How to optimize the evaluation of carpal tunnel syndrome in patients with polyneuropathy?

Carpal tunnel syndrome (CTS) is the most frequent peripheral nerve entrapment.[1] Treatment decision depends on a combination of clinical criteria including tolerance of pain and presence of sensory or motor deficits and intensity of electrophysiological abnormalities. Existence of an underlying polyneuropathy in a patient with CTS may complicate the matters since standard electrophysiological explorations are often unable to differentiate abnormalities due to the polyneuropathy and the entrapment. However, in this situation, electrophysiological conclusions are especially important because carpal tunnel syndrome is more frequent in case of polyneuropathy, particularly in association with diabetes.[2] Furthermore, an early diagnosis of carpal tunnel entrapment may be warranted since the polyneuropathy frequently reduces nerve abilities to regenerate preventing a good outcome after treatment. On another hand, interpreting electrophysiological abnormalities in patients with polyneuropathy may lead to an over-diagnosis of CTS.

In the exploration of CTS, sensory conduction velocities are clearly more sensitive than motor conduction velocities to detect abnormalities.[3] However, in case of polyneuropathy, sensory nerves are often more severely involved. Comparison of median and ulnar sensory nerve velocities on the fourth digit or on two different digits is the usual method to differentiate the respective consequences of the neuropathy and the CTS on nerve conduction. Development or expertise of new tools is always interesting. In this issue, Tokçaer et al propose to study the palmar cutaneous nerve, a branch of the median nerve which does not pass through the carpal tunnel. The ratio of conduction velocities of this nerve and the first digit median nerve branch appears to be both sensitive and specific to detect a CTS in patients with an associated polyneuropathy and can thus be used in addition to conventional methods especially.

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References