

# ISOLATED COMPRESSION OF THE DEEP MOTOR BRANCH OF THE ULNAR NERVE IN A GUITAR PLAYER: ELECTRODIAGNOSTIC INSIGHTS

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## Background

The ulnar nerve, after its insertion to Guyon's canal divides into the superficial and the deep branch. The latter is a primarily motor nerve that innervates most of the intrinsic muscles of the hand. Injury of the deep branch is rare and it can be caused by overuse of the hand, due to occupation (e.g. musicians). The aim of this case report is to highlight the electrophysiological characteristics associated with this uncommon neuropathy in a professional guitar player.

## Case report

A 66-year-old right-handed female professional guitar player was referred to the KAT General Hospital Electromyography Unit (Kifissia, Greece) in July 2024. She had been playing the instrument since she was sixteen years old, three hours a day. She self-reported weakness of her left thumb and index finger during guitar playing, without tingling or numbness. Symptoms had started a year ago. Clinical examination revealed atrophy of her left 1st dorsal interosseous (DI) muscle, positive Froment sign and no sensory disorders. The sensory nerve action potential recorded from the left 5th digit was normal. The compound muscle action potential (CMAP) recorded from the left abductor digiti minimi was normal, without conduction velocity differences between the wrist-below elbow area and below elbow - above elbow area. However, the latency of the CMAP recorded from the 1st DI was 3.33 msec in the left side and 2.87 msec in the right side, while the amplitude was 5.2 mV in the left side and 8.9 mV in the right side. This amplitude difference of 40% was considered as significant. The needle electromyography examination in the left 1st DI revealed reduced recruitment with high amplitude motor units.

## Conclusion

This case highlights the importance of thorough electrophysiological evaluation in patients with atypical motor symptoms of the hand. Further investigation is warranted to identify potential etiologies and guide appropriate management.

**Keywords:** neuropathy, electromyography, musician, ulnar