A 43-Year-Old Man with Radial-sided Wrist Pain

Chia-Wei Lee, Ke-Vin Chang

Department of Physical Medicine and Rehabilitation, National Taiwan University Hospital, Bei-Hu Branch, Taipei, Taiwan

Section 2 — Answer

A 43-year-old man complained of left radial-sided wrist pain for 9 months, which did not improve after physical therapy. He had pain and a snapping sensation during thumb movement. He came to an orthopedic clinic, where positive Finkelstein test was detected. He was referred to our department for an ultrasound examination. The longitudinal sonogram of the first dorsal wrist extensor compartment is presented in Figure 1. The transverse view of the dorsal wrist is presented in Figures 2A–2C. The Doppler imaging image is presented in Figure 3. What is your impression?

Interpretation

In the longitudinal view (Figure 1), the retinaculum over the first dorsal extensor compartment of the wrist appeared thickened. In the transverse view, we could clearly identify the abductor pollicis longus and one extensor pollicis brevis tendon, especially at the level proximal to the retinaculum (Figure 2C). The tendons at the retinaculum level appeared swollen but return to a normal size distal to the retinaculum level (Figure 2A). Hypervascularity inside the retinaculum indicated an inflammatory reaction (Figure 3). According to the ultrasound findings, the diagnosis was compatible with de Quervain disease.

Discussion

There are several differential diagnosis of radial-sided wrist pain, including de Quervain disease, intersection syndrome, or osteoarthritis of the wrist. If the patient had an antecedent trauma, scapholunate injury, fracture of the carpal bones or scaphoid avascular necrosis should be kept in mind [1,2]. The diagnosis of de Quervain disease can be made by detailed history taking and physical examination. However, some patients with typical presentations of de Quervain disease have poor response to physical therapy or palpation-guided corticosteroid injection. Hence, a comprehensive ultrasound examination is needed for validation of the diagnosis and scrutinizing any anatomical variants.

Under normal conditions, the first dorsal extensor compartment of the wrist accommodates the abductor pollicis longus and extensor pollicis brevis tendons.
However, certain anatomic variations such as intra-compartmental septum (between the abductor pollicis longus and extensor pollicis brevis tendons) or accessory tendons (usually multiple abductor pollicis longus tendons) were reported. These variations increase the risk of de Quervain disease [3,4]. With the dynamic test, (e.g., extension and abduction of the thumb), we can differentiate the abductor pollicis longus from the extensor pollicis brevis tendons. We can also observe the tendon gliding in the thickened retinaculum. With ultrasound guidance, we can inject corticosteroid precisely into each subcompartment if the septum exists.

In the present case, multiple tendons increased the volume inside the first dorsal extensor compartment of the wrist. The thickened retinaculum further hindered the tendon excursion inside the tendon sheath. Both factors led to the development of de Quervain disease. Although we believe the patient will have remarkable pain relief after ultrasound-guided corticosteroid injection, recurrence is anticipated due to existence of multiple intra-compartmental tendons and pathological thickening of the overlying retinaculum.

References