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Use of POCUS and OMT for Anterior Shoulder Reduction

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Use of POCUS and OMT for Anterior Shoulder Reduction

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INTRODUCTION

Shoulder dislocations are very a common presentation in the emergency department. This represents about 50% of all joint dislocations presenting to the ER. Over 95% of the dislocations are anterior¹. Approximately 70% of shoulder dislocations occur in men¹ and in both genders, the prevalence of shoulder dislocations occurs in a bimodal distribution in age in those younger than 20 and over 60 years old. Shoulder dislocation can occur anteriorly, posteriorly, and inferiorly. In an anterior dislocation, excessive force from external rotation and abduction causes a tear in the anterior ligamentous capsule³, causing the humeral head to dislocate from the glenoid fossa. Approximately 95% of these cases are due to trauma². Of those who have dislocated their shoulders, 70% will experience a reoccurrence². Diagnosis of shoulder dislocation involves clinical exam through assessment of the acromion asymmetry and location of the humeral head¹. Additionally, anteroposterior and scapular “Y” radiography should be obtained to help distinguish anterior vs posterior dislocations¹.



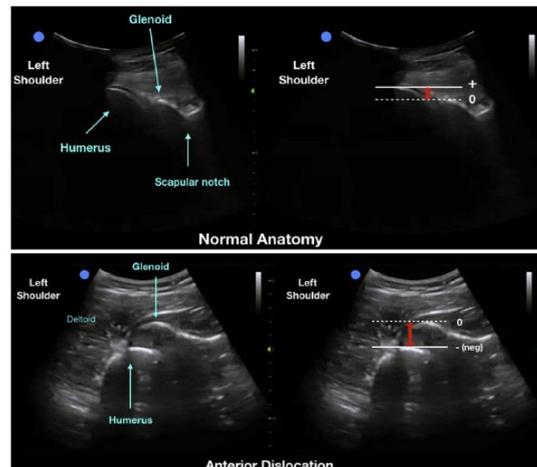
(left) Anterior Y-view (<https://radiopaedia.org/articles/anterior-shoulder-dislocation>)
(right) Posterior dislocation Y-view (<https://litfl.com/posterior-shoulder-dislocation>)

Recently, a 2020 study published by Secko et al. in the Annals of Emergency Medicine showed that a **posterior approach to using POCUS for shoulder dislocation accurately identifies dislocations and reduces diagnosis time compared to radiography**. Once a diagnosis is made, there are multiple modalities to reduce the dislocation. It is recommended that procedural sedation or local intra-articular injections be administered prior to reduction to reduce pain⁵. Post-reduction radiography can be obtained to confirm reduction. After reduction, the affected arm should be placed on sling and swathe for 1-2 weeks. Patient should be discharged with appropriate analgesia and orthopedic follow-up⁵.

CASE PRESENTATION

Patient is a 20-year Hispanic male with no past medical history presented to the ER for right shoulder pain after extending his arm above his head while putting on his shirt. The patient had **history of recurrent shoulder dislocation and had been seen at this ER previously**. He knew that his shoulder was dislocated again. On arrival, there was a noticeable step off on his right shoulder. He appeared uncomfortable. He stated that he only wanted the shoulder to be put back in without pain medications.

We elected to use bedside ultrasound to confirm the shoulder dislocation. To verify a dislocation, we had the patient sit upright on the stretcher. A curvilinear probe was placed above the patient’s shoulder with notch towards patient’s right. The probe is positioned on the glenoid space and the coronal view allowed us to see the humeral head dislocated from the glenoid space. A gentle soft tissue release technique was performed on patient’s scapula and trapezius to reduce muscle tension. This was followed by gentle soft tissue release of the anterior, lateral, and posterior deltoid. This helped to decrease overall muscle spasms. After we palpated a release, a modified approach to the Modified Kocher technique was performed.



Stock image of LEFT shoulder dislocation using POCUS from ACEP Now Website
Source: <https://www.acepnow.com/article/new-study-compares-pocus-with-x-ray-for-shoulder-dislocations/>

The patient continued to sit upright, and we had him adduct his right arm against his body, then rest his hands on the clinician’s shoulder. Gentle traction was applied while concurrent manipulation on his shoulder, trapezius, and deltoid was performed. **The shoulder was reduced successfully and was confirmed with a post-reduction bedside ultrasound showing the humeral head in the glenoid fossa.**

DISCUSSION

In this case, we presented a unique solution for reducing shoulder dislocation without pain medication or formal imaging. Although this circumstance was unique, **we do strongly encourage the use of pain relievers as well as formal imaging, as American College of Emergency Physicians (ACEP) continues to endorse radiography as primary imaging modality**. Even though our patient was uncomfortable, he did have a history of shoulder dislocations and therefore, knew what to expect during his visit. An adjunctive OMT soft tissue technique was performed by an osteopathic resident physician to help facilitate relaxation of supporting muscles of the shoulder, which aided in success of the technique. OMT soft tissues techniques involve gentle force to engage the tissues to feel a release. Oftentimes, gentle kneading is used in conjunction with pressure to facilitate a release. Bedside ultrasound was used pre and post-reduction to confirm placement. Overall, without the use of procedural sedation and formal ultrasound, **our patient had his shoulder expediently reduced, decreasing the duration of pain during his stay and avoiding any injuries associated with prolonged dislocation.**

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