Received: 19 February 2021 | Revised: 26 March 2021 | Accepted: 30 March 2021

DOI: 10.1002/emp2.12445

JACEP OPEN
JOURNAL OF THE AMERICAN COLLEGE OF EMERGENCY PHYSICIANS OPEN
A GLOBAL JOURNAL OF EMERGENCY MEDICINE
Open Access

WILEY

IMAGES IN EMERGENCY MEDICINE

Trauma

Man with wrist pain

Sandhya Ashokkumar MD | **Rebecca Fieles MD** | **Joshua S. Rempell MD, MPH**

Department of Emergency Medicine, Cooper University Hospital, Camden, New Jersey, USA

Correspondence
Sandhya Ashokkumar, MD, Department of Emergency Medicine, Cooper University Hospital, Camden, NJ, USA.
Email: Ashokkumar-sandhya@cooperhealth.edu

1 | CASE PRESENTATION

A man presented to the emergency department complaining of right wrist pain and distal paresthesias after sustaining a nail gun injury.

FIGURE 1 Nail penetrating the ulnar aspect of the distal right forearm

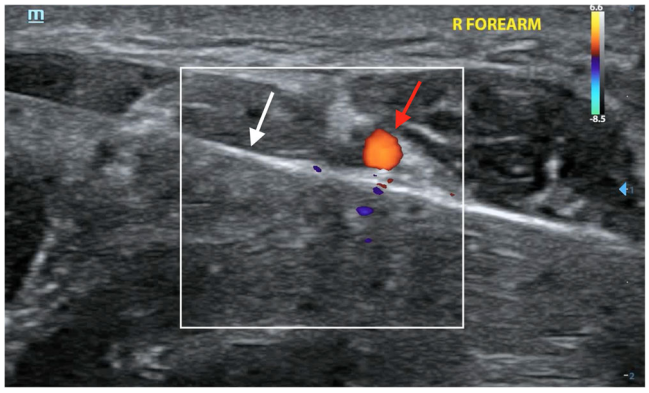

FIGURE 2 Ultrasonographic image of the nail penetrating just adjacent to the ulnar artery

His vital signs were unremarkable, and on examination there was a nail penetrating through the patient's wrist (Figure 1). The emergency physicians performed point-of-care ultrasound to evaluate for vascular injury (Figure 2, Video S1) and an X-ray (Figure 3) was performed to look for fracture.

2 | DIAGNOSIS

2.1 | Vascular injury after nail gun penetration

Point-of-care ultrasound confirmed that the nail barely missed the ulnar artery as shown in Figure 2 and Video S1. X-ray showed no bony involvement.

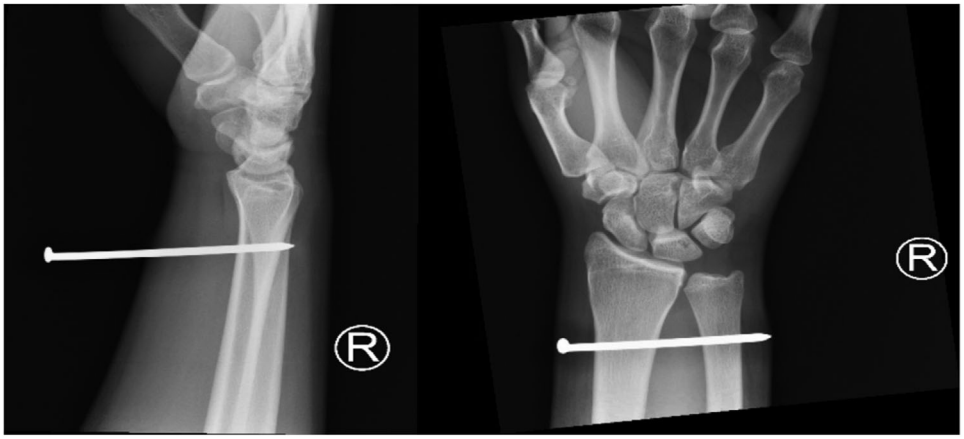

FIGURE 3 Anterior-posterior and lateral X-ray images showing the distal forearm medial to the ulna impaled by the nail without signs of fracture

3 | DISCUSSION

When managing nail gun injuries, it is important to maintain the nail in place, and point-of-care ultrasound should be used as a timely modality to evaluate for vascular injury.[1] Ultrasound can also be used to detect penetrating nerve injury as was done at the bedside given the proximity to the ulnar nerve. Although ultrasound also has been shown to assist in the evaluation of fracture, we decided x-ray was low risk and indicated in this case.[2] As with other bedside ultrasound applications, it is important to evaluate the structure of interest in multiple planes to fully assess neurovascular structures. Injuries should be managed by updating the patient's tetanus and administering a first-generation cephalosporin antibiotic.[3] If there is no damage to surrounding tissue or intraarticular penetration, the nail can be removed at the bedside, and the patient can be discharged with 1 week of oral antibiotics and hand surgery follow-up care.[3]

ORCID

Sandhya Ashokkumar MD https://orcid.org/0000-0002-9626-2261

REFERENCES

1. Bitzos IE, Granick MS. Management of penetrating wrist injuries in the emergency department. *Eplasty*. 2009;9(2):468-473.
2. Champagne N, Eadie L, Wilson P. The effectiveness of ultrasound in the detection of fractures in adults with suspected upper or lower limb injury: a systematic review and subgroup meta-analysis. *BMC Emerg Med*. 2019;19(1):17.
3. Rhee PC, Fox TJ, Kakar S. Nail gun injuries to the hand. *J Hand Surg Am*. 2013;38(6):1242-1246.

SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section at the end of the article.

How to cite this article: Ashokkumar S, Fieles R, Rempell JS. Man with wrist pain. *JACEP Open*. 2021;2:e12445. https://doi.org/10.1002/emp2.12445