

MSK Ultrasound Clinical Case Study

FHL effusion causing foot paraesthesia



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Graduated with a degree in radiography from Newcastle University in 2009 and completed a post-graduate diploma in Medical Ultrasound at Queensland University of Technology (QUT) in 2013. Aaron has a special interest in MSK ultrasound borne out of a passion for sport.

Introduction

A 47-year-old male truck driver presented with paraesthesia in his right foot after 15 hours of continuous driving.

Case Study

Ultrasound imaging of the right foot was requested, and the examination was performed on the Canon Aplio i800 /

Prism Edition using an 18 MHz matrix transducer (PLI-1205BX). The foot was dorsiflexed during scanning to replicate the foot position causing symptoms.

An effusion of the flexor hallucis longus (FHL) tendon sheath was identified. Its relationship to the tibial nerve was determined, and dynamic imaging demonstrated the effect the tendon movement had on compression and irritation of the tibial nerve. To alleviate symptoms, the effusion was aspirated and a HCLA injection was performed. This resolved the patient's symptoms.

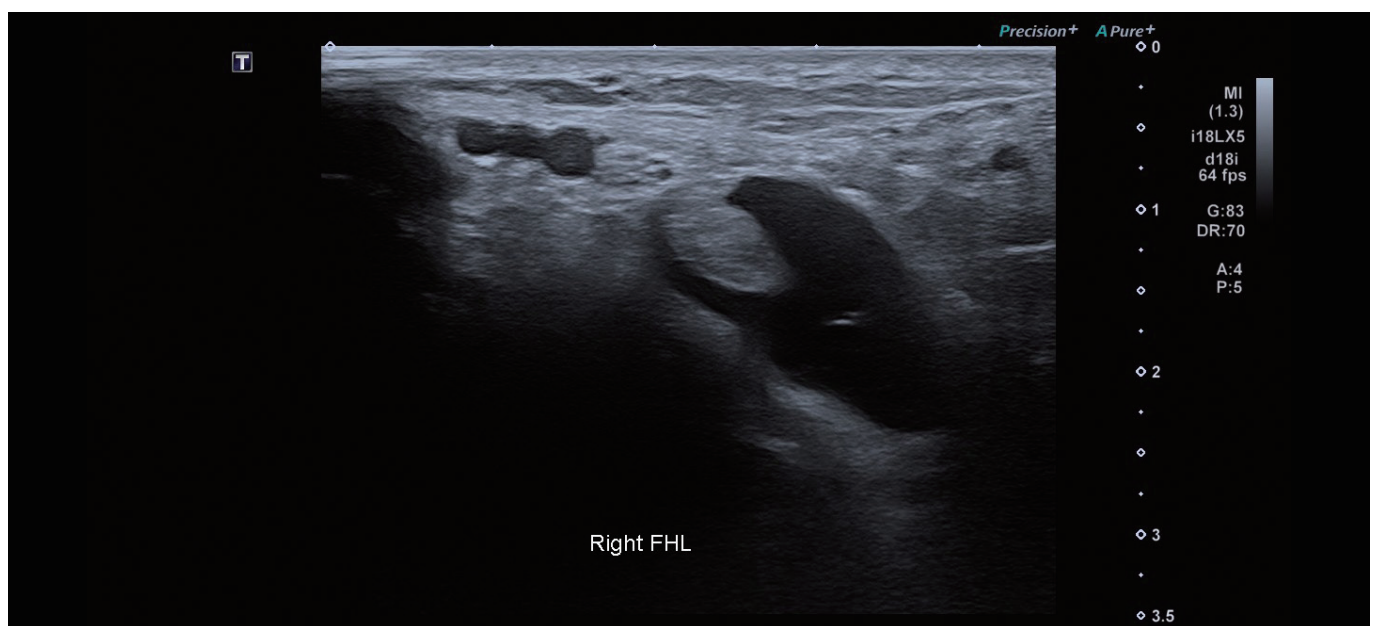


Figure 1 Fluid can be seen within the tendon sheath of the FHL.

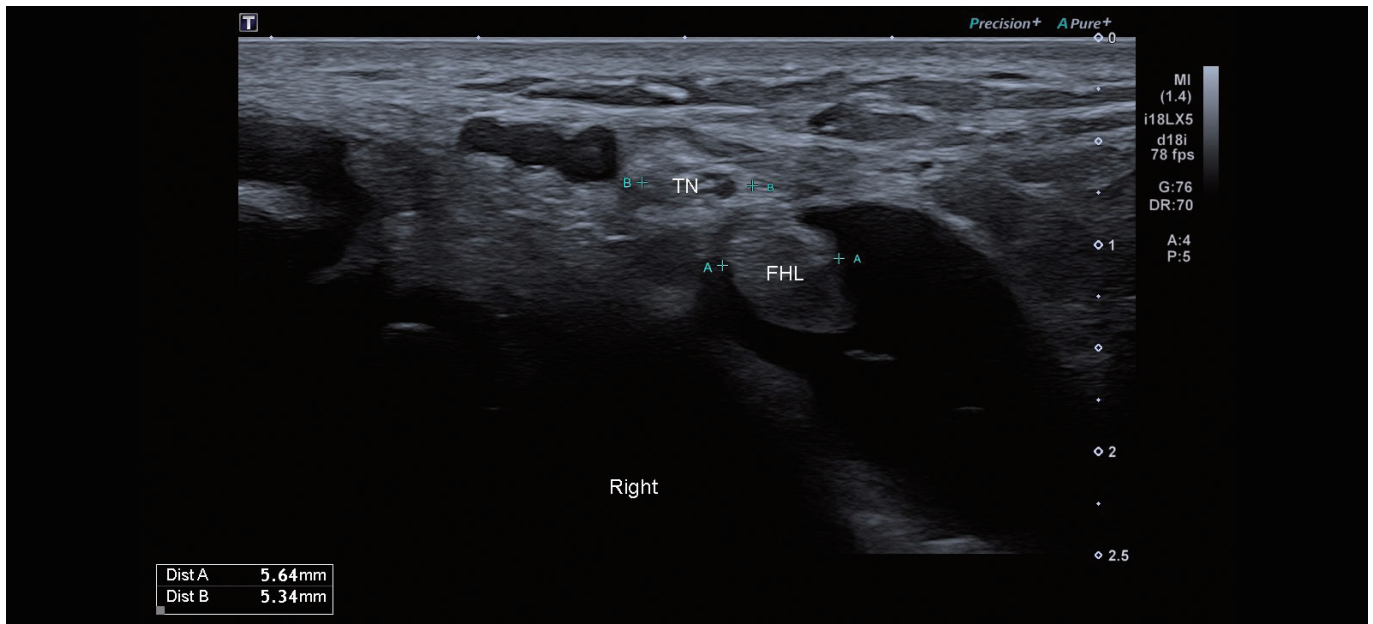


Figure 2 Close location between the tibial nerve and flexor hallucis longus was demonstrated. Dynamic imaging showed tibial nerve irritation with movement of the flexor hallucis longus.

Discussion

The Aplio i800 / Prism Edition delivers high quality spatial and contrast resolution, allowing greater conspicuity and differentiation of nerves from their surrounding structures. The system offers a range of high frequency transducers and is compatible with Canon's linear matrix broadband transducers, covering 9 MHz, 11 MHz, 18 MHz, 24 MHz and 33 MHz. Two hockey stick transducers (17 MHz and 22 MHz) and an extensive range of matrix curved transducers (8 MHz, 10 MHz and 11 MHz) are also available, offering complete high-end, whole-body coverage.

Canon's latest intelligent Dynamic Micro-Slice (iDMS) technology takes matrix transducers to the next level, allowing further electronic control of each individual crystal, so that matrix transducers can generate a very fine beam from the near field to the far field. This creates an image that is in 'Full Focus' without needing a dedicated focal zone.

Canon's new iBeam+ technology refines the transmission, reception, and processing of the ultrasound beam to produce images of high quality, giving greater clinical confidence in MSK diagnosis and allowing users to deliver better patient outcomes.

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Results may vary due to clinical setting, patient presentation and other factors.

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