

CASE PRESENTATION: NEUROPHYSIOLOGICAL CONFIRMATION OF INJURY TO THE PALMAR BRANCHES OF THE ULNAR NERVE CAUSED BY PERIPHERAL VENOUS CATHETER PLACEMENT

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Background

A common site for peripheral venous cannulation is the dorsal surface of the hand. Although generally considered safe, a few cases of complications involving peripheral nerve injury have been reported in the literature.

Case report

A 70-year-old man was referred for electromyography due to reported numbness of the little finger on one side. The patient's history revealed that symptoms had started six months earlier, specifically after the removal of a peripheral venous catheter that had been placed for three days on the dorsal surface of the corresponding hand. Clinical examination showed mild atrophy of the first dorsal interosseous muscle and hypoesthesia of the little finger on the affected side. The SNAP of the ulnar nerve from the little finger on the affected side showed low amplitude and prolonged latency, with normal values on the contralateral side. The CMAP of the ulnar nerve recorded from the abductor digiti minimi muscle was normal bilaterally, without significant differences in conduction velocity between the wrist-below elbow and below elbow-above elbow segments. However, the CMAP recorded from the first dorsal interosseous muscle showed an amplitude of 6.2 mV on the affected side and 9.8 mV on the contralateral side, without significant differences in latency. Electromyographic examination of the first dorsal interosseous muscle revealed no spontaneous activity, but only mildly reduced recruitment of motor units on the affected side.

Conclusion

The combination of clinical and electrophysiological findings supports the diagnosis of axonal injury to the sensory branch of the ulnar nerve and, to a lesser extent, to the motor branch, sparing the branch to the abductor digiti minimi. The most likely causes are either direct injury during catheter removal or hematoma formation leading to compression of the affected branches.

Keywords: palmar branches, ulnar, catheter, electromyographic