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## **Surgery for carpal tunnel syndrome**

### **What is carpal tunnel syndrome?**

There are three main nerves travelling down the arm to the hand. One of these, the median nerve, is responsible for most feeling in the hand (apart from the little finger). The median nerve travels through a narrow tunnel, the carpal tunnel, as it passes from the wrist into the palm of the hand. If the carpal tunnel becomes too narrow, then pressure on the nerve develops and the symptoms of carpal tunnel syndrome appear.

### **Why should the carpal tunnel become narrow?**

The carpal tunnel is a narrow channel at the best of times, and it doesn't take much narrowing for pressure on the nerve to develop. As well as the nerve, a dozen or so tendons to the fingers of the hand pass through the same tunnel. Any injury or inflammation to the tendons causes them to swell slightly, and this can be enough to trigger the symptoms. Most people with carpal tunnel syndrome are perfectly normal and healthy, but some medical conditions can cause swelling of the tissues in the carpal tunnel. Pregnancy is another common setting for this complaint.

### **What are the symptoms of carpal tunnel syndrome?**

Usually the symptoms consist of either strong tingling in the hands, or pain in the hands, or both. Sometimes the problem is numbness, not tingling. Often only one hand is affected, or if both are affected one is much worse than the other. The symptoms are frequently intermittent, and typically bad at night. It is not uncommon for sleep to be regularly disturbed, and yet for there to be little or no trouble during the day. Often there is an ache in the forearm as well as the symptoms in the hands themselves.

### **How is the diagnosis made?**

The diagnosis is made on the basis of the clinical findings, that is what the patient reports to the doctor. Nerve conduction studies (often called EMG) are special electrical tests that study the function of the median nerve and other nerves. This test is used to confirm the diagnosis, and to give an indication of the severity of the effects on the nerve.

### **Why do I need surgery?**

The usual reason for recommending surgery is to relieve the troublesome symptoms in the hands. This is usually necessary if sleep is regularly disturbed. On occasions surgery is needed because of wasting of the small muscles in the hand, which can cause loss of fine movements. Sometimes surgery is appropriate to prevent permanent nerve damage, which can lead to permanent numbness and loss of function.

### **What is actually done in the operation?**

Usually the arm is anaesthetised using local anaesthetic. You will not be able to see the surgery. A tourniquet is placed around the arm to prevent bleeding. A short incision is made at the base of the palm. Through this incision the carpal tunnel is fully opened, by cutting the ligament, which forms the roof of the tunnel. This does not weaken the hand. Three or four stitches are then inserted and a padded dressing is applied. The anaesthetic wears off after about 4 hours.

**What is the success rate?**

The success rate is well over 90 percent. Failure to adequately or fully relieve symptoms occurs in 4 to 5 percent of cases. Less than 1 percent are made worse by surgery. Complications are uncommon, but can occur. Wound infection is an occasional problem and needs immediate attention. Damage to the median nerve itself, causing severe numbness or some weakness in the hand, is very rare but you need to know that it is possible. Some people find the surgery effective in relieving the original symptoms but are troubled by a painful wound. The scar can be quite tender for as much as several months.

If there is some degree of permanent numbness prior to surgery, then it is unlikely that surgery will completely relieve the symptoms. In other words, some degree of numbness will remain. As long as the numbness is intermittent, then usually surgery will relieve the symptoms.

**How long will I be in hospital?**

Normally carpal tunnel decompression is done as a day procedure. Admission to hospital is in the early morning, and discharge is usually during the late afternoon. Because of changes to health insurance rules, it is only appropriate to stay overnight unless there is a specific medical need.

**What can I expect after the operation?**

Your wrist and hand will naturally be sore for a few days, especially in the first 48 hours. You should not be alarmed by this, and keeping the hand elevated (on a pillow or two during the first night at home) will help. If you have been given a sling, you should only need it for a day or two, three at the most. After that period, it is better to discard the sling and use the arm in a natural way. You should keep the wrist straight as much as you can, until the stitches are removed.

You will have been given an appointment from 10 to 14 days after the operation when the stitches will be removed and progress will be reviewed. You can flex the fingers regularly (though not forcibly) even while the hand is still bandaged, but you should avoid getting the hand wet and you should not use it for heavy work until you have been reviewed.

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