

# A Rare Ultrasound Finding in Carpal Tunnel Syndrome

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## SECTION 2 – ANSWER

### Case

A 60-year-old right-handed female presented with symptoms compatible with right carpal tunnel syndrome (CTS) for 1 year. Electrodiagnostic study confirmed the diagnosis of right CTS.

She was then referred to the physical medicine and rehabilitation (PM&R) ultrasound (US) clinic to receive US-guided perineural injection therapy of her right median nerve (MN) with 5% dextrose.

During the preliminary US scan of her right MN, a rare variant was found [Figures 1 and 2 and Video 1]. She

received the right MN perineural injection as planned [Figure 3].

### INTERPRETATION

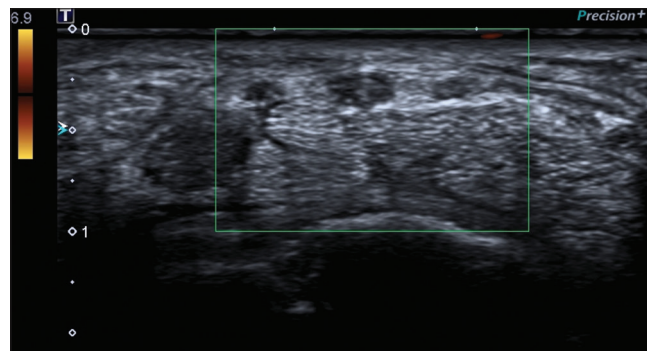
This is the case of a 60-year-old female with CTS and an associated rare anatomical variant: a trifold MN.

### DISCUSSION

A retrospective study of 194 wrist magnetic resonance imagings performed for various reasons at one institution revealed only



**Figure 1:** Ultrasound of the right median nerve within the carpal tunnel, transverse axis. FCR: Flexor carpi radialis tendon, FDS: Flexor digitorum superficialis tendon, FDP: Flexor digitorum profundus tendon, FPL: Flexor pollicis longus tendon



**Figure 2:** Ultrasound of the right median nerve within the carpal tunnel, transverse axis, with power Doppler activated

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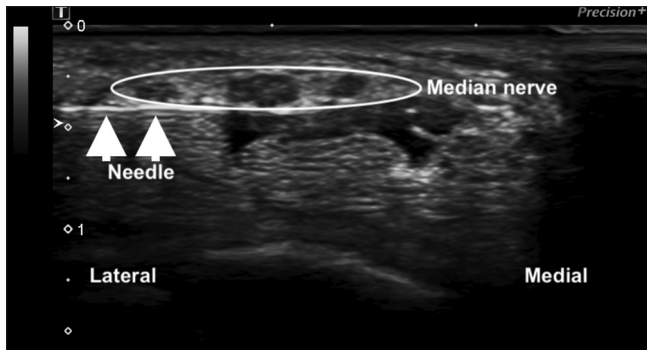
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**Figure 3:** Ultrasound-guided hydrodissection of the right median nerve, transverse axis, in-plane approach from lateral to medial

one case of trifold MN (0.5% prevalence), whereas the prevalence of bifid MN was 19% and 11% for persistent median artery.<sup>[1]</sup>

One case report of coexisting bifid and trifold MN s in a patient with bilateral carpal tunnel has been published.<sup>[2]</sup> Furthermore, a case of persistent median artery in association with a trifold MN has been described.<sup>[3]</sup>

Because so few cases have been reported in the literature, it is impossible to conclude as to whether this variant increases the risk of CTS. It remains important to recognize it, especially for a patient who will undergo carpal tunnel release surgery in order to properly decompress all three bundles.<sup>[4]</sup>

### Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Nil.

### Conflicts of interest

There are no conflicts of interest.

### REFERENCES

1. Pierre-Jerome C, Smitson RD Jr., Shah RK, Moncayo V, Abdelnoor M, Terk MR, *et al.* MRI of the median nerve and median artery in the carpal tunnel: Prevalence of their anatomical variations and clinical significance. *Surg Radiol Anat* 2010;32:315-22.
2. Duymus M, Yilmaz O, Ulasli AM, Asal N, Kosar U. Coexistence of trifold and bifid median nerve in a patient with bilateral carpal tunnel syndrome. *Turk Neurosurg* 2013;23:685-7.
3. Ch  vez-L  pez MA, Tello-Esparza A. Trifold median nerve associated with persistent median artery. *J Clin Rheumatol* 2015;21:102.
4. Cai H, Annaswamy TM. Trifold median nerve-A rare variant in a patient with carpal tunnel syndrome. *Am J Phys Med Rehabil* 2018. doi:10.1097/PHM.0000000000001057.