

A Patient With Both Luxatio Erecta and an Anterior Shoulder Dislocation

Robert N. Reddix, Jr., MD, and William P. Hamilton, MD

A woman in her late 60s presented to the emergency department after taking a fall while visiting in a nursing home. She had been walking with a pitcher of water in each hand when she tripped, fell forward, unsuccessfully tried to grasp a chair with her left hand, and landed directly on her right shoulder. Emergency medical services transported her to the emergency department for treatment.

Past medical history was significant for reflux, osteoarthritis in multiple joints, atrial dysrhythmia, and an acute myocardial infarction that required cardiac catheterization about 3 weeks before her presentation. Daily medications were warfarin, aspirin, rabeprazole, simvastatin, captopril, amlodipine, amiodarone, and digoxin.

On physical examination, the patient held her left upper extremity in approximately 170° of abduction. The right shoulder had an anterior prominence and was held in internal rotation and adduction. The patient denied numbness in the axillary nerve sensory distribution bilaterally. She had radial, median, and ulnar nerve motor function in the wrist and hand bilaterally as well as normal sensory function in both extremities for these same nerves. She had 2+ radial and ulnar pulses bilaterally.

Plain x-rays confirmed a left inferior shoulder dislocation (luxatio erecta) and a right anterior shoulder dislocation. The patient was given intravenous (IV) midazolam and fentanyl as conscious sedation, and then gentle inline traction was used to reduce each shoulder. The reductions were confirmed with x-rays, and the patient was scheduled for follow-up in the orthopedic surgery clinic. On initial

follow-up there, the patient was found to have bilateral shoulder pain and reduced range of motion. Further evaluation by bilateral shoulder magnetic resonance imaging and bilateral shoulder electromyography identified a left rotator cuff tear of the supraspinatus and infraspinatus (required operative repair) and a left axillary nerve palsy. On the right side were a complete rotator cuff tear of the supraspinatus and a Hill-Sachs lesion, but these responded to physical therapy with return of function.

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DISCUSSION

Bilateral dislocation of the shoulder is uncommon. When it is associated with trauma, the patient is usually young.¹⁻³ Most of the cases of bilateral dislocation by traumatic injury that are cited in the literature are anterior, have neurologic sequelae via brachial plexus injury, and require operative intervention at some point in their postinjury care.⁴⁻⁵

Numerous mechanisms can produce a bilateral dislocation. Unlike our patient, who was involved in a unique sequence of events, most patients experience forces acting on both shoulders simultaneously.⁴ Traction has been cited as a possible force.^{2,6} Other possible mechanisms are a fall with shoulders in fixed extension, abduction, and internal rotation and forced hyperabduction with the acromion acting as a fulcrum to lever the humeral head from the joint.³

On its own, inferior shoulder dislocation (luxatio erecta) is a rare injury, occurring in less than 0.1% of shoulder dislocations, and the mechanism usually involves hyperabduction of the arm at the shoulder with extension at the elbow with the forearm pronated. The inferior portion of the glenohumeral capsule is disrupted, and inferior dislocation occurs.

In most cases, successful treatment involves closed reduction under general anesthesia or IV sedation. A combination of traction and countertraction is the preferred method, according to the literature.^{7,8}

Associated injuries, which are common, include disruption of rotator cuff musculature and fractures of the clavicle, coracoid, acromion, inferior glenoid, and greater tuberosity of the humerus. Neurovascular compromise

Dr. Reddix is Assistant Professor of Orthopaedic Surgery and Director of Orthopaedic Trauma, John Peter Smith Hospital and the University of North Texas Health Science Center, Fort Worth, Texas. He was Orthopedic Surgery Resident, Scott & White Memorial Hospital, Temple, Texas, at the time the article was written.

Dr. Hamilton is Assistant Professor of Orthopaedic Surgery and Sports Medicine, Department of Orthopedic Surgery, Scott & White Memorial Hospital and Clinic, Temple, Texas; Scott, Sherwood, & Brindley Foundation, Temple, Texas; and Center College of Medicine, Texas A&M University System Health Science, Temple, Texas.

Address correspondence to: Robert N. Reddix, Jr., MD, Department of Orthopedic Surgery, John Peter Smith Hospital, 1500 South Main Street, Fort Worth, Texas 76104 (tel, 817-827-1370; fax, 817-927-3955; e-mail, rreddix@jpshealth.org).

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of the brachial plexus and the axillary artery has been described.^{7,9,10} Although 60% of patients in the largest series manifested neurologic injury on presentation, such a deficit usually resolves rapidly.⁸ Although only 3.3% of these cases are complicated by vascular injury, this complication occurs much more often than with other types of shoulder dislocation.⁸

The prognosis for isolated luxatio erecta is usually good. Recurrent dislocation is rare, though persistent restricted range of motion in the form of adhesive capsulitis has been described.^{7,11}

Unilateral anterior shoulder dislocation is not as rare, compromising 95% of joint dislocations.^{12,13} Traumatic anterior shoulder dislocations can be associated with many pathologic lesions, including:

- capsular avulsion
- Bankart lesions
- eburnation or fracture of the anterior glenoid
- compression fracture of the humeral head
- musculotendinous rupture
- greater tuberosity fracture.¹²⁻¹⁶

The mechanism for anterior shoulder dislocation is impingement of the greater tuberosity against the acromion resulting from extreme abnormal motion and subsequent levering of the humeral head out of the glenoid.

Many closed methods have been successfully used to reduce these injuries. Closed reduction using the traction-countertraction method with general anesthesia or IV sedation is usually successful (and was preferred by Rockwood¹⁷).

The most common sequela of primary anterior dislocations is recurrence. However, the recurrence rate decreases steadily with age, and, in cohorts in our patient's age group, the rate is commonly zero.¹⁸

AUTHORS' DISCLOSURE STATEMENT

The authors report no actual or potential conflict of interest in relation to this article.

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This paper will be judged for the Resident Writer's Award.
