

Split median nerve with variation in its common digital branch — a case report

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ABSTRACT

Anatomical variations of median nerve are frequent. We report a split median nerve 5 cm proximal to the flexor retinaculum. This split portion of the median nerve continued distally as common palmar digital nerve, which further divided into two proper palmar digital branches, found to be peculiar in their course and distribution. The probable diagnostic and clinical significance of this variant are discussed. © *Neuroanatomy*. 2008; 7: 15–16.

Key words [split median nerve] [common palmar digital nerve] [clinical significance]

Introduction

Knowledge of the variable anatomy of the nerve could help to avoid incomplete decompression at operations for carpal-tunnel entrapment [1]. Anatomical variation of median nerve at the wrist level is important in repair of traumatic injuries of the wrist and in surgical treatment of carpal tunnel syndrome [2]. Anomalies of median nerve have been precisely described by Lanz and can be classified into four types; *a*) motor branch variations, *b*) distally arising accessory branch, *c*) high division of median nerve, and *d*) proximally arising accessory branch [3]. Classical description of five terminal sensitive and motor branches of median nerve is not constant. Variations of median nerve at wrist are frequent, unknown and wrong indexed [4].

Case Report

During routine dissection of the right upper limb of 52-year-old male cadaver, we came across the variation of median nerve, which split 5 cm proximal to the flexor retinaculum. This split portion of the median nerve continued distally as a common palmar digital nerve, which passed anterior to the long flexor tendons and just proximal to the web space between middle and ring finger, divided into two proper palmar digital nerves, one medial and one lateral in position. The lateral branch split again into two and transmitted the common palmar digital branch of ulnar artery through the gap between them, just before reunion a branch is given off, which supply the medial side of the middle finger. Further

distally both rami reunite, from the reunited portion a branch is given off, which supply the medial side of the middle finger. Lateral side of the ring finger supplied by medial branch of the proper palmar digital nerve. In this case the superficial palmar arch found to be incomplete. The findings of the left upper limb of the cadaver were normal. The main trunk of the nerve gave off two common palmar digital nerves that present a normal course and distribution (Figure 1).

Discussion

Awareness of anatomical variations of peripheral nerves is important in repair of traumatic injuries and treatment of compression syndrome of these nerves [2]. Cases of a split median nerve are observed during surgical interventions or anatomical dissections, more rarely during pre-operative ultrasound or magnetic resonance imaging with an incidence of 1-3% (2.8% according to the Lanz's study) [5]. The division occurs at different levels but most typically within the distal third of the forearm [3].

During endoscopic carpal tunnel release, the split median nerve at the wrist may cause common digital nerve injury [6], thereby forcing the surgeon to convert endoscopic to open release [7].

In routine procedure, sensory conduction velocity of median nerve is measured by placing the recording electrode 3 cm proximal to the distal wrist crease [8]. We conclude that in case of split median nerve, the recording

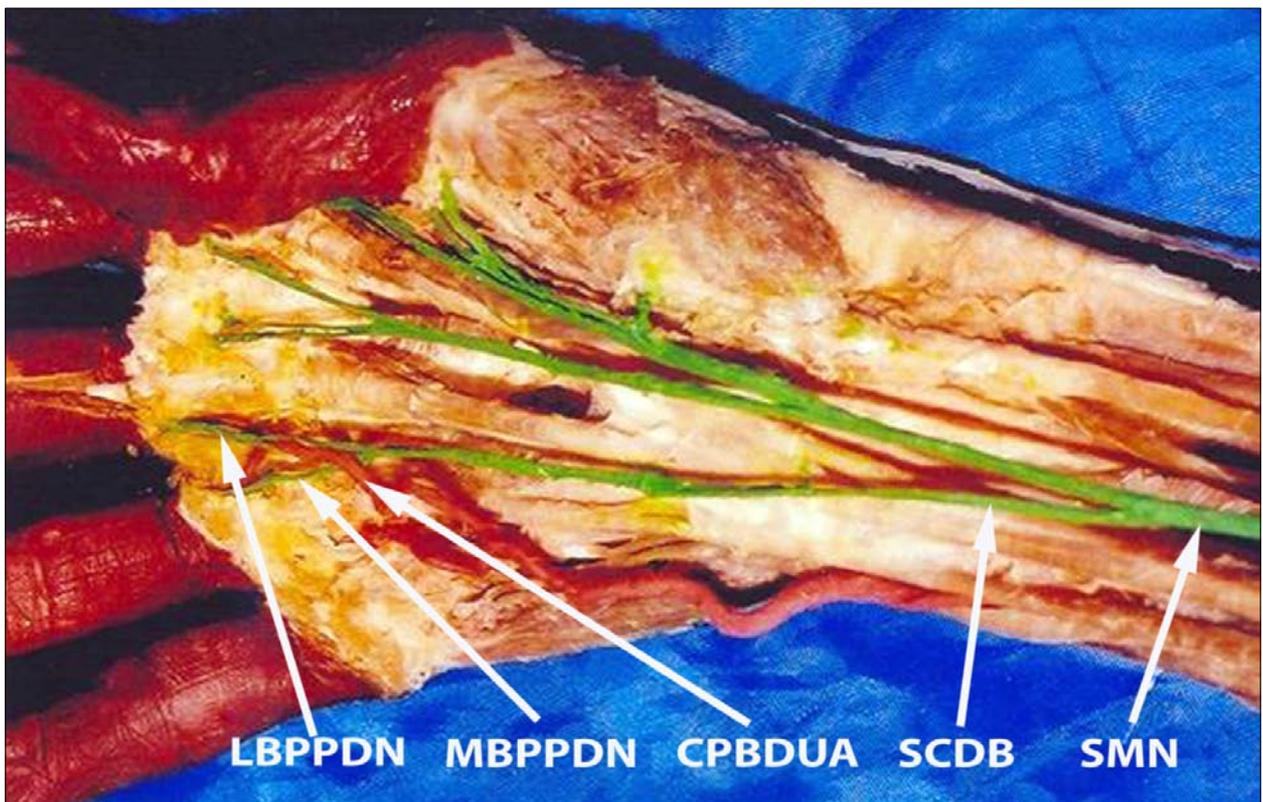


Figure 1. Anterior view of the right upper limb (distal part of the forearm and palm). Color version of figure is available online. (*SMN*: split median nerve; *SCDB*: separate common digital branch from the split median nerve; *LBPPDN*: lateral branch of proper palmar digital nerve; *CPBDUA*: common palmar digital branch of ulnar artery; *MBPPDN*: medial branch of proper palmar digital nerve)

electrode may be placed 5 cm proximal to the distal wrist crease, and an additional recording can be done, which

will be of diagnostic value in the treatment of median nerve entrapment syndrome.

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