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Case Report

Bilateral posterior fracture-dislocation of the shoulder after epileptic seizure

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ABSTRACT

We present a case of a 61 year-old woman who suffered a bilateral posterior fracture-dislocation of the shoulder after an isolated episode of epileptic seizure. The patient was diagnosed at our Emergency department with x-rays and CT scans after being found unconscious. An indication for bilateral shoulder hemiprosthesis implant was initially given. However, given the peculiar pattern of the fracture, the hemiprosthesis was implanted on one side only, while the other side was treated with ORIF with four cannulated screws. After the one year, the patient had resumed her previous activities and had no complaints. We performed a review of similar cases in literature and provided a rationale for our choice of treatment and the reasons for its success.

Background

Bilateral posterior glenohumeral fracture-dislocation is an extremely rare clinical entity, accounting for a small minority of shoulder dislocations. Proposed etiologic mechanisms of injury include epileptic seizure, electrocution, or extreme trauma. Diagnosis of posterior gleno-humeral dislocation and fracture-dislocation is often challenging and thus frequently missed in the emergency setting [1,2]. In light of the above, prompt diagnosis and adequate treatment are needed in order to best restore shoulder function.

We present a case of bilateral posterior fracture-dislocation of the shoulder after an episode of epileptic seizure, after which the patients was immediately transported to our Emergency Department. Diagnostic work-up, treatment plan, outcome and a final discussion are also presented.

Case presentation

A 61-year-old overweight female of Ukranian descent was admitted to the Emergency Department of the Umberto I hospital in Rome, Italy, after an isolated episode of tonic-clonic seizure while working as a cleaner. Past medical history was relevant for hypertension, cholecystectomy and appendectomy. No previous episodes of seizure were reported by the patient or the patient's family members. Upon arrival, the patient appears unresponsive, but is breathing spontaneously and displays biting marks on her tongue (Fig. 1). No focal neurological deficits are noted. Further workup includes Complete Blood Count (within normal limits), myoglobin (557 ng/mL), creatinine phosphokinase (2258 UI/L), Lactate Dehydrogenase (296 UI/L), creatinine kinase MB isoenzyme (7.6 ng/mL). Chest and brain CT scans, EEG, EKG and ABG are also requested and no abnormalities are noted by the attending

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Fig. 1. Clinical picture upon arrival. Note the biting marks on the patient's tongue and the absence of signs of direct trauma to either shoulder.

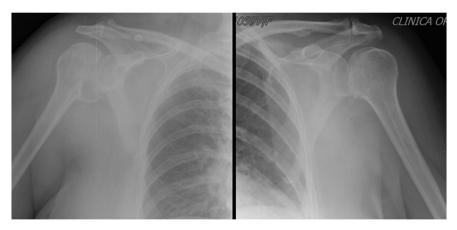


Fig. 2. Emergency department X-ray in AP view.

neurologist. A traumatology assessment and workup reveals a right humeral head fracture (Fig. 2), for which a surgical indication is proposed. Further work up incudes CT scans of both shoulders (Figs. 3 and 4), highlighting the presence of a bilateral posterior fracture-dislocation: the left humeral head appears to have "collapsed" in an inward fashion, probably as a result of the muscle spasm and the simultaneous impact against the glenoid cavity, while the contralateral one appears to have a longitudinal cleft along the humeral head. The patient is then put in a Gilchrist immobilizer bilaterally and, once general conditions allow, transferred to the Traumatology department. During her stay, a new neurological consultation is performed and suggests the nature of the patient's fractures being due to the generalized muscular spasm experienced during the seizure. In light of the above, plain and Gd-enhanced brain MRIs and a polygraphic EEG are requested to further study the patient's conditions from the neurological standpoint: while the latter shows no abnormality, the former highlights several zones of high intensity signals in the white matter of the periventricular area and semioval centres, which is deemed compatible with chronic multi-infarct leukoencephalopathy, therefore ASA is added to her treatment regimen. The presence of an already known left parasagittal calcification is confirmed as well. A cardiology consultation also follows, with a request for Holter 24-hour test, which shows no abnormalities, and a sonographic examination of the heart and epiaortic vessels, which only displays a minimal quantity of pericardial fluid. These tests lead to the final neurologic

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