

Type II de Quervain's disease: depicting subcompartmentalisation with ultrasound

Ricardo Pereira Dias  , João Janeiro 

Serviço de Imagiologia Geral,
Centro Hospitalar Universitário
Lisboa Norte EPE, Lisboa,
Portugal

Correspondence to

Dr Ricardo Pereira Dias;
pereira.dias.ricardo@gmail.com

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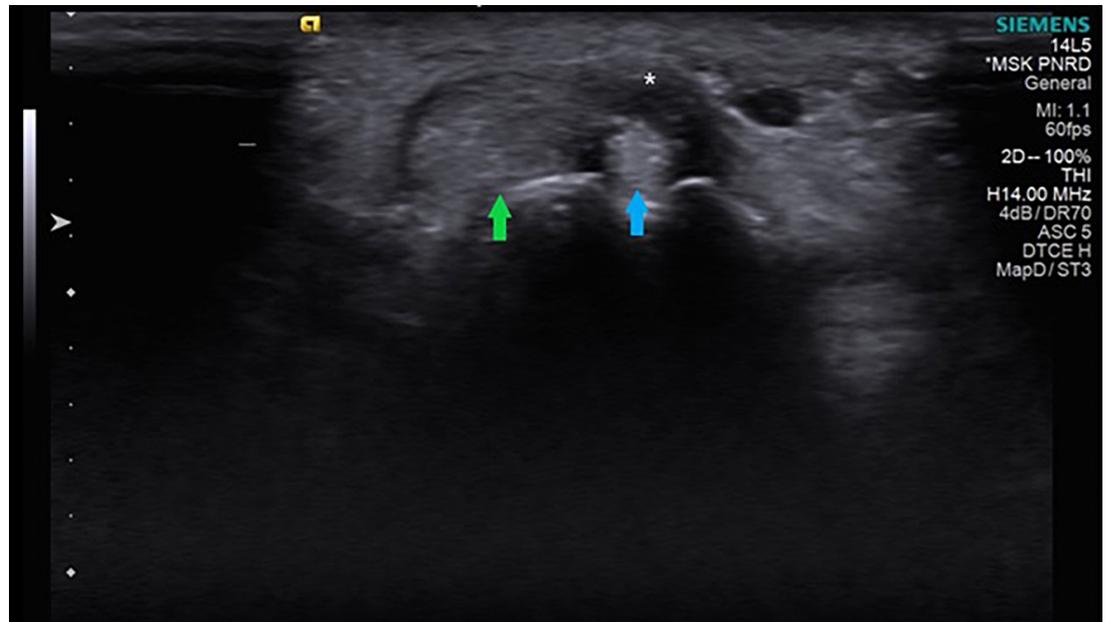


Figure 1 Axial view of the first compartment at the level of the radial styloid process, showing the thickened retinaculum (*) embedding only the extensor pollicis brevis (blue arrow). The abductor pollicis longus (green arrow) is unremarkable.

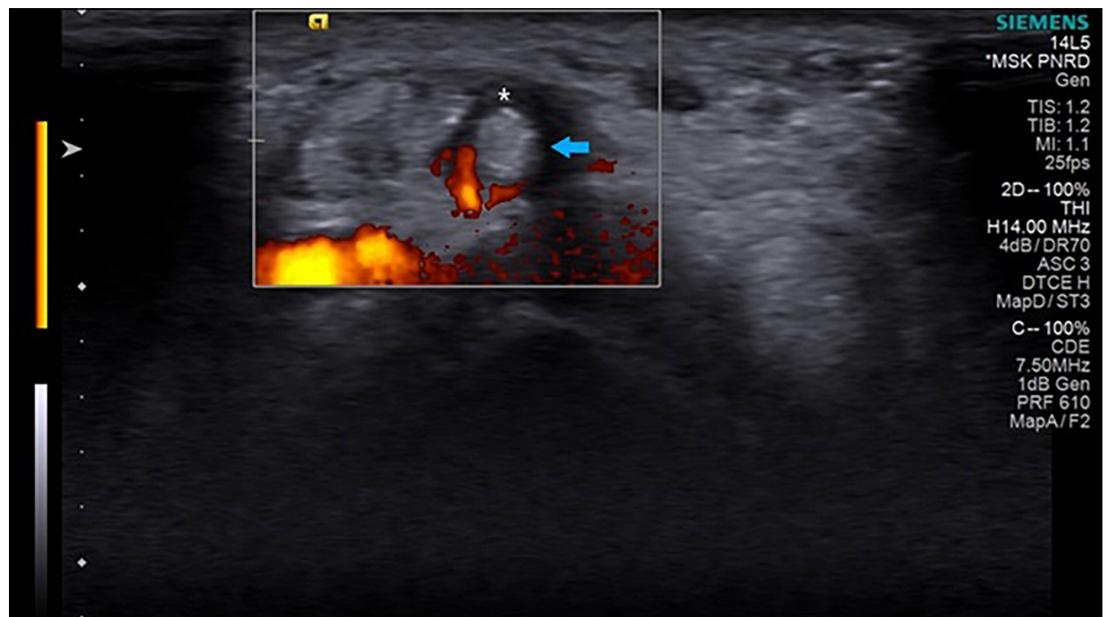


Figure 2 Axial view of the first compartment at the level of the radial styloid process, showing hypervascularity of the thickened retinaculum (*) embedding only the extensor pollicis brevis (blue arrow).

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DESCRIPTION

A 62-year-old female patient presented with left radial side wrist pain for the past 4 weeks. She

denied any history of trauma. On physical examination, she had swelling and tenderness to palpation in the first dorsal compartment with a positive

Images in...

Finkelstein's test. On ultrasound, the first extensor compartment revealed complete septation with a thickened retinaculum only embedding the extensor pollicis brevis (EPB) tendon (**figure 1**) associated with hypervascularity and small tendon sheath effusion (**figure 2**). The abductor pollicis longus (APL) tendon was unremarkable. The patient was diagnosed with type II de Quervain's disease (DQD) and conservative management was pursued including non-steroidal anti-inflammatory drugs (NSAIDs) and physical therapy that resulted in significant clinical improvement.

DQD is a stenosing tenosynovitis of the APL and EPB tendons in the first extensor compartment of the wrist.¹ Metaplastic changes increase the thickness of the extensor retinaculum of the first compartment and reduce its cross-sectional area causing impingement of the APL and EPB. Instead of an inflammatory aetiology, a degenerative mechanism has been proposed after the observation of myxoid degeneration of the APL and EPB tendon sheaths in biopsies of DQD patients.² Indeed, a case-control study found that a thickened retinaculum was found in all DQD patients and that inflammatory involvement of tendons was an inconstant feature.³

Although there are many non-modifiable factors (such as older age, female gender and anatomic variations) that contribute to DQD, modifiable (work-related) factors have not been recognised as risk factors.³ Indeed, a systematic review and meta-analysis concluded there was no causal relationship between occupational risk factors and DQD.⁴ Still, it is plausible that work-related activity may aggravate the wrist pain in DQD patients or in those predisposed to develop DQD.

The most common pattern is one or two APLs and one EPB in a single compartment,^{5 6} but several anatomic variations in the number of tendons and division pattern of this compartment have been described. Indeed, four types were classified by

Hiranuma *et al*⁷: (type 1) APL and EPB share the same sheath; (type 2) complete septation, APL and EPB have separate tendon sheaths; (type 3) incomplete septation, APL and EPB have separate tendon sheaths only in the distal portion and (type 4) EPB-lacking type, tendon sheath is normal but lacks EPB.

When subcompartmentalisation is present in patients with DQD, the EPB is frequently more affected than the APL.⁵ The efficacy of steroid injections is dependent on its correct administration within the pathological subcompartment.⁵ Likewise, surgical treatment can be ineffective if the tendon sheath of the pathologic subcompartment remains unreleased.^{3 5 8}

This case should arouse awareness regarding subcompartmentalisation of the first extensor compartment of the wrist and how it can influence DQD treatment.

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ORCID iDs

Ricardo Pereira Dias <http://orcid.org/0000-0001-5905-8416>

João Janeiro <http://orcid.org/0000-0002-0198-3542>

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Learning points

- ▶ Ultrasound is a useful imaging technique for diagnosing de Quervain's disease.
- ▶ Ultrasound provides important information about anatomic variations within the first extensor compartment.
- ▶ Subcompartmentalisation should be detected as it allows proper steroid injection or surgical planning.

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