

## TREATING CARPAL TUNNEL IN THE ELDERLY: EARLY ELECTRODIAGNOSTIC TESTING IS KEY

Prospects for a good outcome in the treatment of carpal tunnel syndrome diminish if intervention begins late, when the condition is far along.

Therefore, a key to success in dealing with this most common of entrapment neuropathies is to catch it in its earliest stages. This is especially the case for adults over the age of 50, suggest findings from the Albert Einstein College of Medicine's Montefiore Medical Center in New York.

The research also suggests that "greater attention needs to be paid to objective evidence of carpal tunnel syndrome severity rather than subjective complaints when evaluating elderly adults..." the investigators wrote in the journal *Muscle & Nerve*.

Other noteworthy observations by these same researchers: Symptoms of carpal tunnel syndrome in older patients can be ambiguous; the condition appears to progress more rapidly in the elderly population; and electrophysiologic abnormalities seem to be both more common and severe in the older subjects.

In consequence to these findings, it is advisable for primary-care physicians and other specialists to establish a low threshold for suspecting carpal tunnel syndrome. This is important for older adults who present complaints that their wrist, hand, palm or finger tingles, aches, feels numb or swollen. All of these symptoms can result in less gripping strength.

### RISK FACTORS

By way of reminder, carpal tunnel syndrome occurs following entrapment of the median nerve within the carpal tunnel, resulting in demyelination and then axonal degeneration.

Several theories exist to explain the cause of the syndrome, although likeliest is the existence of pressure within the carpal tunnel sufficient to obstruct venous outflow and produce back pressure, edema formation and nerve ischemia.

Risk factors include genetics, medical history, social status, vocations and avocations involving repetitive motions and demographics (whites are probably at highest risk; the female-to-male ratio is at least 3:1).

In the Montefiore study, researchers noticed that the incidence of carpal tunnel syndrome appears to peak in adults between the ages of 50 and 54, decreases after that and then climbs again to a second peak occurring between the ages of 75 and 84.



### MORE THAN AR MUSCLE WASTING

One of the objectives of the Montefiore study was to bolster the relatively thin understanding of the clinical and electrophysiologic characteristics of carpal tunnel syndrome in elderly adults.

"We examined age differences in clinical, functional and electrophysiologic features in elderly adults referred to a neuromuscular service for evaluation of symptoms suggestive of carpal tunnel syndrome," the researchers wrote in the journal's July 2006 issue. "Of 415 consecutive subjects referred over an 18 month period, 343 met clinical criteria for carpal tunnel syndrome. There were 158 young (less than 50 years), 115 middle-aged (51-64 years) and 70 elderly adults (over 65 years). Our findings are consistent with previous studies that found worsening electrophysiologic changes with increasing age."

Carpal tunnel syndrome in older adults is reported to be associated with more thenar muscle wasting, particularly diurnal paresthesias, and more severe motor and sensory axon loss. And indeed, in the Montefiore study, elderly adults demonstrated a higher prevalence of thenar weakness and thenar atrophy than younger subjects.

"There were also more patients with absent sensory potentials in the older group," the team wrote.

## EARLY DIAGNOSIS CRUCIAL

Approximately 90% of mild-to-moderate cases of carpal tunnel syndrome respond to conservative management. However, given that the condition is progressive, the earlier it is diagnosed the more likely it is to respond to conservative interventions.

Conservative management, of course, typically includes nighttime wrist splinting, use of nonsteroidal anti-inflammatory drugs (with or without diuretics), oral or injectable steroids and physical or occupational therapy.

Naturally, though, before commencing conservative management of carpal tunnel syndrome, the patient's complaint must be diagnosed as such. The "gold standard" of testing for carpal tunnel syndrome is an electrodiagnostic study performed by or under the direct supervision of a board-certified specialist adhering to testing standards and guidelines developed by the American Board of Electrodiagnostic Medicine.

The most relevant electrodiagnostic tests for diagnosing carpal tunnel syndrome are electromyography (EMG) and nerve conduction studies (NCS). In addition to identifying abnormalities associated with specific symptoms and signs of carpal tunnel syndrome, these two tests are capable of excluding other neurologic diagnoses.

Further, these tests can yield data of the sort necessary for accurately assessing the severity of nerve damage. Typically, testing that demonstrates nothing but sensory abnormalities will be found to have mild carpal tunnel syndrome, while sensory abnormalities accompanied by motor dysfunction are usually taken as evidence of moderate severity. The condition is considered truly severe when testing reveals decreased or absent sensory or motor responses distal to the carpal tunnel or neuropathic abnormalities.

These tests can be repeated at future dates to gauge the effectiveness of therapy and other interventions.

## CONCLUSIONS

Carpal tunnel syndrome is a serious problem for the elderly. It is treatable, but treatment is most effective when started while the condition is in an early stage.

Carpal tunnel syndrome should be suspected when patients – old or young – present with symptoms even loosely characteristic of the condition. These patients should promptly undergo electrodiagnostic testing to establish or rule out carpal tunnel syndrome as the diagnosis.

However, a problem with electrodiagnostic testing is that often the interpretation of the raw data is reported in ambiguous terms. Worse, delivery of the unhelpfully vague report takes many long weeks, during which time the specialist who performs the interpretation is uncommunicative.

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