

Hypothyroidism presenting as recurrence of previously surgically decompressed carpal tunnel syndrome

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Abstract

We report the case history of a 45-year-old woman who presented with symptoms of bilateral carpal tunnel syndrome 8 years after a successful surgical decompression of both tunnels.

Keywords

Carpal tunnel syndrome; hypothyroidism.

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Case report

A 45-year-old woman presented with painful paraesthesiae affecting the fingers of both hands, mainly occurring at night, interrupting her sleep, and which was relieved by shaking the hands. Eight years previously, she underwent surgical decompression for bilateral carpal tunnel syndrome, confirmed by nerve conduction studies, showing delay of sensory conduction in the median nerve at the wrist. There was no other past history of note.

Physical examination revealed no wasting of the thenar muscles and the scars of the previous surgical decompression. Phalen's sign was positive. There were no physical signs. Initially, she was given resting wrist splints to wear especially at night.

Investigations revealed hypothyroidism with T4 11 pmol/l (normal range 10–24 11 pmol/l) and TSH 21.9 μ mol/l (normal range 0.1–4 μ mol/l). Nerve conduction studies confirmed a significant delay in sensory conduction in the median nerve at the wrist. There were no other findings to suggest a generalised neuropathy. The wrist splints did not help her symptoms significantly.

The diagnosis was recurrence of bilateral carpal tunnel syndrome due to the development of hypothyroidism.

She was commenced on thyroxine 50 μ g, and the dose was gradually increased to 125 μ g a day, when her T4 and TSH were normalised. It took several weeks before her symptoms completely resolved. Thyroid antibodies were not detected. Although her symptoms completely settled, a repeat of the nerve conduction studies did not show a significant change.

Discussion

The prevalence of carpal tunnel syndrome in the general population is 3% in women and 2% in men. The condition is more common in women over 55 years old^[1].

Approximately one-third of patients with carpal tunnel symptoms have associated medical conditions such as inflammatory arthritis, diabetes, pregnancy, amyloidosis,

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hypothyroidism and acromegaly^[1]. In many of these patients the underlying condition causes pressure on the median nerve leading to conduction delay. The pathology of carpal tunnel syndrome in hypothyroidism does not appear to be so clear.

Duyff *et al.*^[2] evaluated neuromuscular signs and symptoms in patients with newly diagnosed thyroid dysfunction. Twenty-five percent of patients with biochemical hypothyroidism had EMG evidence of carpal tunnel syndrome. Unfortunately, this study did not perform repeat EMG studies on patients following treatment of their thyroid dysfunction. However, symptomatically their patients did improve.

Katz *et al.*^[3] report that surgery is successful at relieving symptoms of carpal tunnel syndrome in 70% of patients. It may be that those patients who do not have relief of symptoms with surgery actually have some other cause for their delayed nerve conduction. As yet no studies have been performed to look at the prevalence of hypothyroidism in patients with carpal tunnel syndrome, but such a study may well identify a subgroup of patients who would be better treated by correction of their endocrinological disturbance than with splinting, corticosteroid injection or surgical decompression.

Teaching point

Our case demonstrates that hypothyroidism can cause a recurrence of symptoms of carpal tunnel syndrome even if previously surgically decompressed, producing identical EMG changes. It follows, therefore, that patients with symptoms and electrodiagnostic signs of carpal tunnel syndrome should have thyroid function tests prior to undergoing decompression, or in the case of a recurrence, especially following surgical decompression. The case demonstrates that nerve conduction studies are not always reliable in the diagnosis of carpal tunnel syndrome. We are not aware of a similar case report.

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