

Plantar Fascia Tear in Chronic Plantar Fasciitis: Ultrasound–MRI Correlation in Two Cases

Suji Myeong, MD¹⁾, Kyeong Eun Uhm, MD, PhD¹⁾

¹⁾ Department of Rehabilitation Medicine, Konkuk University Medical Center and Konkuk University School of Medicine, Seoul, Korea



Introduction

Plantar fascia tear is a rare complication that can occur in patients with chronic plantar fasciitis, and its incidence has been rarely reported. Because plantar fasciitis is far more prevalent, tear may be overlooked when clinical and ultrasonographic findings mimic severe plantar fasciitis. Ultrasound (US) is often the initial imaging modality for plantar heel pain. Although plantar fasciitis typically presents with thickening and hypoechogenicity, findings such as irregular thickness, wavy contour, focal thinning, or discontinuity should raise suspicion for tear. Magnetic resonance imaging (MRI) remains the reference standard for confirming fascial disruption. We report two cases of plantar fascia tear confirmed by MR-US correlation, highlighting ultrasonographic features differentiating tear from severe plantar fasciitis.

Case 1

A 70-year-old woman with hypertension, dyslipidemia, and diabetes mellitus presented with aggravated left plantar heel pain that had persisted for 10 years and worsened over two months. Examination revealed tenderness over the medial calcaneal tubercle and a positive heel squeeze test. Radiographs showed no bony abnormalities.

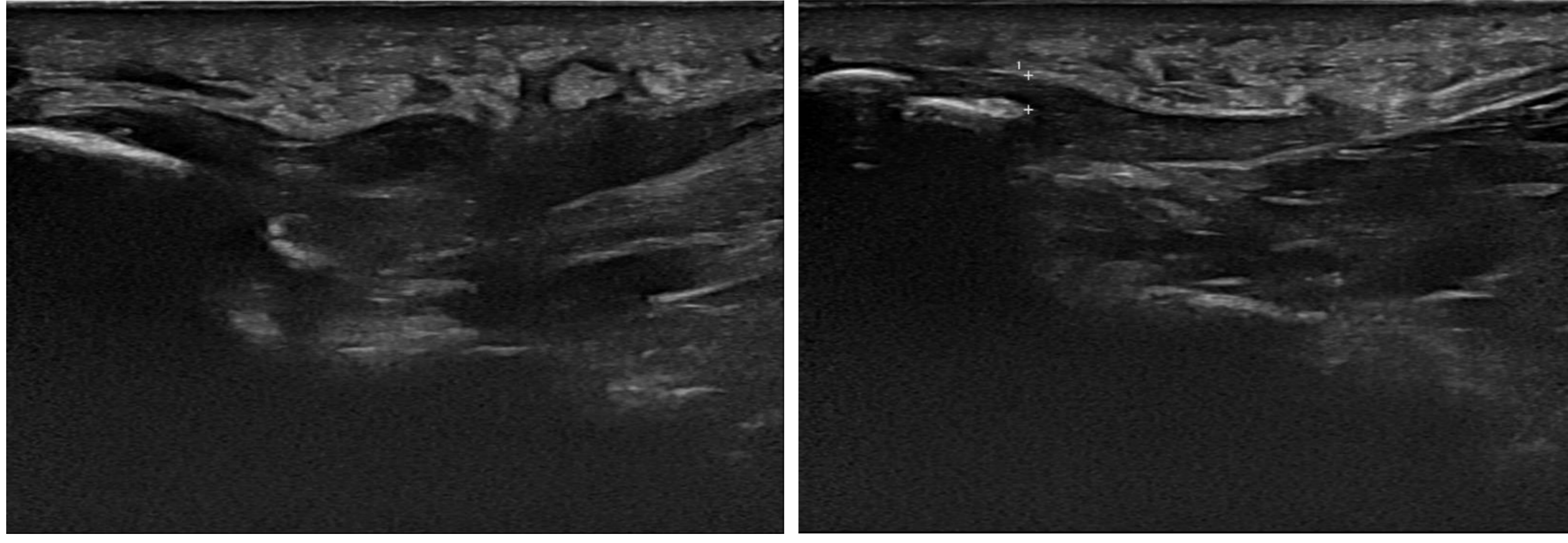


Figure 1. Ultrasound findings of the plantar fascia. (A) Left (affected) plantar fascia: Loss of normal fibrillar pattern, hypoechogenicity, irregular thickening (thickness: 0.43 cm), and a wavy appearance at the medial calcaneal tubercle, suggestive of plantar fascia tear. (B) Right (contralateral) plantar fascia: Relatively preserved fibrillar architecture with normal thickness (0.22 cm).

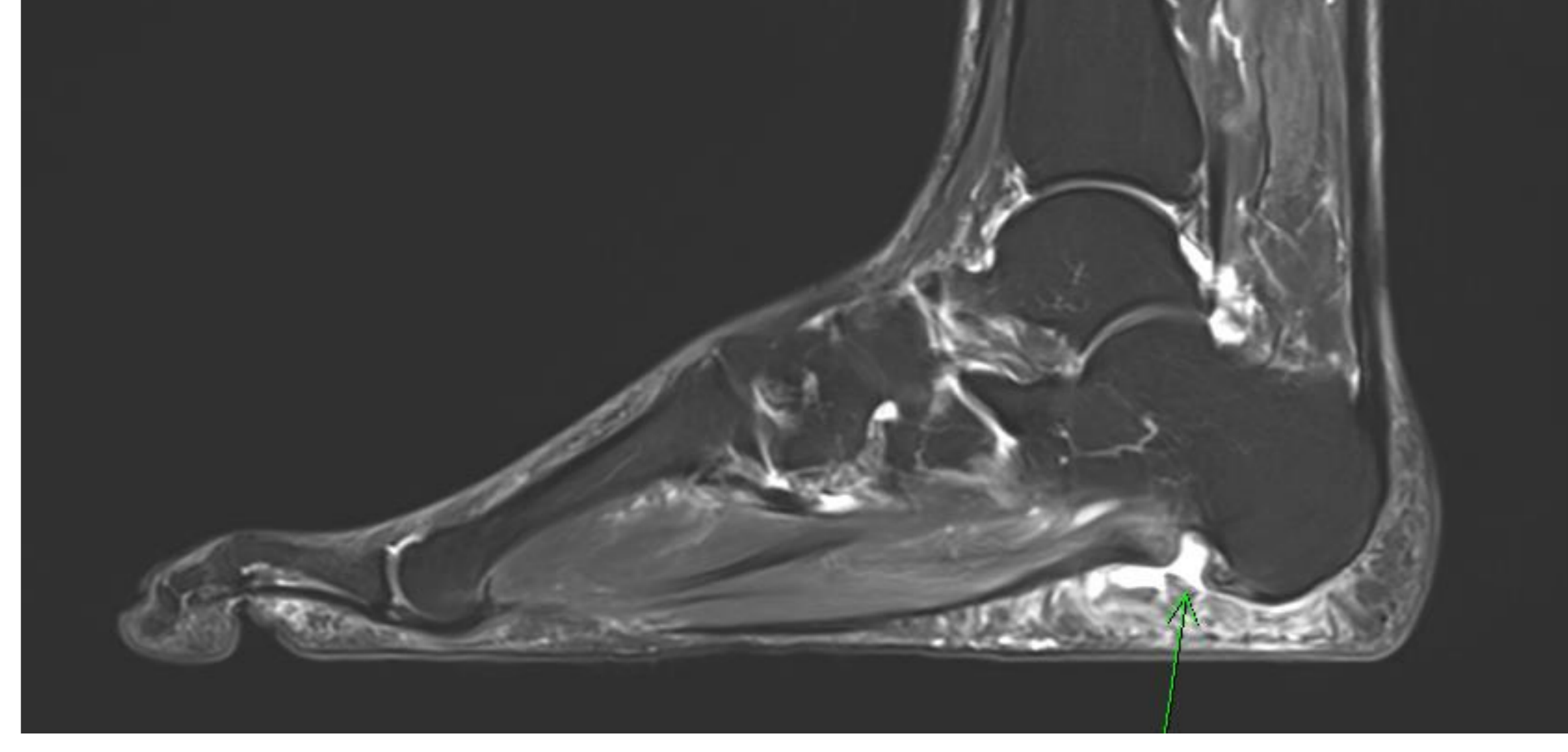


Figure 2. Sagittal T2-weighted fat-suppressed MRI of the left foot. Tear of the medial plantar fascia at the calcaneal attachment with proximal fascial thickening, focal fiber discontinuity, and intrafascial high signal intensity.

Based on ultrasound and MRI findings, the patient was diagnosed with a plantar fascia tear. The patient underwent conservative management but was lost to follow-up.

Case 2

A 58-year-old woman presented with a two-month history of severe right plantar heel pain limiting ambulation and causing nocturnal awakening. Examination revealed marked tenderness and swelling over the right medial calcaneal tubercle with a positive heel squeeze test. Radiographs revealed bilateral dorsal and plantar calcaneal spurs, without other bony abnormalities.

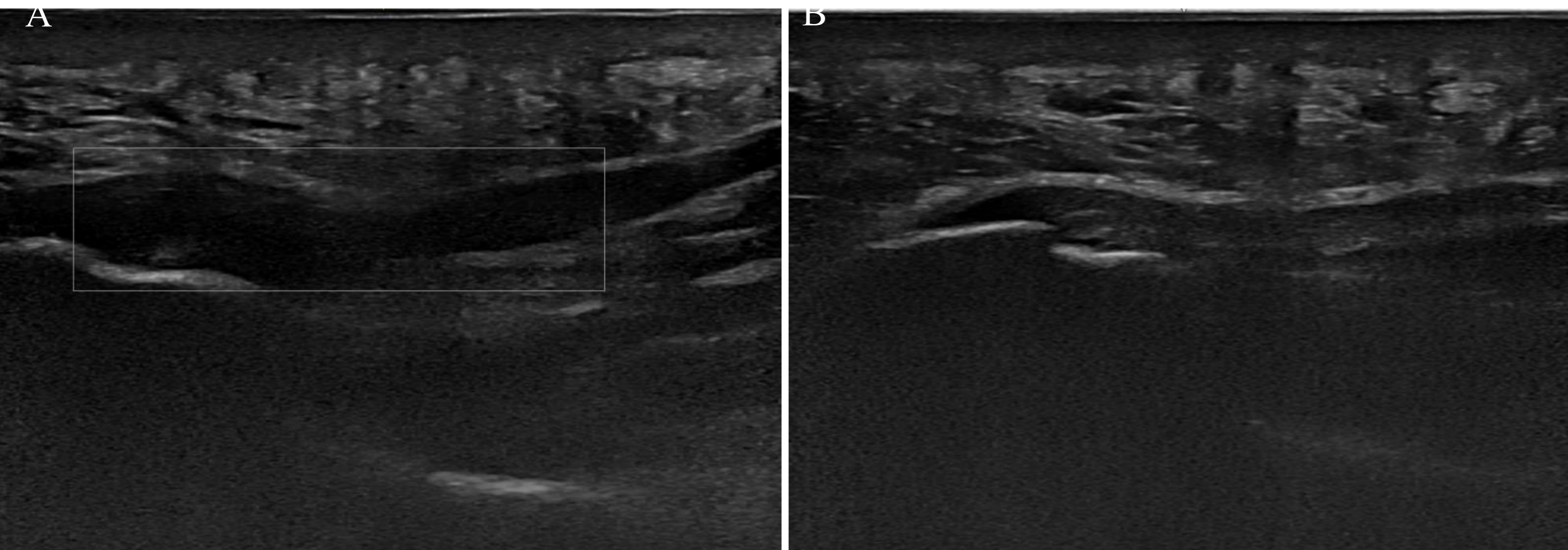


Figure 3. Ultrasound findings of the plantar fascia. (A) Right (affected) plantar fascia: Marked thickening (thickness: 0.69 cm), hypoechogenicity, and irregular contour at the medial calcaneal tubercle, suggestive of plantar fascia tear. (B) Left (contralateral) plantar fascia: Relatively preserved thickness (0.34 cm) with normal fibrillar architecture compared to the affected side.

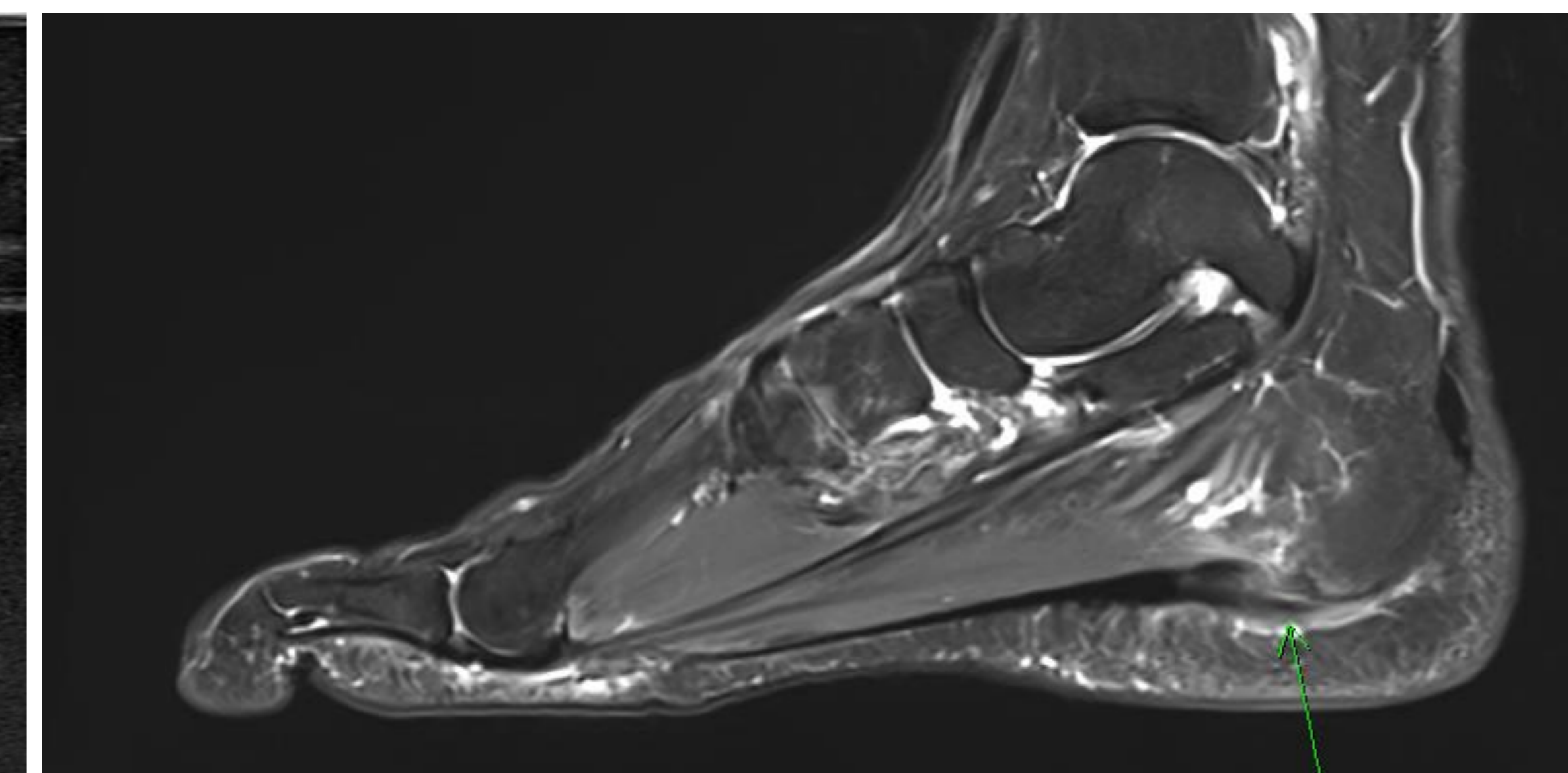


Figure 4. Sagittal T2-weighted fat-suppressed MRI of the right foot. Partial tear of the medial plantar fascia at the calcaneal insertion, showing proximal thickening, fiber discontinuity, and prominent intrafascial high signal intensity.

Based on ultrasound and MRI findings, the patient was diagnosed with a plantar fascia tear. The patient underwent conservative management but was lost to follow-up.

Conclusion

We report two cases of plantar fascia tear confirmed by MR-ultrasound correlation. These cases highlight the importance of careful ultrasonographic assessment in patients with plantar heel pain. In addition to thickening and hypoechogenicity, findings such as irregular thickness, wavy contour, or focal thinning should raise suspicion for plantar fascia tear. Given that accurate diagnosis directly influences management, MRI should be considered when US findings are atypical or symptoms are severe. Recognition of MR–US correlation enhances diagnostic accuracy and facilitates appropriate management.