The Palmar Cutaneous Branch Mimicking the Recurrent Motor Branch of the Median Nerve

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Abstract

Keywords

- median nerve
- palmar cutaneous branch
- recurrent motor branch
- carpal tunnel syndrome

We report an unusual anatomical variant of the palmar cutaneous branch (PCB) of the median nerve in a 46-year-old man presenting with recurrent carpal tunnel syndrome. At surgery, after neurolysis, the PCB was visualized arising at the level of the proximal margin of the transverse carpal ligament, mimicking the appearance of the recurrent motor branch. To date, there has been no description of this branch arising at this level. We aim to remind surgeons of this variation and highlight the importance of maintaining vigilance to avoid iatrogenic nerve injury.

Introduction

We report an unusual variation of the palmar cutaneous branch (PCB) mimicking the recurrent motor branch (RMB) of the median nerve. We aim to remind surgeons of this anatomical variant and highlight the importance of maintaining vigilance to avoid iatrogenic nerve injury.

Case Report

A 46-year-old man presented with recurrent carpal tunnel syndrome 10 years following a successful carpal tunnel release performed under local anesthesia. He then underwent reexploration of the median nerve under general anesthesia. At surgery, the median nerve was found to be encased in scar tissue (►Fig. 1). After external neurolysis, a nerve branch of the median nerve was visualized arising from its ulnar aspect at the level of the distal wrist crease. This branch then coursed radially and distally into the thenar eminence (►Fig. 2). We initially thought this to be a variant anatomy of the RMB with high and subligamentous division. However, further distal dissection of the median nerve revealed a standard course of the RMB. Intraoperative direct nerve stimulation confirmed the distal division

to be the true extraligamentous RMB. The proximal division yielded no motor response (►Video 1), and further proximal exploration of the median nerve revealed no other side branches, therefore confirming it to be the PCB.

Discussion

The typical course of the PCB is a radial branch arising 5 cm proximal to the distal wrist flexion crease traveling on the ulnar aspect of the flexor carpi radialis (FCR) tendon before crossing the flexor retinaculum or entering the FCR sheath.¹ Great variations exist, however, including ulnar takeoff, traveling in different tissue planes, high and low takeoffs with a course ulnar to or through the palmaris longus tendon, and also the absence of the branch.^{1,2} To date, there has been no description of this branch arising at the level of the proximal margin of the transverse carpal ligament, mimicking the appearance of the RMB.

It has been suggested that a more ulnarly based carpal tunnel incision may reduce the risks of damaging the PCB and RMB.^{3,4} Such incision is not without risk either. The palmar cutaneous branch of the ulnar nerve³ and aberrant PCB of the median nerve with ulnar takeoff close to the wrist crease such as in this case are still at risk.

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Fig. 1 Dissection demonstrating the reconstituted transverse carpal ligament.

Fig. 2 Dissection demonstrating the PCB and RMB of the median nerve.

Video 1

Intraoperative nerve stimulation. Online content including video sequences viewable at: www.thiemeconnect.com/ejournals/html/doi/10.1055/s-0037-1618330.

Note

Informed consent was obtained from the patient for clinical photography and its use for publication.

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Conflict of Interest

None.

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