Entrapped ulnar nerve by flexor carpi ulnaris tendon: case illustration

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A 57-YEAR-OLD right-handed female delicatessen worker presented with a 2-year history of progressive dominant-hand weakness. Ulnar-sided wrist pain occurred with work-related repetitive wrist movements. Examination revealed severe ulnar clawing of the hand, with minimal ulnar-innervated intrinsic hand muscles function, normal flexor carpi ulnaris (FCU) and fingers flexor function, and normal sensitivity. Electrodiagnostic studies showed more significant changes in right distal ulnar nerve motor conduction than in sensory conduction, and active denervation in abductor digiti minimi and interossei muscles. MRI featured a focal signal abnormality of the ulnar nerve proximal to Guyon's canal without defined lesion.

Surgery at the distal forearm level revealed a splitting of the ulnar nerve with a neural loop passing through the FCU tendon before rejoining the main trunk proximally to the pisiform bone (Fig. 1A and B). Passive wrist motion resulted in traction of the ulnar nerve by the FCU tendon. The involved part of the FCU tendon, representing approximately one-fifth of the total tendon, was sectioned to release the neural loop (Fig. 1C and D). At 1-year follow-up the patient showed a significantly improved hand deformity with no pain recurrence, and electromyography confirmed reinnervation in the first dorsal interosseous muscle.

Entrapment of an ulnar nerve loop through the FCU tendon, although seldom reported, usually presents with wrist pain and sensory disturbance^{1,3} aggravated by hand use,^{4,5} whereas isolated motor presentation usually results from more distal entrapment at Guyon's canal, after the nerve branching. The constant location of the motor fascicle within the ulnar nerve in the forearm² may explain the unusual presentation described in this report.

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Disclosures

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Author Contributions

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FIG. 1. Intraoperative photograph (A) and illustration (B) of an abnormal recurrent branch of the medial ulnar nerve (a) penetrating the FCU tendon (b) before joining the main trunk (c) and entering Guyon's canal along with the ulnar artery (d), at the distal forearm level. The FCU tendon was involved proximally to its insertion into the pisiform bone (e). Intraoperative photograph (C) and illustration (D) of the ulnar nerve loop (a) after its release from the FCU tendon (b).