

## **Interfascicular Anatomy of the Motor Branch of the Ulnar Nerve: A Cadaveric Study**

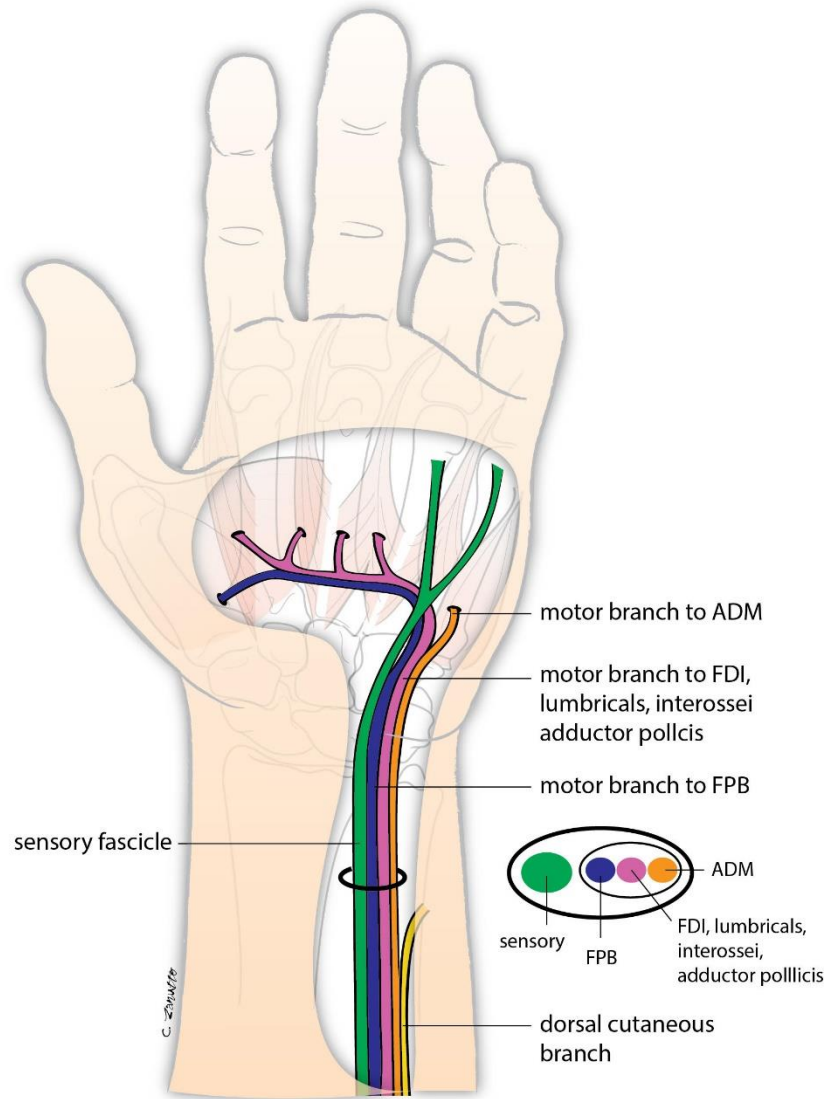
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**Introduction/Purpose:** The motor branch of the ulnar nerve contains fascicles that innervate the intrinsic musculature of the hand. The internal topography within the motor branch has yet to be reported.

**Methods:** Five fresh frozen cadaveric specimens with an average age of 74 years were dissected. The ulnar nerve was exposed and transfixed to underlying tissues to maintain its orientation throughout dissection. The fascicle to the first dorsal interossei (FDI), flexor pollicis brevis (FPB), and abductor digiti mini (ADM) were identified as they entered respective muscles. Internal neurolysis was performed to identify the interfascicular arrangement of these fascicles. The insertion and take off of specific motor fascicles was measured using a 3D surface scanner with 0.05mm accuracy and recorded relative to the pisiform.

**Results:** The internal topography of the motor branch was consistent among all specimens. Proximal to the pisiform, the arrangement from radial to ulnar was volar sensory branch (VSB), FPB, FDI/intrinsic muscles, ADM, dorsal cutaneous branch (DCB). The position of these branches remained consistent as the deep motor branch curved radially within the palm and travelled to terminal musculature (**Figure 1**). The location of the average branch points of the FDI, ADM, and DCB with respect to the pisiform were as follows; FDI: 4.6cm distal (range: 4.1-4.9 cm), 4.5cm radial (range: 4.1-4.9 cm). ADM 0.65cm distal (range: 0.3-1.1 cm), 0.7cm radial (range: 0.3-1.1 cm). DCB 7.7cm proximal (range: 4.2-10.1 cm), 0.4 cm ulnar (range: 0.3-0.8 cm).

**Conclusions:** The internal topography of the ulnar nerve motor branch was consistent among specimens studied. This work may inform clinical interventions targeting specific muscular branches during nerve transfers.



**Figure 1: Arrangement of Muscular Fascicles of the Ulnar Nerve**