

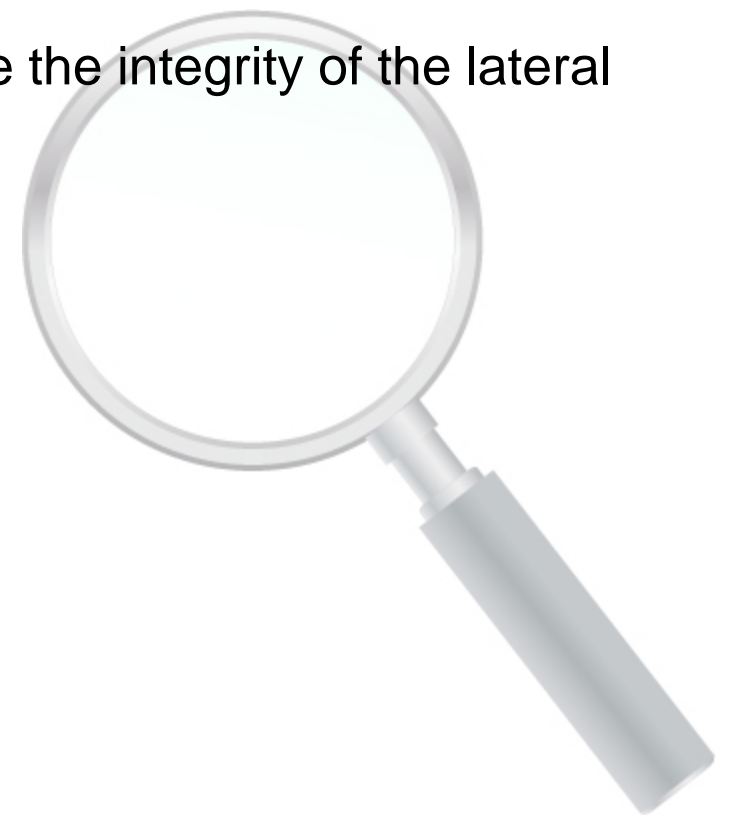
Clinical History

29 year old male who sustained a twisting injury and predominant inversion of the ankle while playing basketball 1 week earlier.

Pain has not improved and is greatest laterally with prominent lateral soft tissue swelling.

Radiographs of the ankle were negative for fracture.

Ultrasound evaluation was requested to evaluate the integrity of the lateral ankle ligaments.



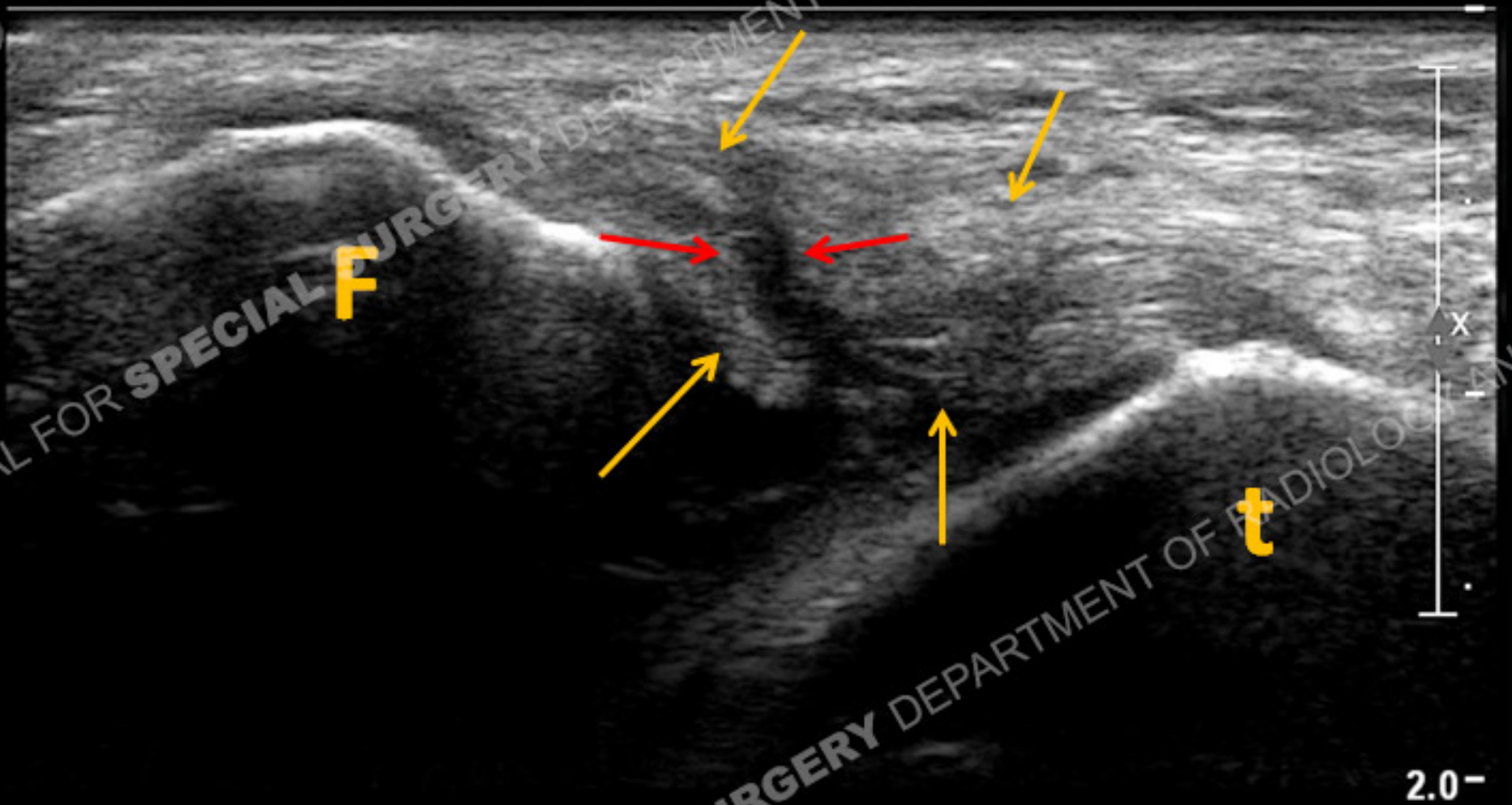
Lateral ankle ligaments

The three most important lateral ankle joint stabilizing ligaments are the anterior talofibular, calcaneofibular, and posterior talofibular ligaments.

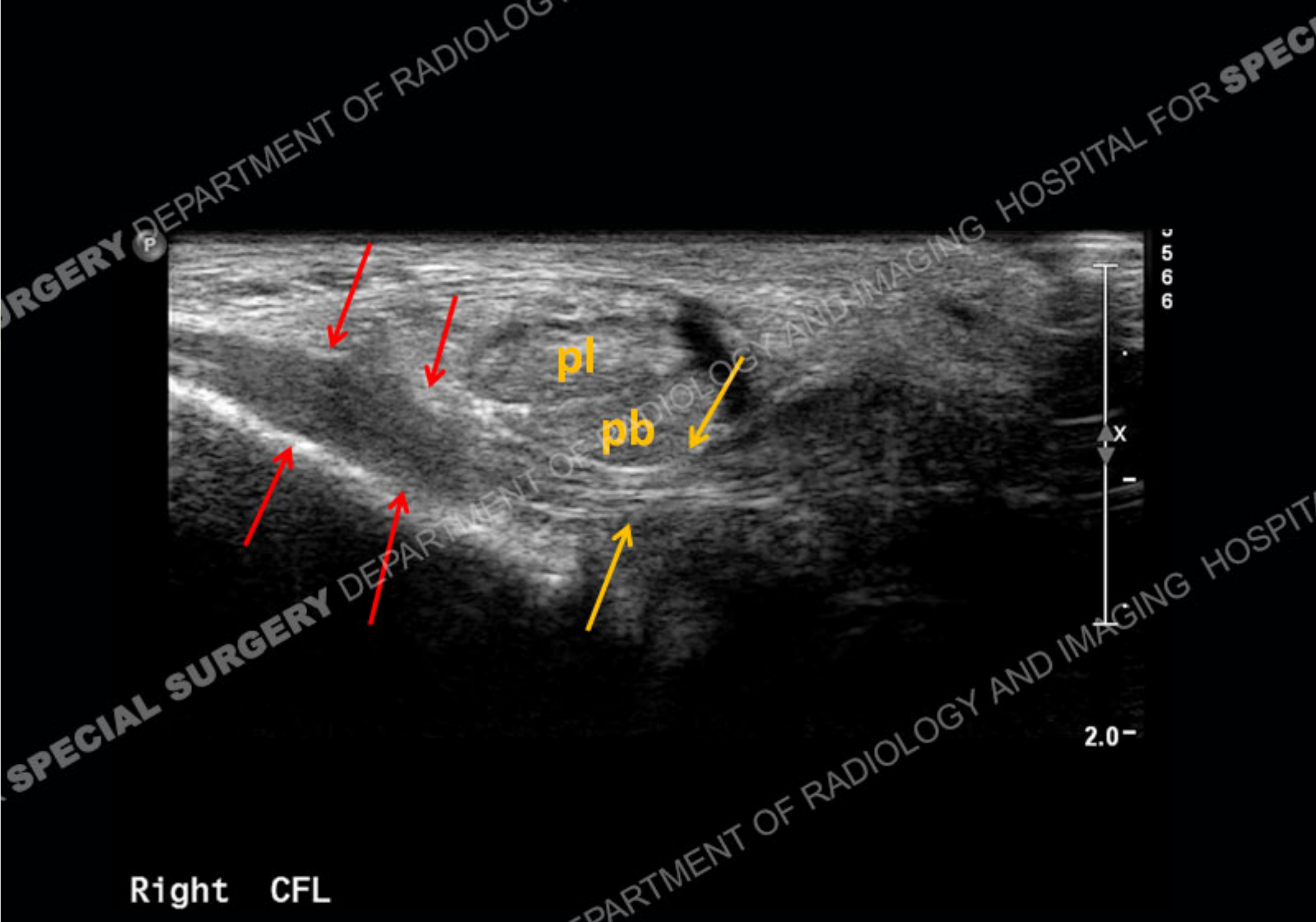
Of note, the posterior talofibular ligament is not well seen sonographically but is the least commonly injured

The anterior tibiofibular ligament is also evaluated to exclude a high ankle sprain and is well visualized with ultrasound



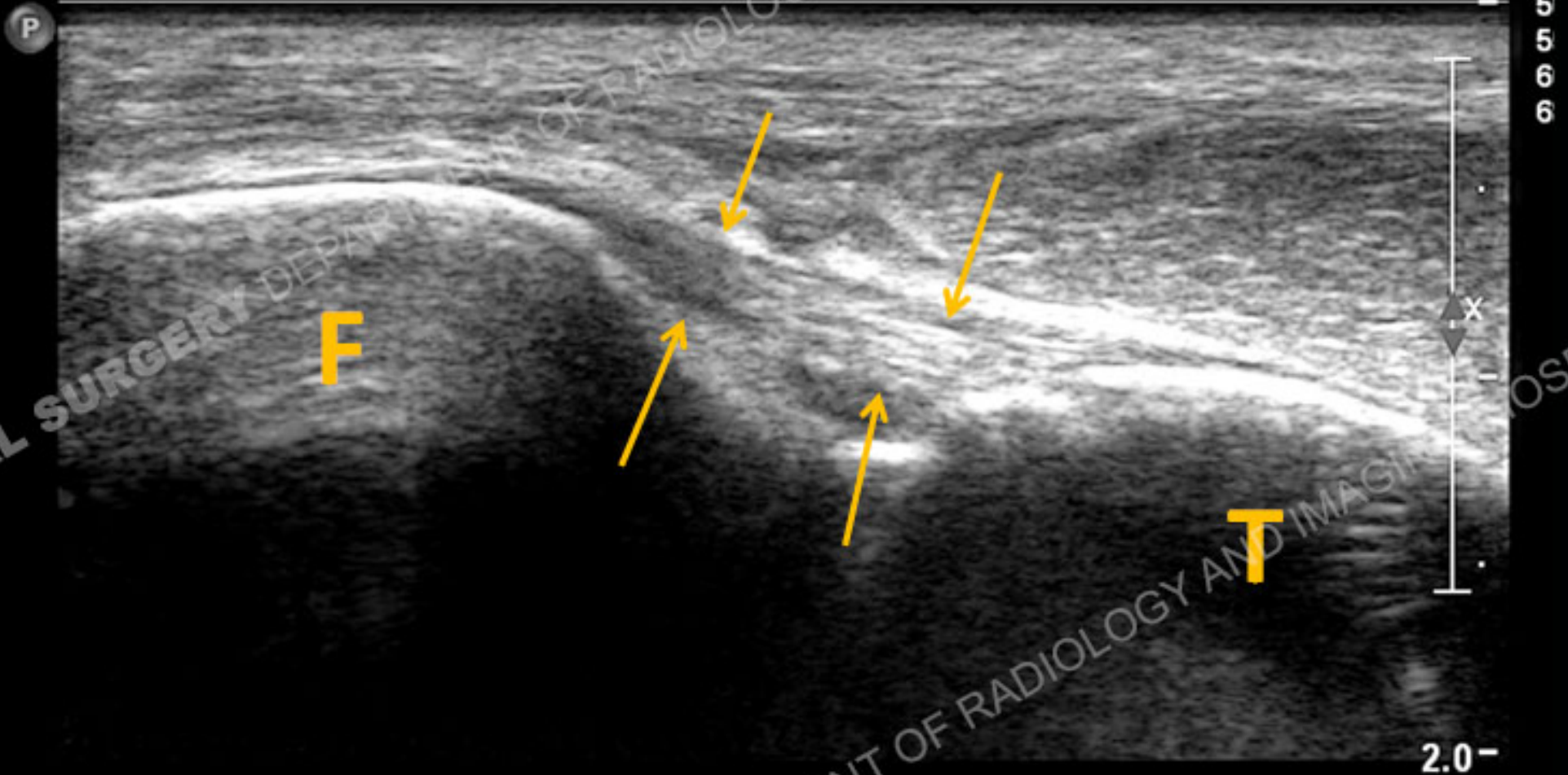


Long axis ultrasound image of the anterior talofibular ligament (yellow arrows) shows a full-thickness tear (red arrows). F- lateral malleolus of the fibula, t- talus.



Right CFL

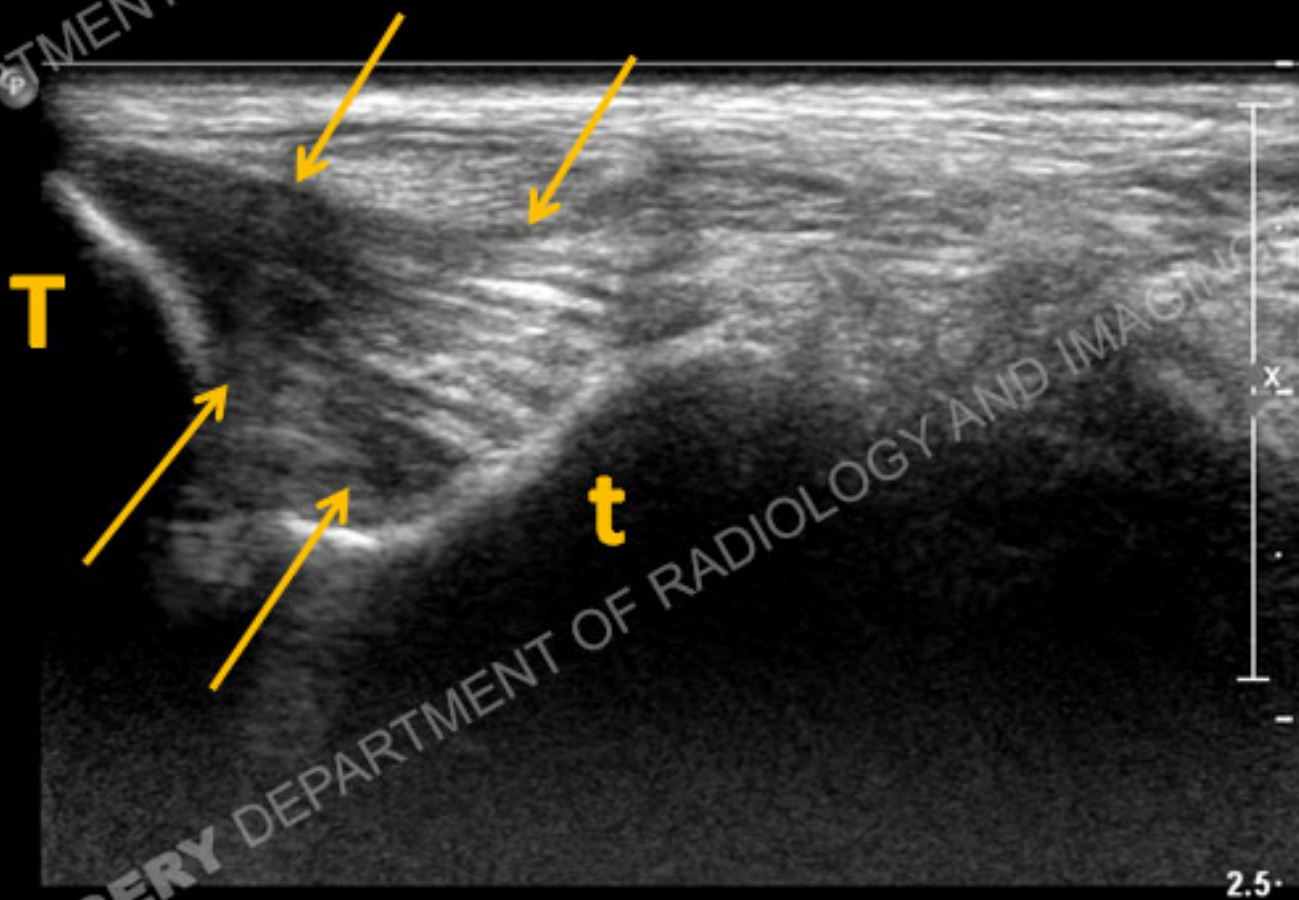
Long axis ultrasound image of the calcaneofibular ligament demonstrates a focus of decreased echogenicity and thickening at the calcaneal attachment (red arrows) consistent with a partial tear. Note the normal thin echogenic ligament more centrally (yellow arrows). pb- peroneus brevis and pl- peroneus longus tendons.



Right ANT TIB-FIB LIGAMENT

Long axis ultrasound image of the normal anterior tibiofibular ligament (arrows) above the joint. F- fibula, T- tibia.

S
D
72%
60
Med
es



Comparison ultrasound imaging of the medial ankle in the coronal plane demonstrating normal deep fibers of the deltoid ligament (arrows). T- medial malleolus of the tibia, t- talus.

Discussion

Evaluating the integrity of the ankle ligaments following an inversion injury is important in determining treatment and in predicting patient outcome.

To date, MRI has been the imaging study of choice and provides visualization of the lateral ankle ligaments as well as the internal structures of the ankle.

In selected cases, ultrasound may be an excellent substitute for MRI. It provides visualization of the integrity of the ligaments discussed as well as the regional soft tissues and tendons.

Unlike MRI, it cannot evaluate the articular cartilage of the ankle and is of very limited use in the diagnosis of fracture.

