

Brief Communication

Medial Sesamoid Bone Avulsion but not Plantar Fasciitis: Ultrasonographic Diagnosis Using Sonopalpation

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A 21-year-old female was referred for an ultrasound (US) examination with a likely diagnosis of plantar fasciitis. On questioning, she declared that she had intermittent right medial heel pain which worsened after walks. She added that the pain gradually developed after she had stumbled over a stone half a year ago. On US, plantar fasciae appeared normal in echogenicity and thickness. Meanwhile, she also pointed another painful area at her medial fore foot and the US evaluation was extended accordingly. With sonopalpation, a disrupted medial sesamoid bone and a thickened, hypervascular deep intersesamoid ligament were uncovered (Fig. 1A). A bony fragment was observed at the insertion of the medial tendon slip of the flexor hallucis brevis muscle as well (Fig. 1B). As such, the patient was diagnosed with a medial sesamoid bone avulsion fracture and we considered that her heel pain originated from overstrain of the plantar fascia during the push off phase of the gait cycle to decrease irritation on her medial forefoot.

Sesamoid bone fracture is not a common cause of metatarsalgia (1,2). Since the tendon slips of the flexor hallucis brevis muscle attach on the sesamoid bones, like in our case, an abrupt hyperextension force on the forefoot may result in avulsion injury of the hallux. Herewith, partition of the sesamoid is a normal variant that should be differentiated from a fractured sesamoid (3). The former is less likely to cause adjacent hypervascularity and overlap of the detached bony fragment on the main body. The above scenario highlights the importance of further scrutinizing in patients with symptoms of a particular diagnosis where US findings are inconsistent. Last but not least, it should always be kept in mind that sonopalpation is definitely paramount for prompt diagnosis especially for small bony cortical lesions which radiographs fail to capture (4).

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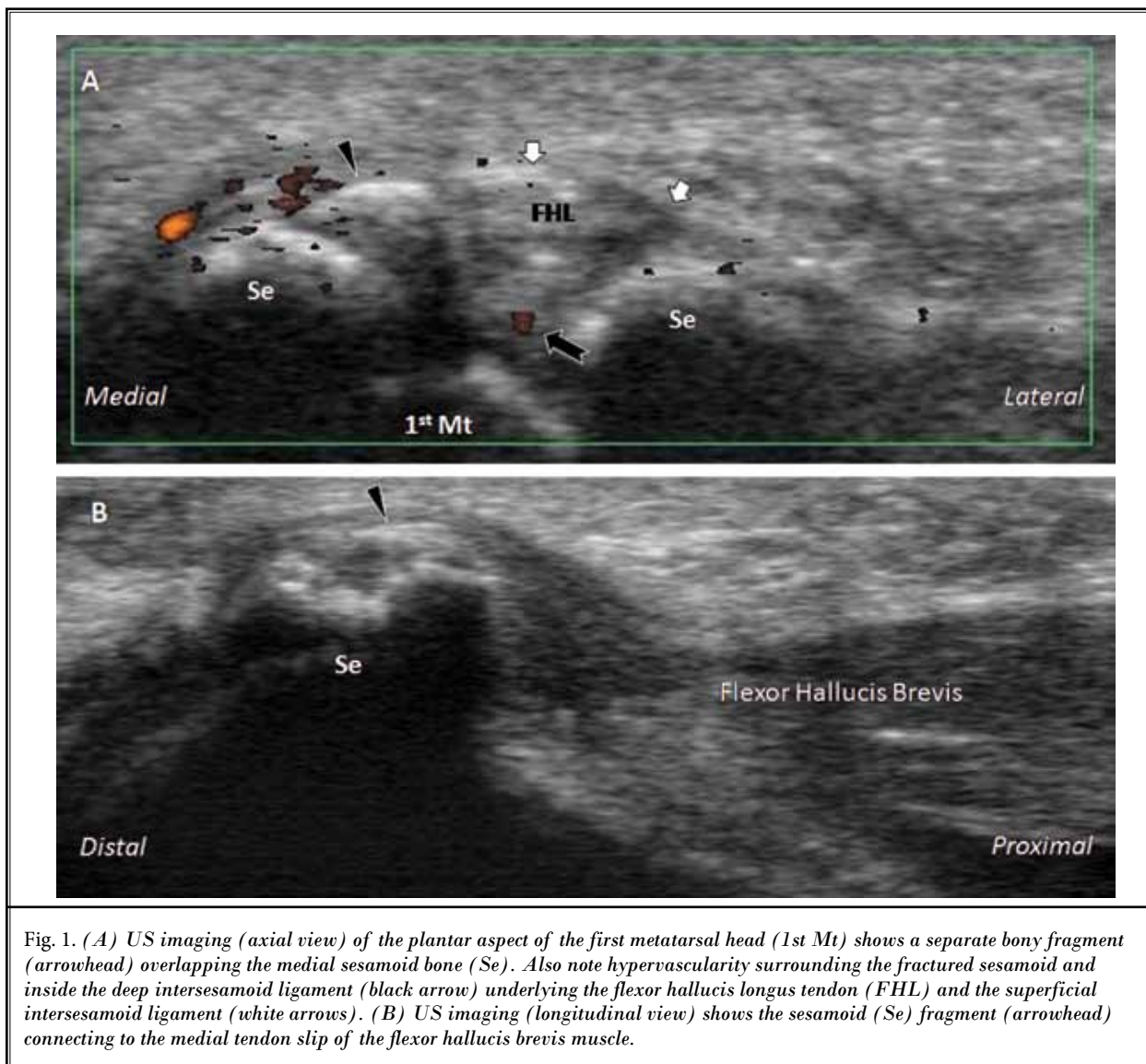


Fig. 1. (A) US imaging (axial view) of the plantar aspect of the first metatarsal head (1st Mt) shows a separate bony fragment (arrowhead) overlapping the medial sesamoid bone (Se). Also note hypervascularity surrounding the fractured sesamoid and inside the deep intersesamoid ligament (black arrow) underlying the flexor hallucis longus tendon (FHL) and the superficial intersesamoid ligament (white arrows). (B) US imaging (longitudinal view) shows the sesamoid (Se) fragment (arrowhead) connecting to the medial tendon slip of the flexor hallucis brevis muscle.

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