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Case Report

Bilateral spontaneous anterior shoulder dislocation: A missed orthopedic injury mistaken as proximal neuropathy

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ABSTRACT

A number of orthopedic injuries can occur during epileptic seizures. Anterior shoulder dislocation is one such orthopedic injury that is quite rare. The shoulder dislocation may injure the brachial plexus. Besides seizures, the nerves can also be damaged by anticonvulsive therapy. Muscle wasting following a seizure can misguide a clinician to investigate only neural or muscular pathologies. We report here an individual with epilepsy who was referred to us for electrodiagnostic evaluation of proximal muscle wasting related to a suspected proximal neuropathy. He was found to have a normal electrodiagnostic evaluation and later on discovered to have had bilateral shoulder dislocation on X-rays. This report advocates a thorough clinical appraisal, radiographs, and electrodiagnostic evaluation in a case with muscle wasting following a seizure.

Introduction

Orthopedic injuries can occur during epileptic seizures.[1] Fractures and/or dislocations of the shoulder,[2–6] skull,[7] humerus,[6] femur,[8] acetabulum,[8,9] and vertebrae[9,10] have been described in the literatures. In fact, the risk of fracture doubles with epilepsy, resulting either directly from seizure-induced injury or indirectly through drug-induced bone demineralization.[1] Bilateral anterior shoulder dislocation during seizures is very rarely reported.[2,3] The shoulder dislocation can cause injury to a part or whole of brachial plexus.[11,12] Apart from mechanical trauma, the nerves can also be damaged by anticonvulsive therapy used to control seizures.[13] Muscle wasting following an injury can direct a clinician to explore only a neural or muscular etiology. We report here an individual with epilepsy who was referred to us for electrodiagnostic evaluation of proximal muscle wasting related to a suspected proximal neuropathy. He was found to have a normal electrodiagnostic evaluation and later on discovered to have had bilateral shoulder dislocation.

Case report

A 20 years old male, a known epileptic, was presented with a nine-month history of progressive weakness of arms and difficulty performing overhead activities following an epileptic seizure. His examination revealed wasting of proximal arm muscles (Fig. 1). Both active and passive ranges of motion (ROM) in internal rotation, flexion, and adduction in shoulders were restricted. The muscle stretch reflexed in the upper limbs were normal.

His electrodiagnostic evaluation revealed normal sensory and motor studies and normal electromyography of the sampled muscles. His magnetic resonance imaging of the cervical spine and brain was normal. The X-rays of the shoulders (Fig. 2) performed after electrodiagnostic evaluation revealed bilateral anterior dislocation of shoulders. He was therefore referred to an orthopedic surgeon for treatment of bilateral dislocation of the shoulders. The patient underwent open reduction of both shoulders through modified Bankart procedure. After reduction, the shoulders were immobilized in slings for three weeks. Ranges of motion exercises were started after three weeks. Subsequent follow-up at five months showed good improvement in ROM in both shoulder joints with no recurrent dislocation.

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Fig. 1. Muscle wasting of proximal arm muscles bilaterally.

Fig. 2. Anterior dislocation of right and left shoulder joints.

Discussion

Posterior shoulder dislocation is the most common type of shoulder dislocation following an epileptiform seizure.[5,6] The mechanism of such dislocation is axial loading of internally rotated and adducted arm due to violent muscular contractions during a seizure. Bilateral anterior shoulder dislocation is very rare because it requires an adequate synchronous and simultaneous force.[3] It occurs due to trauma rather than muscular contractions, and has a high incidence of recurrence. Irrespective of etiology, the closed reduction can be attempted during initial six weeks after which operative management is the treatment of choice due to increased possibility of iatrogenic fractures and neurovascular damage.[4,11] The muscle wasting due to disuse may result in severe functional limitation and may mimic proximal neuropathy or myopathy. A thorough clinical evaluation, radiographs, and electrodiagnostic evaluation are required to reach a final diagnosis. Timely referral of these patients should be considered for shoulder reconstruction to obtain stability and better functional outcome.

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