

Compression of Lateral Plantar Nerve Caused By Flexor Digitorum Accessorius Longus: A Case Report.

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INTRODUCTION: The flexor digitorum accessorius longus (FDAL) is an anomalous muscle with a reported prevalence of 2%-8% in cadaveric studies. The exact function of the muscle and its role in the functioning in the foot remains unknown. The FDAL can originate from many posterior compartment structures, including the flexor retinaculum, the tibia, the fibula, the flexor hallucis longus, and the soleus. The FDAL courses through the tarsal tunnel, where it remains muscular until just prior to exiting and it has been reported as an etiology of tarsal tunnel syndrome through prior case reports. The FDAL is intimately related to the neurovascular bundle and may compress or impinge upon the lateral plantar nerves, but very few cases have been reported of symptoms of compression of lateral plantar nerve caused by FDAL.

CASE REPORT

A 51-year-old man complained of insidious pain at lateral sole and hypoesthesia at left 3-5th toe and lateral sole that had developed for 2 months. On initial physical examination, the motor function was not significantly impaired. Allodynia was present in the area of lateral sole and hypoesthesia was noticed from left lateral sole and 4,5th toe at all sensory exam modality (light touch, pinprick). (Figure 1) Deep tendon reflex was normoactive at bilateral lower extremity and there was no pathologic reflex

observed.

Ankle MRI was performed and result revealed an accessory flexor digitorum longus muscle. FDAL was located posterior and medial to the neurovascular bundle and mild edema at the FDAL in the tarsal tunnel was noted. Also, focal mild swelling and enhancement at the lateral plantar nerve was noted, just posterior to the medial edge of bony tarsal tunnel. On sonography, swelling of lateral plantar nerve caused by flexor digitorum accessories longus muscle (13.7 x 9.9 x 25.7mm) was observed.

Nerve conduction study and routine needle EMG including abductor hallucis was within normal limit, but needle EMG showed abnormal spontaneous activities and polyphasic motor unit action potentials with reduced recruitment patterns in flexor digitorum accessorius longus.

Sonography-guided 5% dextrose injection at lateral plantar nerve was done. After 2 weeks, pain and hypoesthesia were 50% improved. One month later, ultrasound-guided botulinum toxin injection (50IU) was done to reduce FDAL muscle volume and compression of lateral plantar nerve. (Figure 3) After treatment, symptom was alleviated and patient was discharged from hospital.

CONCLUSION: The flexor digitorum accessorius longus (FDAL) is an anomalous muscle and compression of lateral plantar nerve caused by FDAL is rare. In this case, lateral sole pain and hypoesthesia of the patient was caused by compression of lateral plantar nerve with the FDAL muscle. In this process, imaging study and detailed electrophysiological study were helpful for diagnosis of FDAL muscle and sonography-guided prolotherapy and botulinum toxin injection was effective for treatment.



Figure 1. The patient complained of insidious pain at lateral sole and hypoesthesia at left 3-5th toe and lateral sole.

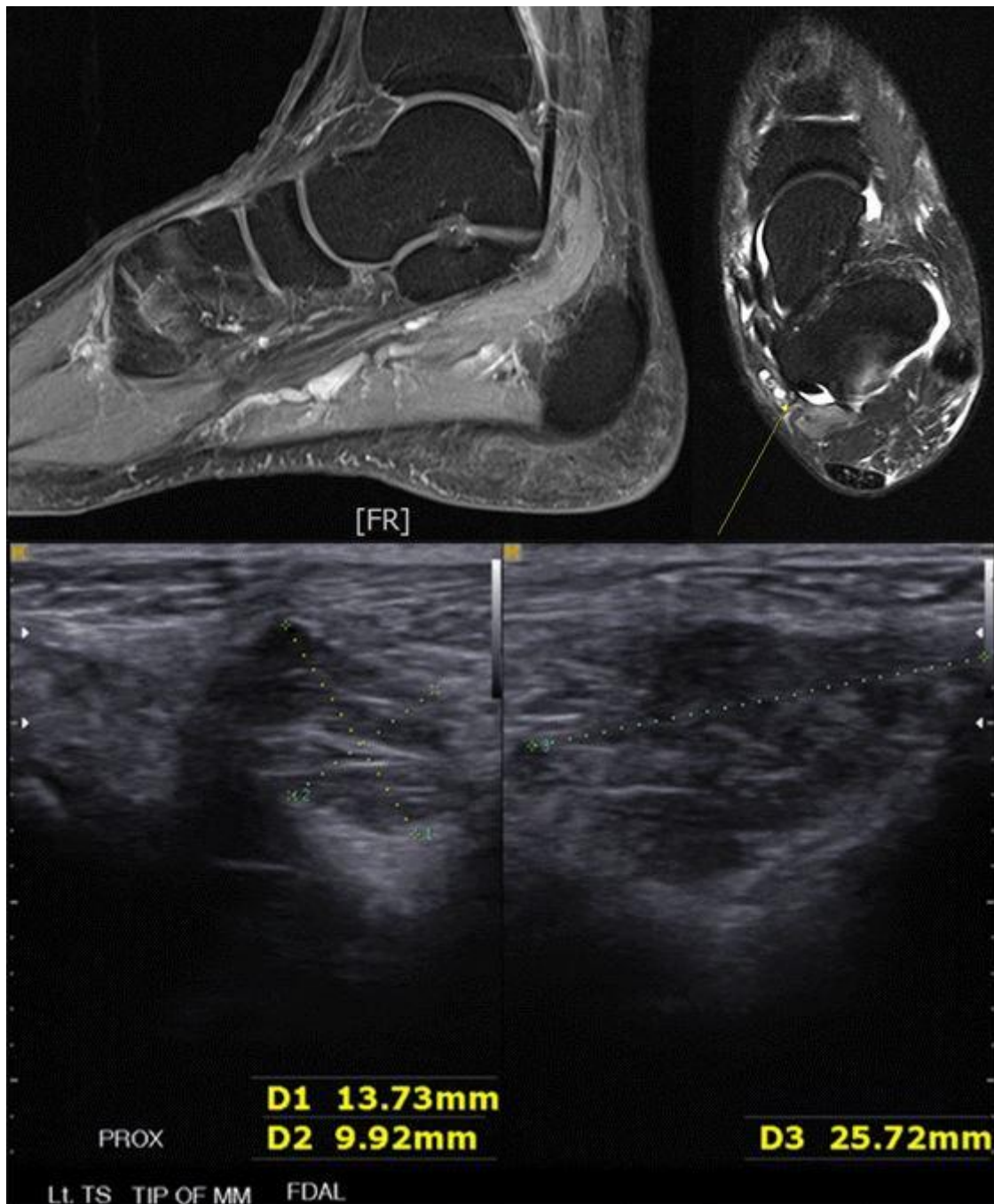


Figure 2. Ankle MRI revealed an accessory flexor digitorum longus muscles located posterior and medial to the neurovascular bundle. Mild edema at the FDAL and focal mild swelling and enhancement at the lateral plantar nerve (arrow) was noted. On sonography, flexor digitorum accessories longus muscle (13.7 x 9.9 x 25.7mm) was observed in the left tarsal tunnel, tip of medial malleolus.



Figure 3. Ultrasound-guided botulinum toxin injection (50IU) was done to reduce FDAL muscle volume and compression of lateral plantar nerve.