



OH NO, it's Carpal Tunnel Syndrome!

OR IS IT?

By Stephanie Davies, OTR/L

Many people wonder if the nagging pain that occurs in the wrist or fingers is the first symptom of Carpal Tunnel Syndrome (CTS). It may not always be this syndrome, but one thing is clear: The more that's understood about CTS, the more it can be prevented and get properly treated when it does occur. The following are three examples of people who dealt with the issue of this repetitive stress injury:

- Pam is a 47-year-old medical transcriptionist who works all day at a computer. When she began to feel wrist pain, she thought it was the onset of CTS.

She assumed it was an inevitable problem for someone in her position.

- Jeffrey is a 55-year-old storeowner who never dreamed that he would get CTS. Jeffrey hardly ever spent time at his computer anymore, so when the doctor told him he had CTS, he was shocked.

- Lilly G. is a 35-year-old dental hygienist just beginning a new job. She was working hard to keep up with the fast pace of her new employer, so she tried to ignore the tingling in her fingers. But when she started dropping her tools at work, she wondered, did she have CTS?

Compressed Nerve

Carpal tunnel syndrome occurs when the median nerve is compressed as it travels through the "carpal tunnel," an actual location in the body. The grouping of small bones at the base of the palm, the carpal bones, form the bottom of this tunnel where the median nerve travels to supply nerve impulses to the hand. This is the area at the base of the palm, not the wrist as is commonly thought.

These nerve impulses provide sensation to the thumb, index and middle fingers in addition to strength for many of the small muscles of the hand. The ligament that bridges the top of the tunnel and encloses the median nerve is called the transverse carpal ligament. The median nerve is joined by nine tendons in the tunnel. These tendons flex our wrist and fingers—hence, the importance of avoiding repetitive movements that may eventually inflame the tendons.

When the pressures in the tunnel are normal, the median nerve keeps the hand strong and coordinated by carrying nerve impulse like a hose carries water. However, when trauma, inflammation or external pressures interfere, the flow of the nerve is blocked, similar to a kink in a hose, and sensation, coordination and dexterity are compromised. Over time, this starves the tissues of the hand, resulting in a loss of

sensation, lack of coordinated fine movement and loss of grip strength.

Irreversible damage?

Symptoms usually begin gradually with a tingling, burning or prickling sensation in the palm, thumb, index and middle fingers—the areas supplied by the median nerve. Frequently the onset of symptoms occurs during the night. As symptoms progress, the fingers become numb and the hand weakens. Fingers feel swollen though no external signs of swelling exist. The symptoms may now be present during the day. If left untreated, irreversible damage to the nerve results and may cause significant weakening of the muscles of the hand.

Effective treatment of CTS starts with proper diagnosis, as other comparatively minor problems can create similar symptoms.

Pam, the aforementioned transcriptionist, was eventually diagnosed with severe tendonitis, not CTS. Years of typing had created a muscular imbalance in her forearms. This is what caused the strain and inflammation in the flexor tendons as they passed through the carpal tunnel.

Pam's pain resulted from chronic muscle fatigue and increasing

inflammation. Her pain disappeared after she started a regular stretching and postural awareness program given to her by an occupational therapist (OT) referred by her doctor. However, if Pam had left this condition untreated, any increased pressure in the tunnel may have led to CTS.

In Jeffrey's case, the numbness in his hand was reason enough for the orthopedic surgeon to recommend nerve conduction studies that test nerve impulses as they travel. Jeffrey's study showed that the impulses were severely impaired as a result of damage to the nerve. It seems that his years of home improvements and tool use had placed external pressure on the nerve, causing the loss of sensation.

Surgery is not the only option to treat CTS, and should be pursued only in extreme cases.

Don't ignore symptoms

Because Jeffrey was not working on computers, he ignored the symptoms—only seeking medical treatment when loss of function occurred. Surgical release was necessary to prevent further damage. The transverse carpal ligament that bridges the tunnel was cut to remove the pressure on the nerve. In Jeffrey's case, as in most cases, symptoms abated once

post-operative healing occurred. If the source of the problem is not eliminated the symptoms may return. After proper healing time Jeffrey worked with an occupational therapist to regain his strength and learn how to prevent reoccurrence.

In Lilly's case, the dental hygienist was complicated further by genetics. Not only is carpal tunnel more prevalent in women overall, but X-rays revealed that Lilly had inherited a very small bone structure in her wrists. This made the carpal tunnel very narrow. Combined with the awkward hand positioning required to hold instruments, her median nerve became pinched in the tunnel.

Because Lilly's conduction test showed mild slowing, the surgeon recommended a conservative approach that included a

course of anti-inflammatories and occupational therapy. Her particular regimen focused on stretching, instruction on changing her posture, plus altering other daily habits at work and at home that contributed to her problems. In addition, she was issued a wrist splint to wear at night to rest the nerve and tendons. Within a month, her symptoms were eliminated, enabling her to avoid surgery.

Conquering CTS

Surgery is not the only option to treat CTS, and should be pursued only in extreme cases. Small changes in the muscular imbalances and positioning can eliminate symptoms of carpal tunnel syndrome and may even prevent its occurrence. Take regular breaks during work and other activities. Maintain

muscle balance by stretching the hands and wrists. Avoid applying sustained pressure on the carpal tunnel at the base of the palm.

People should also check to make sure their wrists are not flexed in an extreme flexed position. Posture can be a big factor in CTS, and many people have to make adjustments. Also, be sure to drink plenty of water and participate in an aerobic exercise routine to maintain good circulation. Lessening one's symptoms may simply be a change in one's habits... and for some, they might not be suffering from CTS after all.

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