

Clinical History

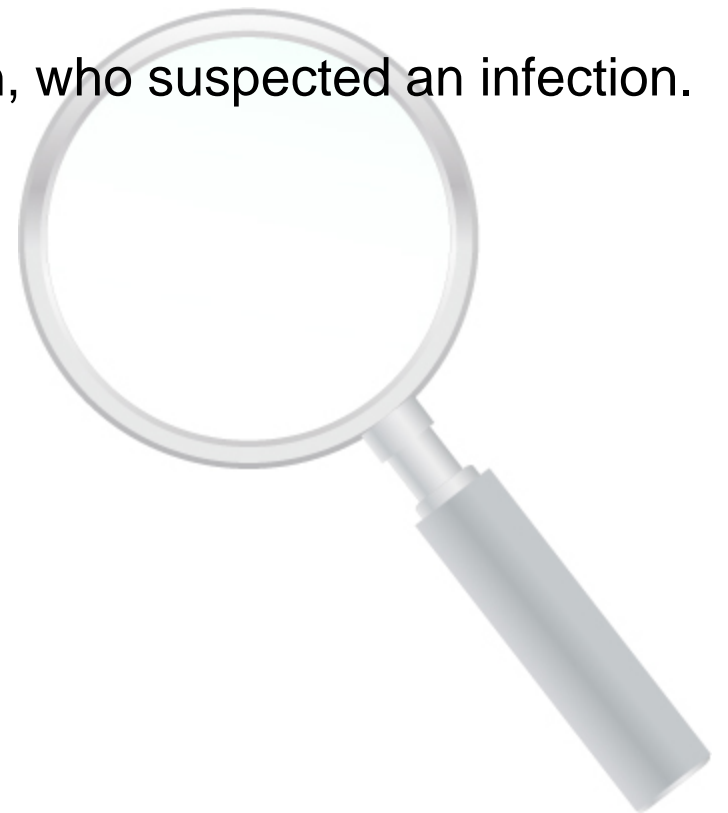
32 year old female sustained a puncture wound at the plantar aspect of the forefoot while running on the beach.

Inspection of the wound after the injury demonstrated no foreign body.

After 4 days, the area of the puncture became progressively swollen and reddened without fluid discharge.

The patient then presented to her local physician, who suspected an infection.

MRI was ordered.





Sagittal

Sagittal (a) and axial (b) MRI images were obtained and demonstrated a fluid collection deep to the skin surface at the area of the prior injury (arrows). No foreign body was identified.

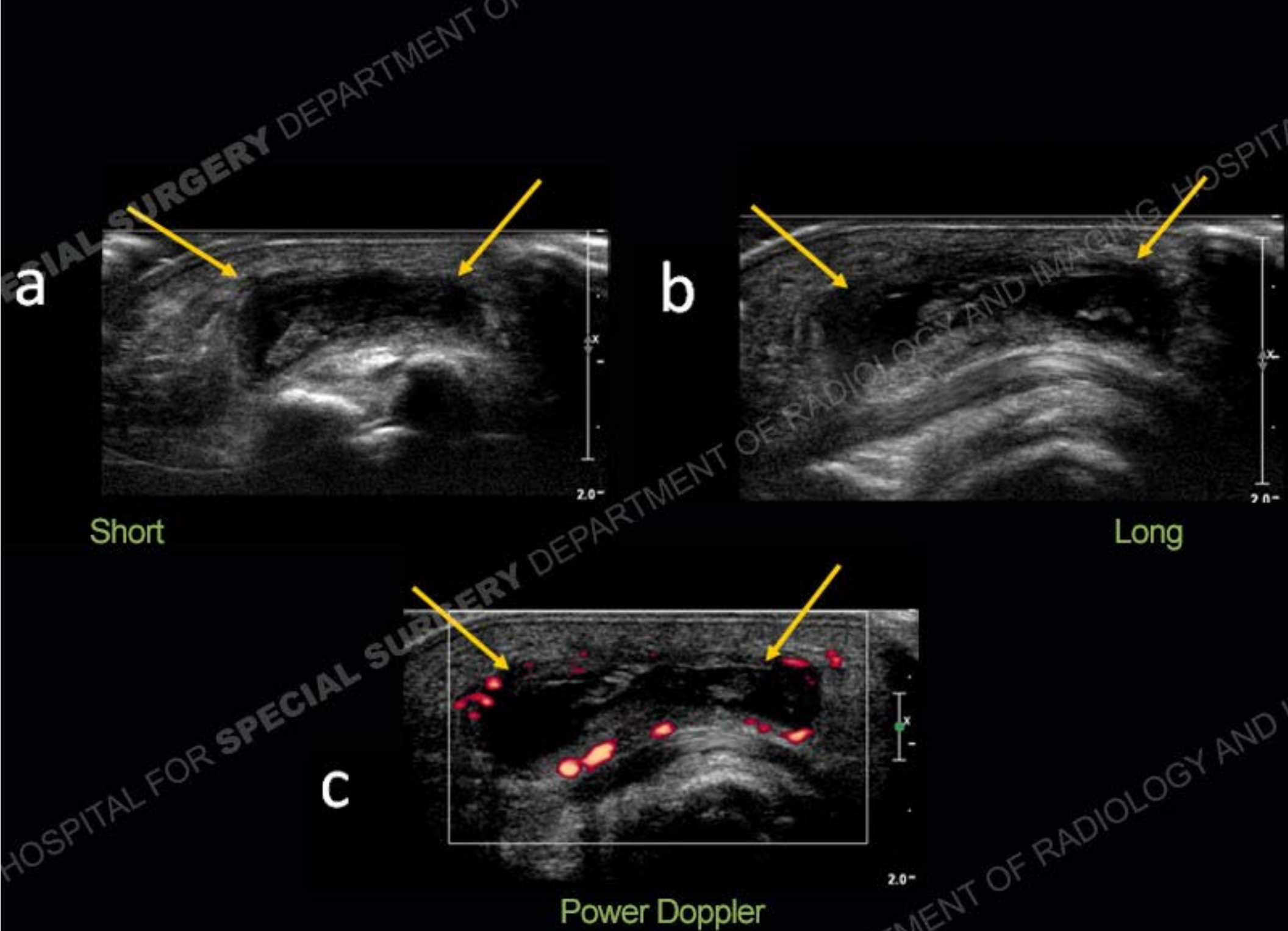


Axial

Clinical History

Following the MRI, the patient was sent for an ultrasound-guided aspiration to evaluate for possible infection.



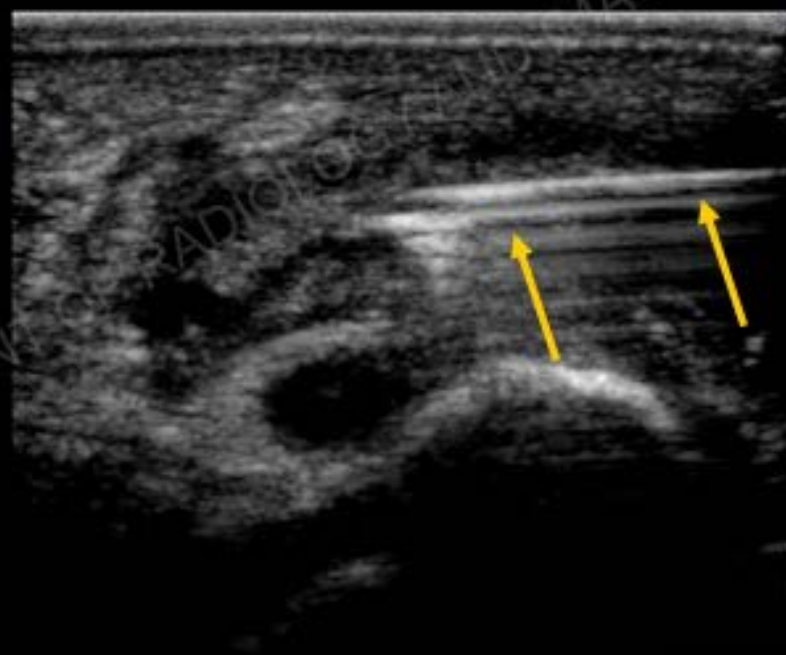


Ultrasound images in the short axis (a), long axis (b), and long axis with Power Doppler (c) planes confirms the presence of a irregular fluid collection correlating with the MRI findings (arrows). The presence of Power Doppler flow surrounding the fluid raises the suspicion of infection.

a



b



Ultrasound images during needle aspiration of the plantar fluid collection.

a. Needle (arrows) entering the previously noted collection.

b. Needle (arrows) following aspiration of 1.5 ml of cloudy thick fluid which was sent for laboratory analysis

Diagnosis

Plantar foot abscess following puncture injury.

Gram stain with culture and sensitivity of the fluid obtained from aspiration yielded gram-positive cocci (Staph Aureus).

Discussion

In evaluation of the soft tissues following puncture, laceration, or other injury both MRI and ultrasound are valuable in determining the presence of a fluid collection/abscess.

Ultrasound also allows the safe and complete aspiration of any collection identified to definitively exclude infection.

