



Dynamic Chiropractic – January 1, 1993, Vol. 11, Issue 01

Management of Cubital Tunnel Syndrome

By R. Vincent Davis, DC, PT, DNBPM

Probably the most common site for repeated trauma to the ulnar nerve is at the site located at the groove between the olecranon and the medial epicondyle of the humerus. This is the cubital tunnel. Within this tunnel, the ulnar nerve is held firmly against the bony floor of the tunnel by a strong, dense fascia, the arcuate ligament. At the 90 degrees of elbow flexion, this ligament is tightly stretched; while on extension, it is slightly relaxed. The medial ligament is located between the ulnar nerve and the bony floor of the tunnel. On flexion of the elbow, the medial ligament circumferentially enlarges (bulges) and may compress the ulnar nerve within the tunnel. Also, pronation of the arm complements the presence of pressure on the nerve.

The ulnar nerve supplies the ulnar flexor muscle at the wrist and the deep flexor muscle of the fingers, and enters the hand to supply musculature of the hypothenar eminence, the thumb adductor, and the deep head of the thumb short flexor muscle. It also branches to the ulnar aspect of the dermatome to the hand.

Because of the superficial position of the ulnar nerve as it passes through the cubital tunnel, it is highly subject to repeated trauma with the resultant probability of formation of cicatricial tissue. Such scarring tends to constrict the nerve and contributes to its direct irritation. Only minimal irritation of the nerve is necessary to result in paresthesias and hypoesthesia of the ulnar distribution. The patient may have trouble with the sensory capacity to distinguish tactile sensibility when handling objects with respective inability to distinguish grasp perception unless visualizing the object being grasped. Since paresis is difficult to document in such lesions, if the clinical findings are sufficiently pronounced, a referral for somatosensory evoked potentials (SSEP) may be necessary. McGowen has offered a system of palsy gradation also. If you are unsure of the grade of the lesion, a neurological consult is advisable prior to treatment.

Conservative treatment may include placement of soft pads over the tunnel lesion. Advise the patient to avoid activities which may lead to pressure on the nerve, such as writing, use of a typewriter or computer

keyboard, and, of course, excessive flexion of the elbow. If symptoms appear during sleep, the patient may require light splinting of the arm to avoid abnormal arm positions during sleep. With a history of repetitive trauma to the cubital tunnel region and the possibility of scarring, cortisone/lidocaine pulsed phonophoresis to the region of the cubital tunnel may be helpful. Use 0.05 W/cm² and a menstruum with the phonophoretic agents, which will allow their use as the coupling agent as well. If the pain persists, interferential current therapy may be used employing the Davis procedure with very careful attention to electrode placement.

Studies by Payan have shown that sensory recovery is as rapid and complete with properly administered conservative care as is recovery following radical intervention. Additionally, examination which reveals paresthesias of the ring and little finger requires a differential diagnosis for cervical discogenic disease, neurovascular compression, and ulnar nerve pressure at the wrist.

According to the literature, conservative treatment of ulnar nerve palsy due to external pressure is usually effective. This author's experience agrees with that. Surgical referral for transposition of the nerve has never been necessary.

References

Davis RV: Therapeutic Modalities for the Clinical Health Sciences, ed 1. Copyright -- Library of Congress, Card #TXU-389-661, 1983.

Griffin JE, Karselis TC: Physical Agents for Physical Therapists, ed 2. Springfield: Charles C. Thomas, 1982.

Krusen, Kottke, Ellwood: Handbook of Physical Medicine & Rehabilitation, ed 2. Philadelphia: W.B. Saunders Company, 1971.

Payan J: Journal/Neurology & Neurosurgery. Physiatry, 33:157-165, 1970.

Schriber WA: A Manual of Electrotherapy, ed 4. Philadelphia: Lea & Feibiger, 1975.

Turek: Orthopedics -- Principles and Their Application, ed 3, Lippincott Publishers.

R. Vincent Davis, D.C., BSPT, DNBPM
Independence, Missouri



Page printed from:

http://www.chiroweb.com/mpacms/dc/article.php?id=42021&no_paginate=true&p_friendly=true&no_b=true