



## Case report

# Bilateral posterior fracture-dislocation of the shoulder after epileptic seizures: A case report.

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## Introduction:

Bilateral shoulder dislocation is a rare entity usually caused by sports injuries, electrical shock, or electroconvulsive therapy. Epileptic seizures account in less than 2% of cases [1]. Almost always posterior, bilateral shoulder dislocation is usually due to unbalanced tonic muscles contraction and may be associated with fracture of the upper end of the humerus [2]. The diagnosis is made by pertinent clinical examination and appropriate standard X ray requests and may easily be missed. Delayed management may lead to irreversible sequelae. We report a case of 46-year-old male who sustained bilateral posterior shoulder fracture-dislocation following epileptic seizures. The aim is to highlight diagnosis circumstances and the results of the management.

## Case presentation:

A 46-year-old man was admitted to the department of neurology for disability of both upper limbs. The patient was complaining of severe pain and inability to move both arms. His history revealed an episode of long generalized epileptic seizure happened 45 days ago. Initial physical examination, revealed severely restricted motion on both shoulders and normal neurologic status. Standard X-ray revealed fractures of the right upper end of the humerus with posterior bilateral dislocation (Figure1). CT scan ruled out glenoid injuries in both shoulders but revealed a porencephalic cavity of left parietal lobe in the brain study. Pain was relieved, and carbamazepine 500mg twice daily was initiated. Bilateral Close reduction was first performed. The patient underwent surgical treatment according to Mc Laughlin technique few days later.

Both arms were immobilized for one month in a broad arm sling. A progressive active and passive physiotherapy was started with pendulum exercises, forward flexion and abduction. A physiotherapy program of muscle re-enforcement program was carried for the next 4 weeks. The recovery was uneventful. The follow up at six months showed full recovery of the motility and the absence of any recurrence. The X-ray of shoulders showed a complete healing. (Figure 2).

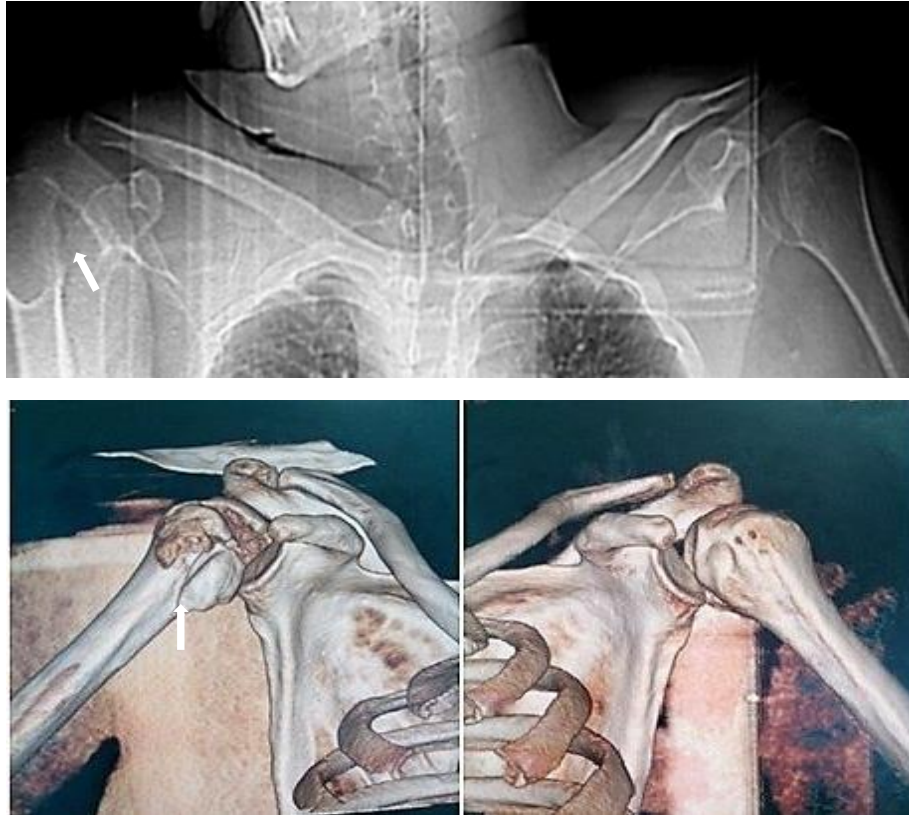


Figure1: fracture of the right upper end of the humerus with posterior bilateral dislocation



Figure 2: treatment result followed up at 6 months

## **Discussion:**

Posterior shoulder dislocations are usually seen in high-energy trauma. Epileptic seizures, electrocution, and electroconvulsive therapy were rarely described as unique cause. Bilateral involvement caused by generalized tonic seizures was always described in previously known epileptic patient [3]. The mechanism of shoulder injury during a seizure involves a violent contraction of the medial rotator muscles which remain unbalanced by the lateral rotator's forces. Posterior fracture-dislocation is usually due to an increased stress on the notched anatomical neck against the glenoid during long contractions [4,5]. Different kinds of fractures have been described in association with shoulder dislocation. However, there is no specific classification available [6]. Posterior dislocation of the shoulder is initially misdiagnosed in 50 to 80% of cases. Patients usually have enough motion and minimally palpable humeral displacement. This leads the clinician for inappropriate imaging request and decrease the chance to confound the dislocation diagnosis. However, a careful clinical examination should always suspect it for known mechanisms using dedicated shoulder protocol with high suspicion index [7,8].

The inspection of a patient with shoulder posterior dislocation reveals a prominent coracoid and anterior glenohumeral void caused by the posterior position of the humeral head. The examination of the shoulder shows a limitation in the range of motion respecting passive external rotation and abduction due to the impaction humeral head against the posterior glenoid rim [9]. Posterior dislocation may be missed initially on conventional frontal radiographs in 50% of cases, as the humeral head could appear normally aligned with the glenoid. An axillary view is a preferred view for diagnosis. Alternatively, a Velpeau, Wallace or scapular Y views can be useful [10-12]. Cross-sectional imaging (CT or MRI) is often used to assess articular surface injuries (reverse Hill-Sachs lesion), glenoid injuries (reverse Bankart lesion) or ligamentous injuries. This assessment is mandatory before surgical management [13]. The diagnosis delay leads to increased morbidity. Posterior dislocation usually produces an impression fracture on the anterior aspect of the humeral head. The fracture can propagate and damage the articular cartilage. This may lead to and eventual from impaired blood flow to the humeral head can lead to osteoarthritis and avascular necrosis of the humeral head. Only early diagnosis can reduce the risk of these complications [14]. Our patient had none despite late management. Treatment options are various. The indication depends on several factors. The age of the patient, the size of the humeral head defect, unilateral or bilateral nature, the degree of instability and the duration of dislocation are important factors to consider before the decision. Treatment modalities include rotational osteotomy of the proximal humerus, transposition of the subscapularis tendon or the lesser tuberosity into the defect, or bone grafting. Shoulder arthroplasty should be reserved for large defects and neglected dislocations [15-17].

## **Conclusion:**

Our patient is another case of missed bilateral shoulders fracture-dislocation. He was treated with modified McLaughlin Procedure and physiotherapy. This technique consists of transplanting the lesser tuberosity with the attached subscapularis tendon into the anteromedial defect. This technique It provided a good stability, immediate active motion restoration, and allowed a quick socio-professional reinsertion.

## **Conflict of interest:** none

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