



Intraoperative anterior shoulder dislocation during ulnar nerve transposition: a case report

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Patients with a history of shoulder instability or replacement are at risk for shoulder dislocation during common elbow and hand procedures. We present a case report of a 37-year-old man with a history of shoulder instability who sustained an intraoperative anterior shoulder dislocation during an ulnar nerve decompression and transposition. Upper extremity surgeons should be cognizant that these patients are vulnerable to dislocation in the operating room and may have to adjust anesthesia, positioning, and perioperative care.

Case report

The patient presented regarding left ring and small finger paresthesias and a “popping” sensation at the medial elbow. He was diagnosed with cubital tunnel syndrome and underwent surgical decompression and epicondylectomy 6 months prior at an outside institution. Physical examination demonstrated a well-healed surgical incision at the medial elbow and instability of the ulnar nerve. Electrodiagnostic studies revealed ongoing ulnar neuropathy, and ultrasound confirmed anterior subluxation of the ulnar nerve with elbow flexion.

The patient had a history of shoulder instability dating to an initial traumatic dislocation event in 2002 during a football injury. He dislocated a second time in 2003 while

in the army. There were multiple subsequent dislocations, which were self-reduced. He ultimately underwent an arthroscopic Bankart repair in 2003. In spite of this, he continued to have instability, dislocating in 2008 and 2011, after an altercation and a motor vehicle accident, respectively. He reported no subsequent surgical stabilizations and underwent physical therapy and avoidance of placing the arm in abduction and external rotation. He reported no other episodes of instability since 2011.

The patient underwent outpatient ulnar nerve neurolysis and transposition. The patient received monitored anesthesia care as well as local anesthetic injection. He was placed in the supine position on a stretcher with the left arm extended on a hand table. He was prepped and draped in a standard fashion using a nonsterile tourniquet on the arm and supporting the proximal arm in a rubber extremity bump for prepping. The arm was held in abduction and external rotation for the procedure to access the medial elbow. The incision was dressed in a soft dressing with no further immobilization of the arm. There were no complications during the case, and the duration the arm was in abduction and external rotation was approximately 30 minutes.

In the postoperative anesthesia recovery unit, he reported feeling mild left shoulder pain, but was discharged home. He presented to a local emergency department later that evening with continued shoulder pain and concern for dislocation. X-rays confirmed an anterior glenohumeral joint dislocation, which was reduced (Figs. 1-3). A magnetic resonance imaging of the shoulder showed anterior inferior glenoid bone loss with labral tear or deficiency in that area and a large Hill-Sachs lesion with edema

No institutional review board approval was required for this case report.

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Figure 1 Anteroposterior X-ray of the left shoulder demonstrating anterior glenohumeral joint dislocation.



Figure 3 Scapular Y X-ray of the left shoulder, postreduction, demonstrating reduced glenohumeral joint.

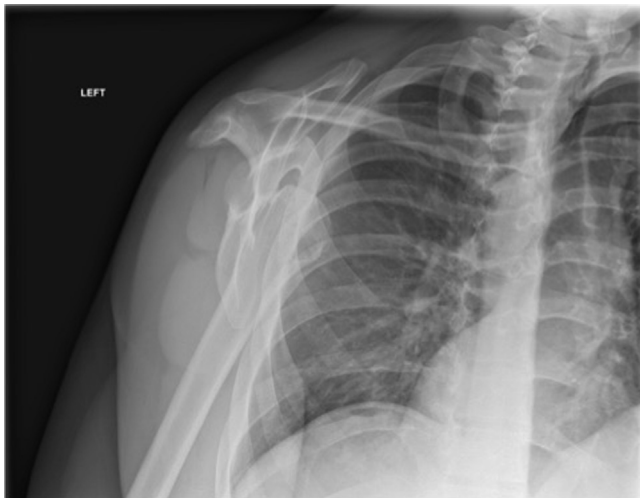


Figure 2 Scapular Y X-ray of the left shoulder demonstrating anterior glenohumeral joint dislocation.

(Figs. 4 and 5). Follow-up with a shoulder surgeon demonstrated normal passive and active range of motion of the shoulder and positive apprehension. Nonoperative treatment with physical therapy was recommended. He was seen for routine follow-up in hand clinic 8 days and then 4 weeks postoperatively and reported improving hand symptoms and no pain in the shoulder.

Discussion

Patients who undergo shoulder surgery are at risk for developing postoperative problems in the ipsilateral hand and elbow. Distal peripheral neuropathy is a reported complication after shoulder surgery. Thomasson et al³ reported that distal peripheral neuropathy was diagnosed in 7.1%, 12.3%, and 2.79% of patients who underwent total shoulder arthroplasty, reverse shoulder arthroplasty, and arthroscopic rotator cuff repair, respectively. Cubital tunnel syndrome was the most common neuropathy after total shoulder arthroplasty and reverse shoulder arthroplasty, with 16.7% and 14.3% of patients requiring surgical decompression, respectively.³ Complications of the hand and fingers, including cubital tunnel syndrome, carpal tunnel syndrome, and flexor tenosynovitis, have been reported in 29% of patients who underwent rotator cuff repair.¹ Therefore, patients who undergo shoulder surgery are at risk for requiring hand or elbow surgery.

Arm positioning during ulnar nerve surgery generally requires that the shoulder be placed in abduction and external rotation. Therefore, the shoulder is in a vulnerable position for anterior dislocation in those patients who have a history of instability. In addition to positioning, placing the arm on a bump for the sterile preparation of the arm places the shoulder in abduction and applies an anterior translational force at the proximal humerus. Also, lowering the height of the operating room table, while the hand table

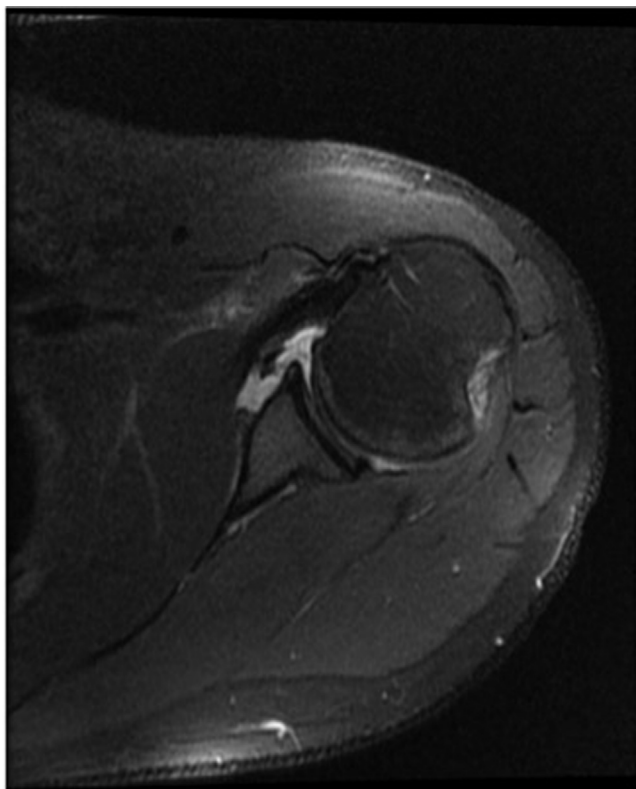


Figure 4 Axial cut of a magnetic resonance imaging of the left shoulder demonstrating a Hill-Sachs lesion with edema.

stays at the same height, will also create an anteriorly directed force on the proximal humerus. In spite of these risk factors, we did not identify any other reports in the literature describing shoulder dislocation associated with surgical hand or elbow procedures.

On the basis of this case, we feel it is important to obtain a history of ipsilateral shoulder instability so that positioning during ulnar nerve surgery can be modified if necessary. A patient with a history of shoulder instability or a shoulder replacement may require less extreme positioning in the operating room, especially with arm abduction and external rotation. In patients with recurrent anterior shoulder dislocations, the position of the arm in 90° of elevation in the scapular plane and up to 55° of external rotation has been shown to cause gross anterior translation of the humeral head.² It may also be prudent to examine the shoulder postoperatively to confirm a reduced glenohumeral joint before leaving the operating room. The choice of anesthesia for these patients should be considered. A regional anesthetic block, either a supraclavicular or axillary nerve block, used for many hand procedures, may delay the diagnosis of a shoulder dislocation until the patient is discharged due to lack of pain and inability to attempt active shoulder motion. General, monitored anesthesia care, or local anesthesia is preferable for these patients.

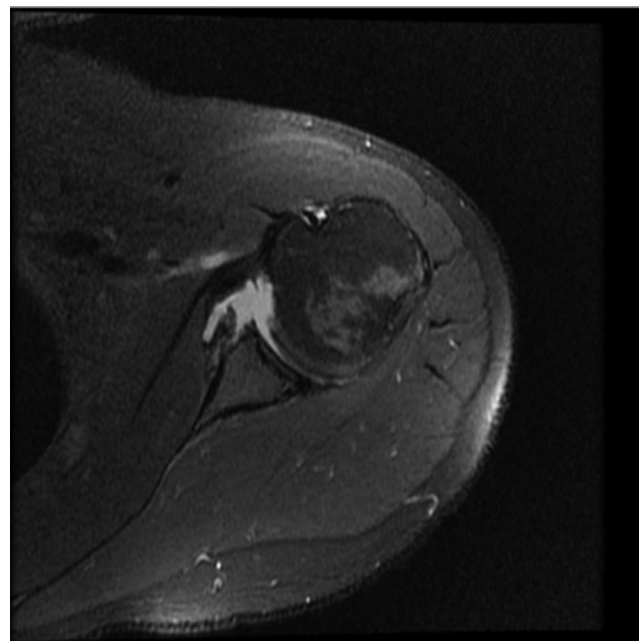


Figure 5 Axial cut of a magnetic resonance imaging of the left shoulder demonstrating anterior inferior glenoid bone loss and labral deficiency.

A history of previous shoulder surgery or instability should be identified before upper extremity procedures. Arm positioning, anesthesia, and postoperative care and examination may have to be altered to accommodate these patients. This case of an anterior glenohumeral dislocation during an ulnar nerve transposition highlights important aspects of perioperative care that upper extremity surgeons should be conscious of for this subset of patients.

Disclaimer

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