Patient Information Sheet

Carpal Tunnel Syndrome

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What is Carpal Tunnel Syndrome*?*

Carpal tunnel syndrome is caused by the median nerve being squashed at the level of the wrist. Pressure on the median nerve changes the way it works and is perceived as numbness, tingling and pain, which can affect the hand or the forearm. The thumb, index, middle or ring fingers can be affected and often the problem is most noticeable at night or during activities such as driving. Some patients experience problems with fine movements such as doing up buttons and, in severe cases, there may be permanent loss of sensation and wasting away of the muscles at the base of the thumb.

Fluid retention, as occurs in pregnancy can result in carpal tunnel syndrome, as can swelling of the lining around tendons, which occurs for example in rheumatoid arthritis. If the canal decreases in size because of bone dislocation, fracture or arthritis, the nerve can again be affected. However, in the majority of patients an underlying cause cannot be identified.

Who does it effect?

Women are affected more commonly than men, most often in middle age. Carpal tunnel syndrome is commoner in patients with diabetes. In these patients early surgery is recommended as the diabetes itself affects the nerves and nerve compression compounds the problem, with the potential for a poorer outcome.

Diagnosis

The diagnosis is made on the basis of the history and clinical examination. This consists of an assessment of the sensation of the hand, power of the muscles and trying to reproduce the symptoms. The nerve can become very sensitive at the wrist, tingling on being tapped. If the findings are not clear-cut or there is a suggestion of the nerve being affected higher up, for example in the neck, it may be necessary to perform special tests. These are called electromyography and nerve conduction studies. They are performed by a neurophysiologist, who will make an appointment for you to see him. The tests are designed to measure the conduction of tiny electric impulses down the median nerve and assess the way the muscles supplied by the nerve work.

Treatment

If the problem is very mild and intermittent, it can be controlled by injecting a tiny amount of steroid into the carpal tunnel and wearing a wrist splint at night and during activities which bring on the numbness and tingling. The steroid decreases the swelling around the nerve. However, if the nerve compression is more severe, it must be relieved by surgery. This involves cutting the carpal ligament.

The surgery can be performed endoscopically or as an open procedure. An endoscopic procedure is done via two small incisions, one at the wrist and one in the palm. A telescope is placed inside the carpal canal and the carpal ligament is cut under direct vision. If for any reason a good view is not obtained, an open operation is performed. The advantage of the endoscopic technique is that it allows a quicker return to function. I do not perform an endoscopic carpal tunnel release in patients with reduced wrist movements, bony abnormalities or those with rheumatoid arthritis. In the latter group, an open procedure provides the opportunity to remove the inflamed lining of the flexor tendons.

An open procedure involves an incision about 3 cm long in the palm of the hand. This allows for inspection of the nerve, its branches and the flexor tendons, as well as the bony architecture at the base of the carpal tunnel.

After surgery

The stitches are left in for about 2 weeks, and the hand must be kept dry during the first week. You can bathe by placing a plastic bag over the hand. The dressing is not usually changed during this period. A long-acting anaesthetic is used, which means that the numbness lasts for several hours and simple pain killers are all that are necessary afterwards. You must avoid aspirin as this may cause bleeding. It is very important you keep your hand elevated as much as possible, at least during the first week. During the daytime you can wear a sling and at night the hand can be rested on a couple of pillows. This helps reduce the swelling and postoperative discomfort. It is essential that you keep your fingers moving during this period and come out of the sling every few hours to exercise your elbow and shoulder. When the dressings and splints are removed, you will be shown the exercises necessary to regain a full-range of movement. A formal visit to the hand therapist is rarely required. If the nerve has been badly compressed for a long time, it may not recover completely after the surgery. This means that numbness and weakness may persist. Tenderness at the site of the surgery is not uncommon and can take a few weeks to resolve. Most people are able to return to light duties within a few days but it may take months before grip strength returns to normal.

Possible complications

- Bleeding and infection are rare.
- Sympathetic dystrophy, which presents as pain, swelling, stiffness and discolouration, is uncommon and is treated by intensive hand therapy.