

Vitamin B₆ and Carpal Tunnel Syndrome

A Case Report

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Introduction

Carpal Tunnel Syndrome (CTS) was first recognized in 1913 by Marie and Fox during the course of an autopsy of a patient that had suffered with thenar atrophy of long duration (Phalen, 1970). CTS affects women twice as often as men and usually affects people between the ages of forty and sixty.

The main cause of this entrapment neuropathy is the pressure and subsequent compression placed on the median nerve or its blood supply in a narrow conduit bounded by the flexor retinaculum of the wrist (Sandzen, 1981). The course of injury may be traumatic in origin affecting the median nerve directly or by indirectly damaging (by secondary compression) the vital tissues in the canal. Secondary compression by an acute or old traumatic lesion of the carpus has been noted in the literature (Phalen, 1970).

The majority of patients with CTS give no history of antecedent injury to the hand, wrist or forearm. In practice, one clinically finds that the insult and ultimately the compression of the median nerve is usually secondary to a chronic nonspecific tenosynovitis or chronic overuse of the flexor tendons in the carpal tunnel. Through various studies in Occupational Medicine, certain stressors in industry have been elucidated. Repetitive movements and habitual motions by various workers have predisposed patients to chronic tenosynovitis and ultimately CTS (Arndt, 1983).

Case

Mrs. G., age 55, presented to my clinic with the primary complaint of numbness in her first three fingers and along the lateral of the fourth finger of her right hand. She had noted that this condition had been of nine weeks duration and that the right hand was becoming weaker and more painful. The pain was especially noted in the nighttime. Mrs. G. also explained that she has recently experienced burning pain in the affected area and that it is

somewhat relieved through massage of the wrist as well as suspending the hand over the bed.

Her medical doctor, after conducting EMG studies and performing orthopedic and neurological examination made the diagnosis of carpal tunnel syndrome. Mrs. G. was placed on a regimen of a non-steroidal anti-inflammatory drug, however due to her past condition of ulcerative colitis, she could not tolerate the pharmaceutical formulation. A short term of diuretic therapy was considered but not followed through. After a brief discussion with the patient about surgery involving palmar incision to release the flexor retinaculum, Mrs. G. presented to my office.

Chiropractic manipulation of the wrist (carpal bones) is useful to reduce an anterior subluxation of the lunate and a subluxation of the distal radial-ulnar joint (Goodheart, 1967; Schafer, 1984). As well, the cervical spine, especially the lower vertebrae C₄ through C₇ should be manipulated as well. This last point being that a double crush syndrome cervical root compression subclinically injures the axons and renders minor distal nerve entrapments more symptomatic (Hirsh, 1985). Unfortunately, due to Mrs. G's age and use of steroid medications throughout her life in order to control her ulcerative colitis, radiographs revealed an osteoporotic spine and hence spinal manipulation was contraindicated.

Through reading the literature, it was noted that some cases of CTS (especially early phases of CTS), were helped dramatically through the administration of vitamin B₆ or Pyridoxine hydrochloride supplementation.

Mrs. G. began a regimen of 100 mg vitamin B₆ twice daily for 3 days in order to see her tolerance to the supplementation. I then increased her dose to 400 mg daily [RDA 2 mg daily], (Fredericks, 1983), and kept her on this regimen for 14 weeks. At the end of this period Mrs. G. was reevaluated in terms of her previous symptomatology. Mrs. G.'s pain was markedly reduced with an increased range of

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motion in the area of the wrist. Normal sensation was noted in her first 3 fingers with only a slight hypoesthesia noted in the lateral aspect of the 4th finger. After these 3-1/2 months, I reduced her level of vitamin B₆ to 75 mg/day and coupled it with a supplementation of a multi-B vitamin regimen and vitamin E (Ross, 1983).

Summary

Prompt identification followed by conservative therapy may be used highly effectively in acute (CTS). Although this is a report of 1 case, Gordon (1987) in the article dealing with Electro-Diagnostic characteristics of acute carpal tunnel syndrome noted conservative therapy to resolve approximately 77% of their patient pool suffering from CTS. The supplementation of vitamin B₆ for this condition is beneficial in the sense that one has control over the manipulation of this vitamin and that once an adequate dosage for the patient has been determined, it may be followed through in conjunction to the alleviation of other factors. The combination of supplementation of vitamin B₆ with volar wrist splints at nighttime is a complementary program. One must caution that the supplementation of vitamin B₆ for CTS is in no way a substitute for the elimination of the irritating activity causing the CTS. If this irritation comes in the form of some repetitive action done in the workplace, then a job change

or ergonomic modification in the assigned task is of prime importance. It is through the elimination of the biomechanical insult (i.e. repetitive motion), that the individual patient may derive great benefit through vitamin B₆ therapy.

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