

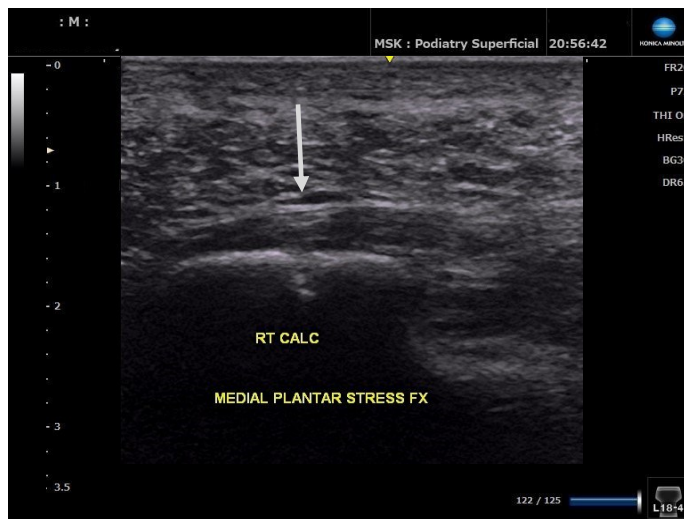
Heel Pain— Differential Diagnosis Using Diagnostic Ultrasound

Case study by **Marty Wendelken, DPM**, Product Specialist, Ultrasound, 20/20 Imaging, Division of Konica Minolta



Dr. Marty Wendelken has 20 + years of experience in musculoskeletal Ultrasound. He is a noted lecturer, and published author on diagnostic ultrasound. He also was an adjunct professor at Temple Univ. School of Podiatric Medicine. Currently Dr. Wendelken is working with 20/20 Imaging as their musculoskeletal educator and product specialist of the lower extremity / foot and ankle.

History- A 54 year-old active male presented with a recent onset of pain in the plantar aspect of the right foot. He stated that he runs about 25 miles a week using appropriate running gear including foot orthotics. He further stated that the pain felt like previous plantar fascia pain. No history of acute injury was noted. Physical exam reveals normal pedal pulses, neurological, and range of motion of the right ankle. No swelling, erythema or edema was found in the area of chief complaint. Radiographs were obtained and were unremarkable. A musculoskeletal ultrasound was performed using a linear array 4-18 MHz probe. The plantar aspect of the heel and long arch was examined in both axis. The plantar fascia was evaluated and measured 4.0 mm at plantar calcaneus (normal 3mm +/- 0.5 mm) and is without tear (image below). Patent was negative for both heel spur or calcaneal bursa. Achilles and retro-calcaneal surface unremarkable. Upon further evaluation of calcaneal surface, a stress



fracture was noted in both the long axis (above).

Discussion: Stress Fractures and Ultrasound

Heel pain, the most common complaint found in the podiatric office requires soft tissue imaging to best diagnose the problem. Typical treatment included steroid injection which is contra-indicated in this case. Ultrasound waves do not penetrate bone, however the cortical surface of bone is easily evaluated and has a much higher resolution than standard radiographs. Like any other fracture, it is always best to confirm pathology in a second view. In this case the plantar surface of calcaneus is easily accessible in the short axis. (below)

