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Musculoskeletal

An unusual case of bilateral anterior shoulder dislocations

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ABSTRACT

A 23-year-old man was transported to a trauma center after injuring himself while snowboarding. He presented with bilateral shoulder pain and associated deformity to both shoulders. His exam was otherwise unremarkable, and his x-rays confirmed bilateral shoulder dislocations. Cunningham and external rotation without sedation and analgesia techniques were unsuccessful even with local anesthesia to the joint. Subsequent bilateral reduction was successful with moderate sedation using the Milch technique. Simultaneous anterior bilateral shoulder dislocations are rare and providers may need to adjust their techniques to accommodate this unusual presentation.

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Introduction

The glenohumeral joint is the most frequently dislocated joint in the body [1,2]. The large majority of these shoulder dislocations are anterior dislocations and involve only a single shoulder [2–4]. Cases of bilateral shoulder dislocations are rare and, when they do occur, are mostly posterior in nature; such bilateral posterior shoulder dislocations are typically caused by epileptic seizures, electrocution, or traumatic injury [4–6]. Bilateral anterior shoulder dislocation presents through a bimodal distribution, affecting mainly young men (70%) with a mean age of 33.5 years and middle-aged women with an average of 57 years [7]. This report presents the case of a patient who demonstrated a bilateral anterior shoulder dislocation injury secondary to a snowboarding accident.

Case report

A 23-year-old right-hand dominant man was transported approximately 45 minutes by emergency medical service to a level 1 trauma center after injuring himself while snowboarding. He presented to the emergency department with a chief complaint of bilateral shoulder pain with associated deformity to both shoulders. He reported the injury occurred when he went off a jump and landed with both arms extended. He did not report any other past medical history. Emergency medical service had initiated intravenous access and provided 100 mcg of IV fentanyl to moderate his pain during transport.

The patient's physical examination showed a blood pressure of 158/69 mm Hg (measured on the left leg and with the patient lying on the bed), a pulse of 75 beats/min, a respiration

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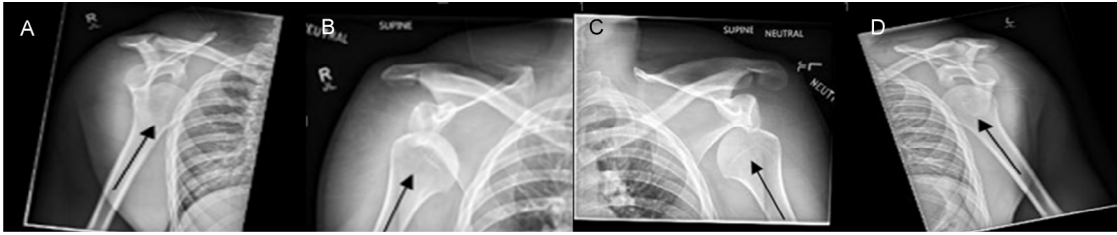


Fig. 1 – Prereduction. Arrows indicate the anterior dislocation of the shoulders. (A) Right scapular Y view. (B) Right supine neutral view. (C) Left supine neutral view. (D) Left scapular Y view.

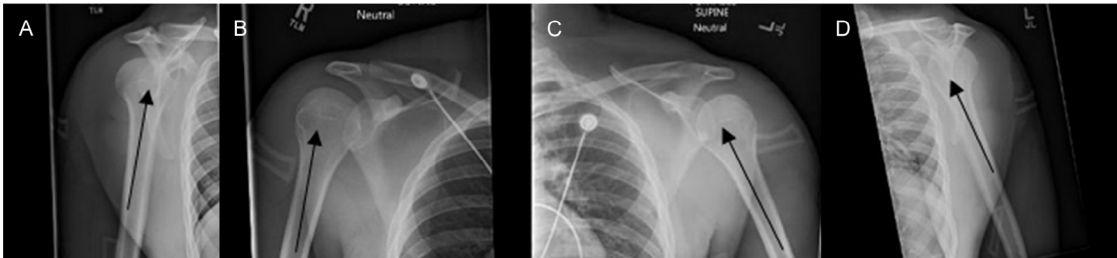


Fig. 2 – Post reduction. Arrows indicate realignment of the shoulders. (A) Right scapular Y view. (B) Right supine neutral view. (C) Left supine neutral view. (D) Left scapular Y view.

of 16 breaths/min, an SpO₂ of 99% on room air, and a temperature of 37.4°C (99.4°F). The patient was alert, appeared well developed and well nourished, and in moderate discomfort. He exhibited an obvious deformity of both shoulders, and the neurovascular status of the involved extremities was intact. The remainder of his exam was normal.

The patient was administered an additional IV fentanyl for his pain. An attempt at Cunningham shoulder reduction was unsuccessful, and the patient was still in significant pain. His x-ray revealed bilateral anterior shoulder dislocations without fracture (Fig. 1). An intra-articular injection using lidocaine (1% without epinephrine) was attempted on the left shoulder, but this additional anesthesia did not allow for relaxation enough for a successful reduction. Moderate (conscious) sedation was subsequently performed using etomidate, and both shoulders were reduced using the Milch technique and scapular manipulation without complications. Postreduction radiographs showed a successful reduction of the patient's bilateral anterior shoulder dislocations (Fig. 2). The patient was neurovascularly intact post reduction and was discharged to outpatient follow-up with orthopedics.

Discussion

Bilateral anterior shoulder dislocations are even rarer than posterior bilateral dislocations, are usually of traumatic origin (50%), and are rarely documented in the literature [5–8]. Ballesteros et al. report that after trauma, the most common etiology is muscle contractions (37%) due to seizures of different causes (epileptic, hypoglycemic, toxic, or hypoxic) [7]. Both primary care and emergency physicians should be aware of this because additionally, general medical conditions, including myasthe-

nia gravis, cerebral palsy, and scapular myopathy, can apparently lead to spontaneous dislocation of both shoulders [7,9].

We present a case of traumatic induced bilateral anterior shoulder dislocation. The nature of the injury precludes a commonly preferred prone scapular manipulation approach to reduction. In this case, providers attempted to reduce at least 1 shoulder (unsuccessfully) by the Cunningham technique so the patient could be moved to a prone position for an easier scapular manipulation. It has been reported that the external rotation without sedation and analgesia method may be the first choice for reduction, allowing for a significant decrease in the length of stay of patients in the ED, and male patients are recognized as particularly suitable candidates for this approach [10]. Ultimately, this approach was also unsuccessful and moderate sedation with etomidate was necessary. Providers encountering this rare presentation may need to adjust their approach to reduction accordingly.

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