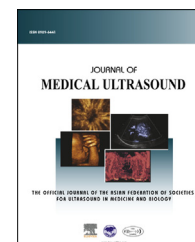


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IMAGING FOR RESIDENTS

Painful lump on the bottom of right foot

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Section 2—Answer

A 56-year-old woman with a lump in the arch of the right foot was referred for a sonographic evaluation. The patient

had first noticed the mass about 4 months previously. She reported pain at the mid arch of the right foot when walking or standing barefoot.

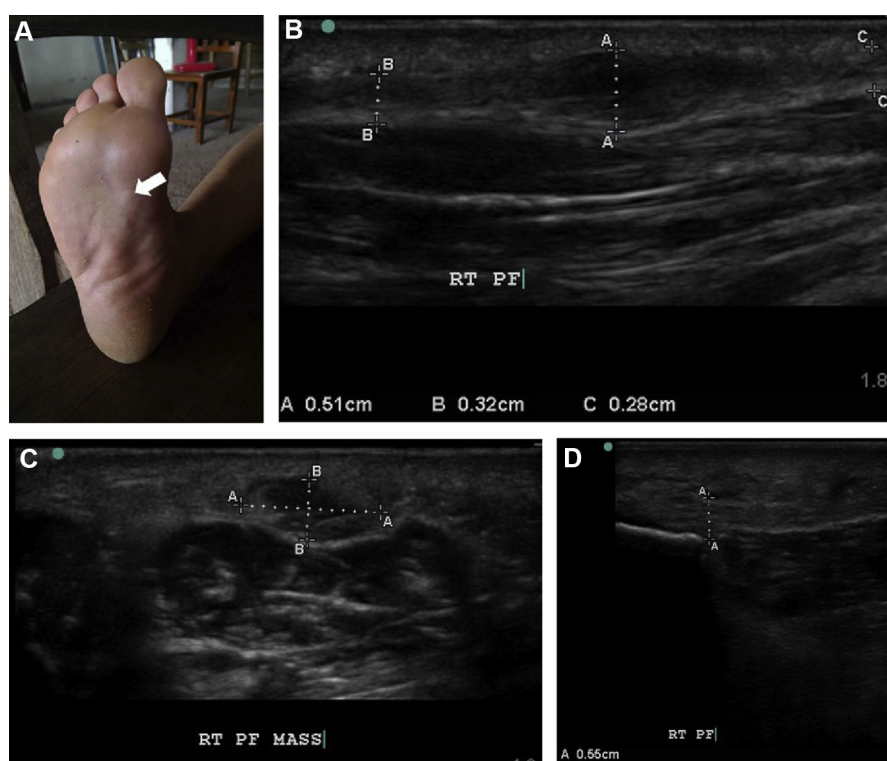


Fig. 1 (A) Photograph of the right foot. (B) Sonographic image of the mass on long axis view. (C) Sonographic image of the mass on transverse view. (D) Longitudinal sonographic image of the right plantar fascia. PF = plantar fascia; RT = right.

Conflicts of interest: None.

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Interpretation

Fig. 1A shows a single plantar nodule over the medial arch of the patient's right foot. Ultrasound of the right foot demonstrated a discrete hypoechoic fusiform nodular thickening on the surface of the plantar fascia, interrupting the fascia's hyperechoic, fibrillar pattern (Fig. 1B and C). Fig. 1D shows the thickened insertion of plantar fascia into the calcaneus. The diagnosis was plantar fibromatosis.

Discussion

Plantar fibromatosis is a benign fibroblastic proliferative disorder associated with the replacement of normal plantar aponeurosis with abnormal fibrous tissue. This disease is often referred to as Ledderhose's disease, named after George Ledderhose, a German surgeon who reported approximately 50 cases in 1897 [1]. It is also known as "Dupuytren's disease of the plantar fascia", because of the similarity between Dupuytren's disease and plantar fibromatosis [2]. The diagnosis of plantar fibromatosis can be made using sonography and magnetic resonance imaging (MRI). Sonography offers several advantages over MRI [3]. First, small lesions are more easily detected with ultrasound, because the contrast between the poorly reflective fibroma and the brighter, striated plantar fascia is obvious; with MRI, small low-reflective lesions can be difficult to differentiate from low-intensity plantar fascia. Second, it is easier to examine both feet using sonography. Thus, ultrasound is the diagnostic tool of choice [4]. The sonographic images of the plantar fibromatosis appeared most

commonly as 5–10 mm long, hypoechoic, and elongated, with tapered or slightly rounded ends fusing into the fascia [5]. Most cases of plantar fibromatosis (60%) were located medially in the plantar fascia [6]. One-quarter of the affected feet had coexistent thickening of the plantar fascia at the calcaneal insertion with no related symptoms [6]. Other plantar masses tend to display differently on sonographs and are unlikely to be located on the surface of the plantar fascia. Painful plantar fibromatosis is initially treated conservatively with anti-inflammatory drugs, local steroid injection, X-ray irradiation, extracorporeal shock wave therapy, antiestrogen therapy, physical therapy, and off-loading insole [4]. If conservative measures fail to relieve pain, surgery is considered [4].

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