Teaching NeuroImage: Palmaris Brevis Sign: Clue to Localizing Ulnar Nerve Neuropathy

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Vasudeva G Iyer: Drafting/revision of the manuscript for content, including medical writing for content; Major role in the acquisition of data; Study concept or design; Analysis or interpretation of data

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A 65-year-old male sustained penetrating injury to the base of the hypothenar area from a slipped drill bit. Severe weakness of ulnar nerve-innervated intrinsic hand muscles was noted with normal sensations in digits 4 and 5. Attempt at abduction of small finger against resistance caused puckering of skin from contraction of palmaris brevis (Figure, A).

In ulnar nerve injuries at the Guyon’s canal, intact contraction of palmaris brevis localizes the injury to site 2 (Figure, B) distal to the origin of the superficial branch of the ulnar nerve (which in addition to carrying sensations from digit 5 and ulnar side of digit 4 also provides motor innervation to palmaris brevis). This finding has been previously referred to as palmaris brevis sign.¹,²

Nerve conduction and EMG studies in this patient confirmed the location of ulnar nerve injury to site 2 at the Guyon’s canal.

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References:

Figure 1. Ulnar nerve injury at Guyon’s canal: Localization

A: Puckering of skin (arrow) from normal contraction of palmaris brevis muscle. Note scar from drill bit injury.

B: Guyon’s canal lesions at site 2 involve deep motor (Red), but spare superficial sensory (Green) branch of the ulnar nerve, which innervates palmaris brevis (PB). Lesions at sites 1 and 3 paralyze PB.
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