden muscular contractures, or bilateral deceleration forces associated with trauma [2]. Acute muscular contractions may be produced during seizures, epilepsy or an electric shock.

We describe an unusual case of bilateral anterior shoulder dislocation and dislocated fracture of the humeral neck combined with a large rotator cuff tear on the left side following a convulsion caused by a diabetic hypoglycemia. To our knowledge, this kind has not been previously reported in the literature.

Case report

A diabetic man of 44 years of age, 185 cm of height, and 100 kg of weight suffered convulsion caused by a hypoglycemic shock. Physical examination revealed obvious bilateral dislocations of the shoulders. There was no peripheral sensory, motor or vascular deficit. After the blood sugar level was normalized, radiographic examination could be performed. Radiographs of the shoulders demonstrated an anterior dislocation and a displaced humeral neck fracture on both shoulders (Figure 1).

Closed manipulations under general anaesthesia were unable to reduce the dislocations. So, open reduction was necessary on both sides. Operative treatment was performed at the same day with the same operation on both shoulders. Deltopectoral approach was used. The humeral heads were reduced, and the humeral neck fractures were stabilized with a T-plate (AO). On the left side, there was also a large rotator cuff tear, which was sutured as good as possible. Operation lasted three and half hours.

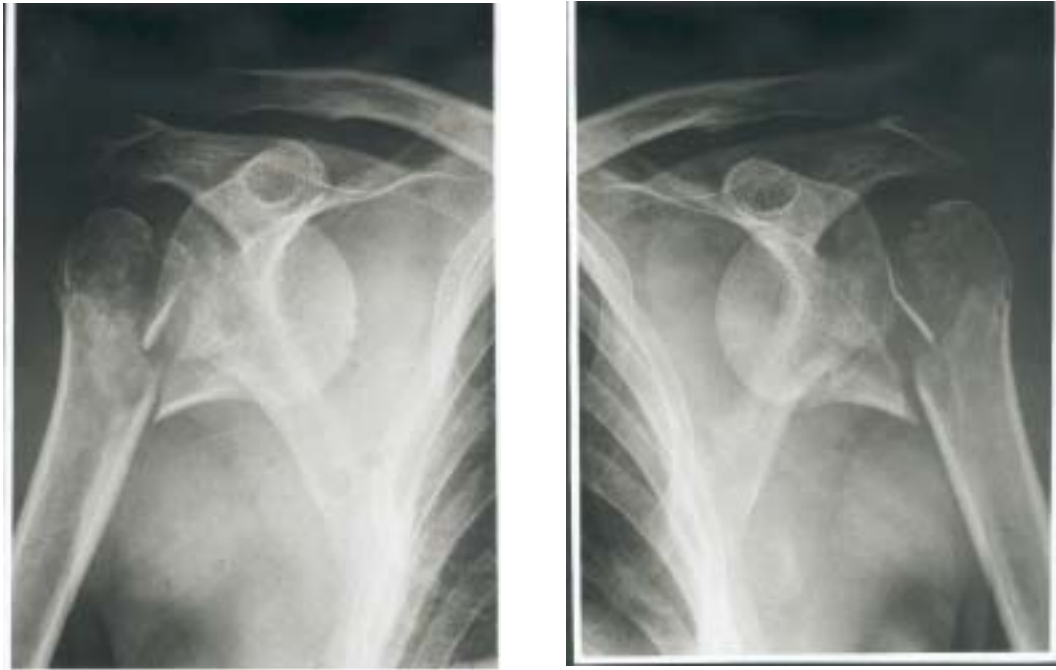


Figure 1.

Anterior view of the right and left shoulder demonstrating bilateral anterior shoulder dislocation and dislocated fracture of the humeral neck.

Postoperatively the shoulders were immobilized using arm slings for three weeks. However, the rehabilitation program was started the first postoperative day with assisted range-of-motion exercises. After six weeks, active muscle exercises (abduction, forward flexion) were started. The patient was able to resume his work, where he had to use his arms, three months after surgery.

At follow-up 15 months after surgery, the patient was able to work and perform routine daily activities without any problems. He had no pain at night in the shoulders. Subjectively, the patient was more satisfied with his right shoulder than his left. On the right shoulder, he had forward flexion of 170° and abduction of 160°. On the left shoulder, the forward flexion was 160°, while the abduction was 150°. The left shoulder was weaker than the right shoulder especially in abduction, and the patient had difficulties in abduction his right arm above 90° because of weakness. Radiographs showed a good fracture union (Figure 2). However, on the left shoulder, the greater tuberosity had displaced and the supraspinatus tendon could not be identified with certainty using ultrasonography.



Figure 2.
Anterior view of the right and left shoulder 15 months after surgery. The greater tuberosity has displaced on the left shoulder.

Discussion

Simultaneous bilateral anterior dislocation of the shoulder occurs rarely and is usually of traumatic origin. Cottias et al. [1] reported recently a case of bilateral anterior shoulder dislocation caused by hypoglycemia-induced convulsion resulting from diabetes, similar to our patient. However, their patient had no humeral neck fractures or rotator cuff tear combined with the anterior shoulder dislocations. In their case, the patient had bilateral fractures of the greater tuberosity and bilateral non-displaced fractures of the tip of coracoid process, and only the right shoulder of the patient was operated.

Usually bilateral fracture-dislocations of the shoulder caused by convulsions due to epilepsy, electric shock or electroconvulsive therapy are posterior [3,5]. This kind of injury is nearly pathognomic for massive contraction of shoulder girdle muscles, as seen during seizures or electric shocks. Kilicogly et al. [5] reported a case, where they had to perform bilateral shoulder hemiarthroplasty for a patient who had a bilateral posterior fracture-dislocation of the shoulder caused by non suspected brain tumor. In their case, the humeral heads of the patient were impacted on both sides so much that shoulder hemiarthroplasty was indicated.

The greater tuberosity is displaced in the approximately 15 % of all anterior dislocations of the shoulder [4]. If greater tuberosity fracture is displaced, the diagnosis of a rotator cuff tear is almost certain. If the greater tuberosity is not reduced anatomically [8] functional impairment can be expected. Our patient had a rotator cuff tear on his left shoulder. Although the tear was primarily reduced and sutured, the greater tuberosity displaced as seen in radiographs taken 15 months after surgery. The supraspinatus tendon was not identified with certainty using ultrasonography. However, our patient was able to work without problem, although some functional impairment was found in his left shoulder.

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