

Bilateral anterior shoulder dislocation

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Abstract

Shoulder dislocations are the most common major joint dislocations encountered in the emergency departments. Bilateral shoulder dislocations are rare and of these, bilateral posterior shoulder dislocations are more prevalent than bilateral anterior shoulder dislocations. Bilateral anterior shoulder dislocation is very rare. We present a case of 24-year-old male who sustained bilateral

anterior shoulder dislocation following minor trauma, with associated greater tuberosity fracture on one side. Prompt closed reduction followed by immobilization in arm sling and subsequent rehabilitation ensured a good outcome.

Key words: *Anterior, bilateral, closed reduction, shoulder dislocation*

INTRODUCTION

Shoulder dislocations are the most common major joint dislocations encountered in the emergency departments. Most common type is anterior dislocation. Bilateral shoulder dislocation is a very rare entity and is almost always posterior. Such dislocations are usually caused by sports injuries, epileptic seizures, electrical shock, or electroconvulsive therapy. However, simultaneous bilateral anterior shoulder dislocation is very rare and usually is of traumatic in origin with only few cases described in literature. Thorough clinical examination of the patient is mandatory in order to ensure that a bilateral dislocation is not missed. The following case report demonstrates a typical bilateral shoulder dislocation as a result of trauma in a 24-year-old male.

CASE REPORT

A 24-year-old man presented to accident and emergency department with complaints of acute shoulder pain involving both shoulders after trying to prevent a fall. He tried to prevent falling backward by extending both arms behind his back. He had no history of seizure, alcohol intake or previous shoulder dislocation. Both shoulders were abducted and externally rotated. Physical examination showed fullness over anterior aspect and bilateral squaring of his shoulders (epaulet sign). Both humeral heads were palpated in the anterior aspect of each joint and there was a global, painful restriction of range of motion in both shoulders, without any evidence of peripheral motor, sensory and vascular deficit.

A clinical diagnosis of bilateral anterior shoulder dislocations with no neurovascular deficit was made. There was no evidence of any generalised ligamentous laxity. Radiographs confirmed bilateral anterior glenohumeral dislocation with greater tuberosity fracture on left side [Figure 1]. Both shoulders were reduced using Kocher's technique under sedation. Reduction of both shoulders was obtained which was confirmed radiologically [Figure 2a and b]. Since the greater tuberosity fracture of left shoulder returned to its anatomical position after reduction, so it was decided to manage the fracture conservatively. Both arms continued to be neurovascularly intact and were armpouch in slings. Right shoulder was immobilized for one week and left shoulder for six weeks.

The patient received physical therapy as tolerated and no further episodes of instability ensued. At follow-up of two months the patient reported no pain and had returned to his

normal activities of daily living with minimal discomfort. Both shoulders had near normal range of motion with pain only present at the extremes of motion. Both shoulders also had negative apprehension tests. Power was 5/5 in both shoulders. Radiographs showed an anatomical consolidation of greater tuberosity fracture of left shoulder joint. At the end of one year follow up, the fracture has united with no restriction of motion and the shoulders were defined as stable.

DISCUSSION

As opposed to unilateral shoulder dislocations, simultaneous bilateral shoulder dislocations are rare occurrences. Bilateral shoulder dislocation was first described in 1902 in patient in whom excessive muscular contractions occurred as a result of Camphor overdose.^[1] Evidence from the literature suggests that they are mostly posterior. Bilateral anterior dislocation however is still rarer. Dinopoulos *et al.*, in 1999 found only 28 reported cases since 1966.^[2] Dunlop *et al.*, reported in 2002 of other cases in the literature, but most were associated with fractures. He also found that of the 44 cases, five were diagnosed late.^[3] Bilateral posterior shoulder dislocations occur mostly due to electrical shock, seizures or hypoglycaemic episodes, and these occur as a sequel of maximal involuntary muscle contractions. The weaker external rotating muscles are overpowered by the stronger internal rotators, resulting in adduction and internal rotation sufficient to dislocate the humeral head posteriorly. Unlike posterior dislocations, anterior dislocations occur more commonly following trauma.

Our patient had minor trauma after falling backwards with his arms extended behind his back. The dislocation mechanism in our case is a protective effort in an unbalanced position both created a typical shoulder dislocation mechanism. This is the first case reported of a patient dislocating both shoulder by this mechanism. Cresswell and Smith reported a case of bilateral anterior dislocation of the shoulder without any fractures in a bench-pressing athlete.^[4] Singh and Kumar reported a case of sequential bilateral anterior dislocation in which the left shoulder dislocated first due to trauma followed by atraumatic dislocation of the right shoulder.^[5] Galois *et al.*, Fung *et al.* and Aufderheide *et al.*, have reported cases of asymmetrical bilateral shoulder dislocations,^[6-8] which are extremely rare. The principles of management are the same as for unilateral dislocations. Early reduction and immobilisation should be followed by definite treatment, which may include active and passive



Figure 1: Radiographs demonstrating the bilateral anterior shoulders dislocation with fracture greater tuberosity left side

physiotherapy or surgery in the younger, more active patient group. This poses obvious problems in the case of bilateral injuries when the patient may require remain in hospital for an extended period. A fracture of the greater tuberosity occurs in approximately 10% of dislocations and is usually associated with the humeral head in a subglenoid, low subcoracoid, or subclavicular position.^[9] In these cases, reduction manoeuvre may depend on the position of the humeral head. The greater tuberosity is displaced in the approximately 15% of all anterior shoulders dislocations of the shoulder.^[10] The diagnosis of a rotator cuff tear is almost sure when the fracture of the greater tuberosity is displaced. Possible rotator cuff tears and other shoulder pathologies should be investigated by magnetic resonance imaging (MRI).^[7] MRI was not used in our cases because of financial constraints and plan of conservative treatment. Functional impairment is commonly seen if the greater tuberosity is not reduced anatomically. In our patient greater tuberosity fragment was anatomically reduced with closed reduction of shoulder joint. He was able to resume his daily activities within two months after trauma.

CONCLUSION

Bilateral anterior shoulder dislocations are the rarest of all shoulder dislocations. It is important to take accurate clinical history, a thorough clinical examination and adequate imaging in order to exclude this injury. This is especially of concern, since the reported rate of late diagnosis is greater than 10%. Fractures, rotator cuff ruptures or neurovascular injuries may accompany such injury. Predisposition to bilateral dislocations may be higher in older age group because of balance problems.

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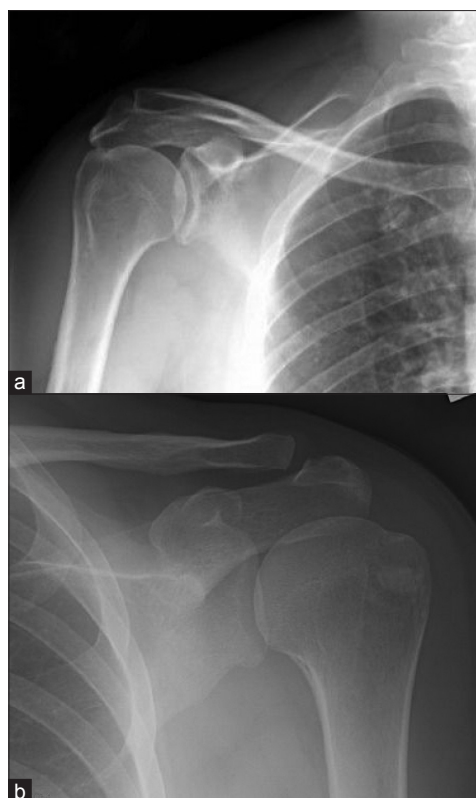


Figure 2: (a and b) Post-reduction X-ray showing congruent reduction of bilateral shoulder joint and anatomically reduced greater tuberosity fracture left side

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