

Image Diagnosis: Ankle Fractures and Dislocations

Sundeep R Bhat, MD
Gus M Garmel, MD, FACEP, FAAEM

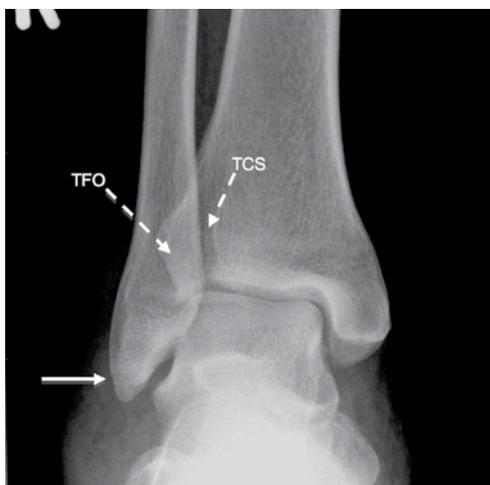


Figure 1. Anterior-posterior view of the ankle

Standard radiographs for suspected ankle injury include anterior-posterior (AP), lateral, and mortise views.^{1,2} On this AP radiograph, the solid white arrow demonstrates a subtle fracture of the distal fibula; the ankle mortise is intact. On AP ankle films, cortical disruption or talar tilt should be identified. If tibiofibular overlap (TFO)—the distance between the lateral border of the tibia and the medial border of the fibula—is less than 10 mm, or the tibiofibular clear space (TCS)—the distance between the medial border of the fibula and the lateral aspect of the posterior tibial malleolus—is greater than 5 mm, associated syndesmotomic injury is likely. Greater than 2 mm difference between the lateral and medial joint space above the talus indicates talar tilt suggestive of medial or lateral disruption of this joint.^{1,2}

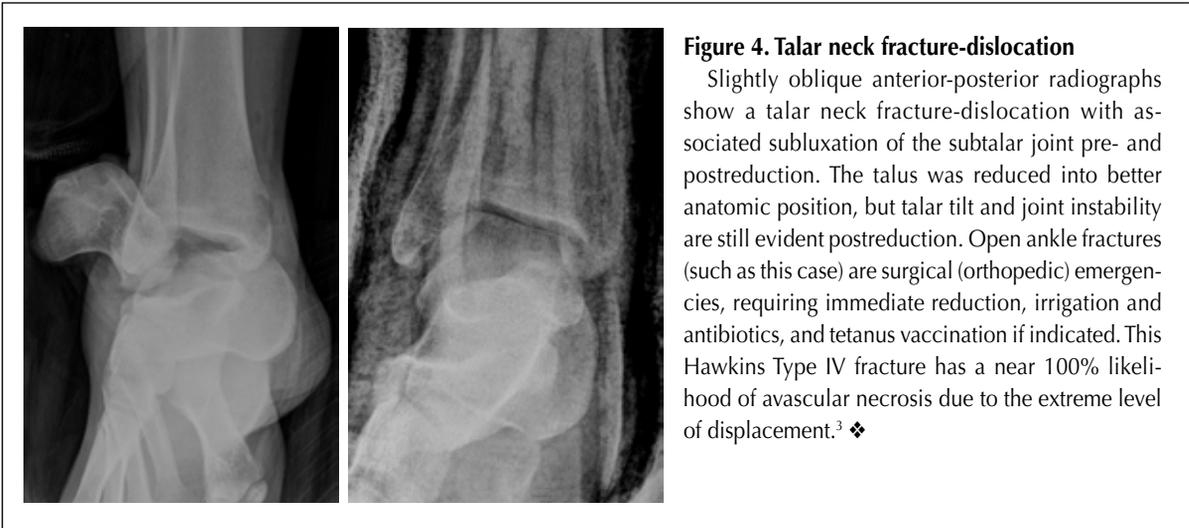
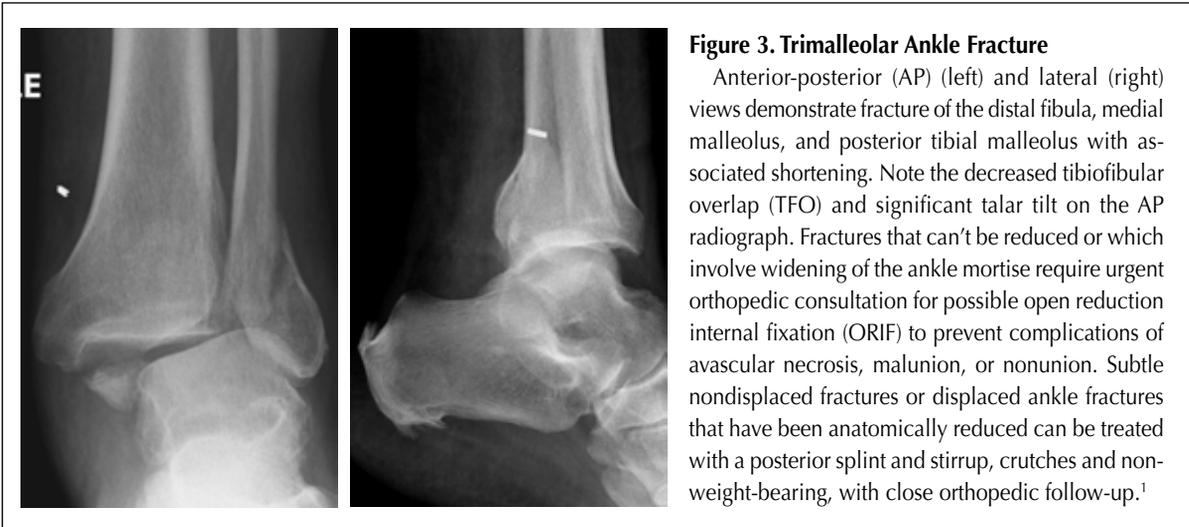


Figure 2. Bimalleolar Ankle Fracture

Anterior-posterior (AP) view (left) of the ankle demonstrates fracture of the fibula visualized as cortical disruption along the lateral border and a subtle distal tibia fracture seen approximately 2 mm above the distal tip, with preservation of the posterior border of the tibia (seen on lateral view [right]). In addition, the AP view reveals widening of the medial aspect of the superior talar joint space compared with the lateral space, suggesting talar tilt. This pattern of distal fibula fracture with medial malleolus involvement is often due to supination-external rotation injury and is likely associated with significant joint instability if the deltoid ligament is disrupted.¹ A small avulsion of the talar neck is also seen along the medial border, opposite the site of the distal tibia fracture.

Sundeep R Bhat, MD, is an Emergency Medicine Resident in the Stanford/Kaiser Emergency Medicine Residency Program. E-mail: sbhat@stanford.edu.

Gus M Garmel, MD, FACEP, FAAEM, is a Senior Emergency Medicine Physician at the Santa Clara Medical Center. He is also the Co-Program Director of the Stanford/Kaiser Emergency Medicine Residency Program, and an Associate Professor of Emergency Medicine (Surgery) at Stanford University. He is a Senior Editor for *The Permanente Journal*. E-mail: gus.garmel@kp.org.



References

1. Ankle fractures. In: Koval KJ, Zuckerman JD. Handbook of fractures. 3rd ed. Philadelphia, PA: Lippincott Williams & Wilkins; 2006. p 398-423.
2. del Castillo J. Foot and ankle injuries. In: Adams JG. Emergency medicine. 1st ed. Philadelphia, PA: Saunders Elsevier; 2008. p 897-909.
3. Talus. In: Koval KJ, Zuckerman JD. Handbook of fractures. 3rd ed. Philadelphia, PA: Lippincott Williams & Wilkins; 2006. p 435-42.