CARPAL TUNNEL SYNDROME

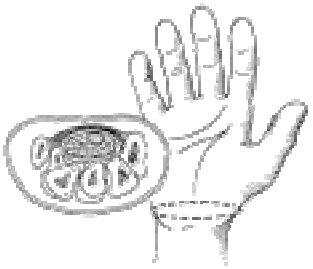
Other names: CTS, Median Nerve Compression at the Wrist *ICD9 354.0*

Definition:

Increased pressure locally along a segment of the Median Nerve as it traverses the wrist inside the flexor retinaculum.

Anatomy:

The median nerve supplies sensory innervation to only the palm side of the palm, thumb, index, middle and the thumb side of the ring finger and power to the muscles of the base of the thumb. It passes into the hand in the middle of the palm side of the wrist inside a "tunnel" The tunnel has a bone floor and walls and a very dense fibrous roof called the transverse carpal ligament. In addition to the Median Nerve, there are nine flexor tendons (two to each finger and one to the thumb). The tendons have a layer of slippery material called synovium that allow them to slide past on another. When the synovium becomes inflamed (and enlarged) there is not enough room in the carpal tunnel and the pressure rises. If the pressure rises enough, it can become higher then your blood pressure and the nerve no longer gets proper nourishment, causing symptoms.



Affected Persons:

More common in women then men. Onset most often after age 40. While repetitive grasping activities and typing are implicated, they have not been shown conclusively to be the exclusive causative event.

Symptoms:

Initial symptoms are pain and tingling especially at night and also with gripping and or pinching activities. Changes in weather may also cause problems. As the disease progresses, less activity may be needed to produce pain and tingling. In advanced cases the tips of the affected fingers may become numb and grip strength may decrease. Occasionally, pain radiates to the shoulder and neck.

Diagnosis:

Your history of hand use, waking from sleep with tingling or pain, and which fingers are affected will provide your physician with reasons to suspect CTS may be present. Usually there are not obvious signs of disease from the outside. Your physician will perform tests to confirm the diagnosis. Pressing directly on the Wrist at the base of the palm, tapping in the same area and holding the wrist bent may recreate your symptoms. Your physician may order Electrodiagnostic Tests which can confirm slowing of the nerves impulses.

Treatment:

Cases diagnosed early often respond to non-surgical treatment. This may consist of a splint to limit the motion of the wrist while you sleep. Anti-inflammatory pills or a steroid shot into the carpal tunnel to decrease the irritation and swelling of the synovium.. More severe cases often require surgery. This usually entails enlarging the Carpal Tunnel by cutting the Carpal Ligament

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