



Simultaneous opposite bilateral fracture dislocation of shoulders after an electrocution

M.Elabdi¹, R. Roukhsi², A.Chagou³ and A. Jaafar¹

¹Department of Orthopedic Surgery, Military Hospital of Instruction Mohammed V, Rabat, Morocco.

²Department of Radiology, Military Hospital Marrakech, Morocco.

³Department of Orthopedic Surgery, University hospital Ibn Sina, Rabat, Morocco.

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ABSTRACT

Bilateral dislocation of the shoulders (anterior or posterior) is a known event after epileptic seizure or electrocution. However this pathology is rare when one side is anterior and the other is posterior. We describe a case of bilateral fracture dislocation of the shoulders after electrocution in a 45 year old woman. Asymmetrical presentation of lesion is exceptional, caused by opposing mechanisms. The diagnosis was made in emergency, and the patient underwent surgical treatment. We review these fracture dislocation types, and we also examine their mechanisms.

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Introduction

Unilateral dislocation of the shoulders is common, with 95% anterior. However, bilateral shoulder dislocation or fracture dislocation (anterior or posterior) are infrequent [1-2]. This injury is often posterior [1, 3], because usually occurred in epileptic seizure, electrocution, or major trauma [1, 4-6]. Bilateral fracture dislocation in opposite directions is an exceptional entity [3, 7-8]. In our knowledge, few cases have been reported in the literature, for this reason, this present observation is an interesting topic.

We describe an unusual case of simultaneous anterior and posterior bilateral shoulder fracture dislocation following an electrocution in a 45 year old woman.



Figure 1. Right and left shoulder anteroposterior radiograph at admission

Case report

A 45 year old woman, without significant medical history, was admitted to emergency in April 2011 after undergoing an electric shock when she held an electric cable with her right hand during housework; the patient fell, then she tried to remove the cable with the other hand, suddenly, she felt the current traveling its upper extremities. Her husband cut the current

down. Since then, she was having pain and restriction of movements in both shoulders.

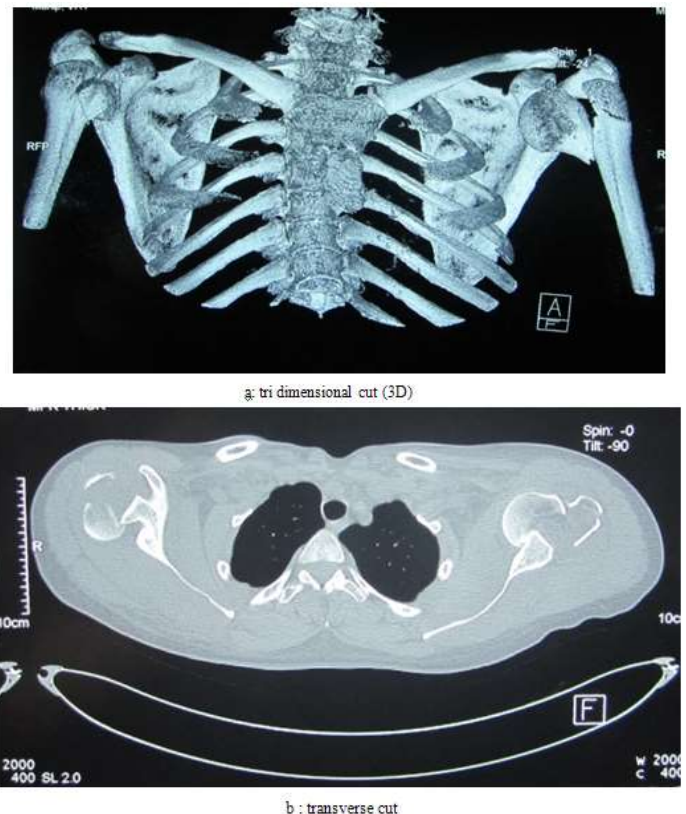


Figure 2. Computed tomography scan (transverse cut, and 3D cut) shows Opposite-direction bilateral fracture dislocation of the shoulders (posterior to the right; anterior to the left)

Physical examination on admission revealed deformity with obvious lack of normal contour of both shoulders, and any motion of arms was causing severe pain. There was no neurovascular deficit. Radiography (Fig 1), completed by

tomography (CT) scan (Fig 2) of the shoulders, showed a posterior fracture dislocation of the right shoulder and an anterior fracture dislocation of the left one. The patient was treated with open reduction and internal fixation through a deltopectoral approach using two screwed plates (Fig 3).

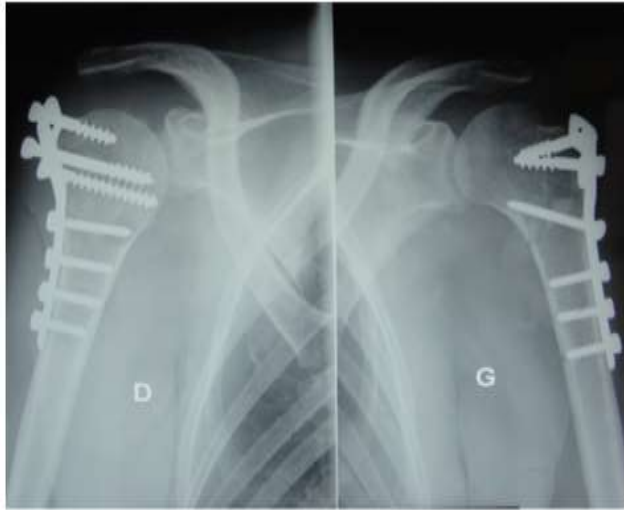


Figure 3. Both shoulders were reduced and fixed with screwed plates via open surgery



Figure 4. Mobility of both shoulders after three months
The right shoulder (a): reduced movements; the left shoulder (b, c, d): proper recovery.

The shoulders were kept immobilized for 3 weeks until the removal of the wires, followed by physiotherapy. Then progressive and controlled mobilization was started with pendulum exercises, electric stimulation and muscle reeducation. The patient had a comfortable range of motion in left shoulder; however, she reported pain in the right shoulder with poor recovery of function (Fig 4). The material was removed after 4 months on the right side (Fig 5).

Discussion

The shoulder Bilateral fracture dislocation is a rare injury which occurs in two forms: anterior or posterior. These clinical features tend to be symmetrical [4]. The triple E syndrome described by Blackstore and Al defines the main etiological

factors (epilepsy, electric shock and major trauma) [5]. Our case represents an exceptional entity, as it combines the two varieties at a time [3, 7-8], which are caused by opposite mechanisms. During electrocution, typical mechanism is a forced mechanism, which results in a fracture dislocated, or a dislocation that can be complicated to impaction fracture. Probably our patient, was holding the cable with his right hand, arm flexed, adducted and internally rotated, what has produced a posterior dislocation with displaced Cephalo-tuberosity fracture secondary to reverse Hill-Sachs lesion where there is anterior humeral notch.. The left side, arm was extended, abducted and externally rotated, what has caused a cephalo-metaphyseal fracture which is anteriorly dislocated. This fracture is the result of impingement of the postero-superior face of the humeral head against the inferior edge of the glenoid.



Figure 5. Radiological control after removal of material to the right

This gives a Hill-Sachs lesion with a posterior humeral notch. [1, 7, 9-10]. Rare cases have been reported in the literature, thus some authors have reported that the direction of the dislocation is related to the position of the arm relative to the torso [7, 11-13]. The anterior variety is clinically remarkable, allowing an easy and early diagnosis; but the posterior variety can be unnoticed, the diagnosis is going to be delayed. In this case, the scanner is interesting [1, 3, 6-7, 12, 14].

The treatment depends on the patient (age, medical status) and injury (articular defect degree, and associated lesions). [1, 6, 14]

Conflict of interest

None

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