

Detroit SonoWAR 2024

#3 Dislocation Station

Your team is out hiking and one of your teammates trips and suffers a dislocation of their shoulder and breaks several ribs.

There has been at least one recently published case of a stranded hiker with an ultrasound-confirmed glenohumeral joint dislocation who underwent ultrasound-guided intra-articular lidocaine injection and ultrasound-confirmed reduction. This procedure allowed the patient to hike out under his own power, avoiding the potential dangers of extrication to both patient and rescuers.¹

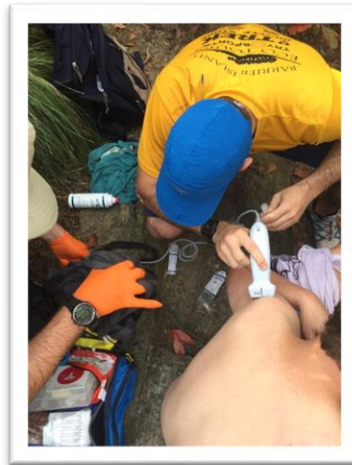


Image from Reference 1

Additionally, recent studies and meta-analyses have concluded “Intra-articular lidocaine may have similar effectiveness as IV sedation in the successful reduction of anterior shoulder dislocations in the ED with fewer adverse events, shorter ED length of stay, and no difference in pain scores or ease of reduction.”²

References to chew on as you stroll to this station:

1. Lin, M. *Trick of the Trade: Ultrasound Guided Intra-articular Injection for Shoulder Dislocation*. ALIEM 2011



2. Gautier, P et al. *Ultrasound-Guided Interscalene Brachial Plexus Nerve Block*. NYSORA website, accessed 2024.
<https://www.nysora.com/techniques/upper-extremity/interscalene/ultrasound-guided-interscalene-brachial-plexus-block/>





Additional Reading

3. Kranc, D. *Use of Ultrasound for Joint Dislocation Reduction in an Austere Wilderness Setting: A Case Report*. Prehospital Emergency Care, 2019
4. Secko, M et al. *Musculoskeletal Ultrasonography to Diagnose Dislocated Shoulders: A Prospective Cohort*. Annals of Emergency Medicine, 2020
5. Sethi, P et al. *Accuracy of anterior intra-articular injection of the glenohumeral joint*. Arthroscopy: The Journal of Arthroscopic and Related Surgery, 2005
6. Waterbrook, A. *Intra-articular Lidocaine Injection for Shoulder Reductions*. Sports Health, 2011. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3445222/>
7. Borke J *Reduction of Shoulder Dislocation Technique*. Medscape 2020. <https://emedicine.medscape.com/article/109130-technique>
8. Rastogi, K. *Fundamentals of Joint Injection*. American Journal of Roentgenography, 2016
9. Mantuani, D. *How to Perform an Erector Spinae Plane Block*. ACEPNow, 2021. <https://www.acepnow.com/article/how-to-perform-an-erector-spinae-plane-block/>
10. Tin, J. *Ultrasound for Shoulder Dislocation and Reduction*. EmDocs 2018 <http://www.emdocs.net/us-probe-ultrasound-for-shoulder-dislocation-and-reduction>
11. Jacobson, J. *Shoulder US: Scanning, Anatomy, and Scanning Pitfalls*. Radiology, 2011 <https://pubs.rsna.org/doi/10.1148/radiol.11101082>
12. Riguizzi, et al. *How To Use POCUS To Identify Shoud*<https://www.acepnow.com/article/use-point-care-ultrasound-identify-shoulder-dislocation/>
13. Sithamparapillai, A et al. *Intra-articular lidocaine versus intravenous sedation for closed reduction of acute anterior shoulder dislocation in the emergency department: a systematic review and meta-analysis*. Canadian Journal of Emergency Medicine, 2022

DETROIT SONOWAR 2024

#3 Dislocation Station

- 1 Point Navigate to this station and complete it within 10 minutes
- 1 Point Demonstrate proper probe position and technique for diagnosing shoulder dislocation via ultrasound (*Identify glenoid fossa, humeral head, spine of scapula, and supraspinatus tendon motion with internal/external rotation*)
- 1 Point A common reason for failure of intrarticular lidocaine injections is using too short of a needle. Measure on your teammate the depth of the needle path from skin to glenoid labrum. How does this compare to a regular nursing needle (1" or 25mm) versus an 18g spinal needle (3.5" or 88mm)
- 1 Point 
- 1 Point Properly describe the procedure for how to perform an intrarticular lidocaine injection of the shoulder. Must include: *Type of medication; Strength/Concentration; Amount; Needle Selection; Skin insertion site; and Description of Technique.*
- 1 Point 
- 1 Point Describe at least three different methods for reduction of a dislocated shoulder and how to confirm reduction
- 1 Point The interscalene nerve block is another useful method for providing anesthesia/analgesia for a shoulder reduction. Name one key advantage of the interscalene nerve block over an intrarticular block.
- 1 Point The interscalene block also has downsides. Name one key adverse physiologic effect that the interscalene block has. Which patient population is this most dangerous in?
- 1 Point 