CARPAL TUNNEL SYNDROME

Carpal tunnel syndrome represents compression of the median nerve at the wrist. It is sometimes referred to as a cumulative trauma disorder or repetitive strain injury. There is considerable debate as to whether specific work activities may lead to carpal tunnel syndrome, although there seems to be little doubt that these activities aggravate and produce the related symptoms. Activities that involve repetitive flexing of the fingers or wrist, repetitive gripping, prolonged use of vibrating tools, and prolonged driving may provoke symptoms of carpal tunnel syndrome.

The carpal tunnel is a passageway in the wrist formed by the eight carpal (wrist) bones which make up the floor and sides of the tunnel, and the transverse carpal ligament, a strong ligament stretching across the roof the tunnel. Inside the carpal tunnel lies the median nerve and nine finger flexor tendons. The nerve is about the size of a pencil and contains thousands of nerve fibers supplying sensation (feeling) to your thumb, index, middle, and half of the ring finger.

Numbness, burning, pain or tingling of one or more of the fingers (excluding the little finger) is the most common symptom of carpal tunnel syndrome. This may occur at night or when performing activities that involve flexing the wrist or grasping. A decrease in sensation or feeling may result in clumsiness and weakness of the affected hand. Partial relief can sometimes be gained by shaking, massaging, or elevating the hand. At times, the pain may extend up the arm, into the elbow, and as far up as the shoulder and neck.

Many patients with carpal tunnel syndrome are treated without surgery. Conservative treatment of patients with mild symptoms usually involves rest of the hand and arm, and avoidance of activities that provoke symptoms. A splint may be worn to restrict movement of the wrist. In some instances, a cortisone injection may be administered into the carpal tunnel to decrease swelling. This may greatly reduce the patient's discomfort.

When conservative treatment does not achieve the desired results, or in cases involving more severe symptoms, surgery may be recommended. Surgery is usually performed on an outpatient basis. An incision is made on the palm of the hand, and the surgeon will cut (release) the ligament forming the roof of the tunnel. This relieves the pressure on the median nerve. With the blood flow restored to the median nerve, the symptoms of burning and tingling are usually relieved soon after surgery. Improvement in strength and sensation depend upon the extent of the nerve damage prior to treatment. The natural healing process and regeneration of nerve fibers will occur throughout the following six months to a year.

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