



Evaluation of the function status of the ulnar nerve in carpal tunnel syndrome

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ABSTRACT. Many carpal tunnel syndrome (CTS) patients have symptoms in both the median and ulnar digits more frequently than in the median digits alone. This is possibly because of close anatomical contiguity of the carpal tunnel and Guyon's canal, and the high pressure may also affect the latter, causing indirect compression of ulnar nerve fibers. Thus, we evaluated the functional status of the ulnar nerve in patients with CTS in order to investigate the relationship between ulnar nerve impairment and sensory symptoms of the ulnar territory. Electrophysiological studies were conducted in CTS patients and healthy controls. CTS patients were divided into the mild/moderate group and severe group; they were further divided into the symptomatic and asymptomatic subgroups according to the sensory symptom of the fifth digit region. The findings suggest that CTS patients could have coexisting ulnar nerve wrist entrapments that might exacerbate the severity of CTS. Sensory impairment in the ulnar territory was observed more frequently in the mild/moderate stage of CTS, which is associated with ulnar nerve involvement. These findings also suggest that damage

to the ulnar nerve fibers caused by compression forces in Guyon's canal may underlie the ulnar spread of symptoms in CTS.

Key words: Carpal tunnel syndrome; Ulnar nerve; Nerve conduction; Electromyography