Open Carpal Tunnel Surgery

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Carpal Tunnel Syndrome

Introduction

Carpal tunnel syndrome (CTS) results from the compression of the median nerve within the carpal tunnel in the wrist.

The purpose of this leaflet is to explain why this condition occurs, who gets it and what can be done to relieve your symptoms.

What is carpal tunnel syndrome?

Carpal tunnel syndrome results in numbness or tingling in your hand, especially at night. You may also experience clumsiness in handling objects and sometimes feel a pain that goes up the arm as far as the shoulder.

What causes it?

The median nerve travels from the forearm into your hand through a “tunnel” in your wrist. The bottom and sides of this tunnel are formed by wrist bones and the top of the tunnel is covered by a strong band of connective tissue called a ligament. This tunnel also contains tendons that bend your fingers and thumb. These tendons are covered with a lubricating membrane called synovium that may enlarge and swell under some circumstances.

Anything that causes swelling, thickening or irritation of the synovial membranes around the tendons in the carpal tunnel can result in pressure on the median nerve. The condition is more common in people between 30 and 60 years old and is five times more common in women than in men. Some common causes and associated conditions are:

- Broken or dislocated bones in the wrist which produce swelling.
- Arthritis, especially the rheumatoid type.
- Thyroid gland imbalance.
- Diabetes.
- Hormonal changes associated with menopause.
- Pregnancy.
Although any of the above may be present, most cases have no known cause.

**How is it diagnosed?**

Your doctor may diagnose this condition if you have the symptoms described and by reproducing your symptoms by holding your wrists in a bent down position. In some cases your doctor may recommend a special test called a nerve conduction study. This test, done by a specialist, determines the severity of the pressure on the median nerve and may aid your orthopaedic surgeon in making a diagnosis.

**How is it treated?**

Mild cases may be treated by non-surgical methods such as wearing a brace or splint, which is usually worn at night and keeps your wrist from bending. Medications taken by mouth called non-steroidal anti-inflammatories may also reduce swelling and compression on the nerve. In more severe cases, your doctor may advise a cortisone injection into the carpal tunnel which spreads around the swollen synovial membranes surrounding the tendons and shrinks them and relieves the pressure on the median nerve. The dose of cortisone is small and when used in this manner it usually has no harmful side effects. The effectiveness of non-surgical treatment may be short-lived.

**Operative treatment involves;**

- The site of the operation is made pain-free by local anaesthesia injected either into the wrist and hand or higher up in the arm.
- A tourniquet is inflated around your upper arm to reduce bleeding during the operation. This is uncomfortable but will not be inflated for very long.
- The surgery itself involves cutting the ligament that forms the roof of the carpal tunnel to relieve the pressure on the median nerve.
The wound requires several stitches and a pressure dressing is applied.

The surgery is usually performed as a day case.

How long will I take to recover after surgery?

After surgery, your symptoms may be relieved immediately or in a short period of time. Your stitches will need to be removed after 10 to 14 days at your GP surgery and you may need to take pain relief tablets for a few days. Numbness that existed before surgery may remain for a period of time, particularly in older persons or in more severe cases. Generally, we expect the patient to be able to use their hand for some activity between 3-5 days. The majority of patients recover hand function fully within 4-6 weeks. For some types of heavy physical work, it may take longer.

What are the risks of surgery?

All operations have a small risk attached to them and these are outlined below for carpal tunnel release surgery:

1. **Infection** Wound infection is uncommon and usually responds to a short course of antibiotics.

2. **Tender scar** In some patients the surgical scar may remain sensitive to pressure or develop excess scarring (keloid). This usually settles in time but persisting tenderness may occur.

3. **Recurrence of symptoms** This may be due to incomplete release of the carpal tunnel or scarring in the tissue around the median nerve as a result of surgery. In this event further surgery may be necessary.

4. **Bleeding** Accumulation of blood in the wound after surgery may cause any of the above complications. If significant, a further operation to remove the blood may be required.

5. **Nerve damage** Inadvertent damage may occur to a small branch of the median nerve or to the median nerve itself resulting in numbness in the palm or fingers. This is usually temporary but may be permanent.
6. Chronic Regional Pain Syndrome (CRPS) (Algodystrophy, Reflex Sympathetic Dystrophy) This is a very uncommon condition that may occur following any surgery to the hand. The hand and fingers feel painful, stiff, swollen and may intermittently become red or blue in colour. In most cases this complication settles, but it may take up to a year. Pain tablets and physiotherapy are the main methods of treatment. Rarely, these symptoms persist and may result in permanent stiffness of the fingers.

After your Operation

Local Anaesthesia

The local anaesthetic injection will give you pain relief for 4-6 hours or more. Your hand may feel numb during this time. This is normal.

You may feel some pain when the local anaesthetic wears off; take the painkillers that have been prescribed for you as directed or use paracetamol as directed on the packet.

Elevation

You will be given a sling; this should be worn throughout the day for the first 48hrs. At night keep your hand elevated above the level of your heart using pillows. Elevation helps to prevent swelling, pain and infection.

After 48hrs you may start to use your hand for light tasks including dressing and eating, taking your hand out of the sling for short periods only. When resting the hand it should remain elevated in your sling. Continue to exercise the hand as instructed.

Exercises

You will be advised by your surgeon as to any exercises you should do following the operation.
Dressings

- After 48hrs, remove your outer bandage and loose gauze or cotton wool underneath.
- Your dressing covering your stitches may need to be changed in 5 days. You will be advised if this is necessary.

Stitches

- We will see you in out patients in ……. days to remove your stitches.
- Please arrange appointment with your practice nurse at GPs surgery to remove your stitches in ……. days.

Once your stitches have been removed you will be able to commence normal tasks. Avoid lifting heavy objects for a further 4 weeks.

Infection

If you have any concerns or find your hand is getting increasingly painful, red, inflamed or swollen, or have any other concerning symptoms, please do not hesitate to contact us.
References and further information

ARC Carpal Tunnel Syndrome available at www.arc.org.uk (accessed August 2008)

O’Connor et al (2003), Non-surgical interventions for carpal tunnel syndrome. Cochrane Database of Systematic Reviews Available at www.cochrane.org (accessed August 2008)


www.bupa.co.uk/health_information (Accessed August 2008)

NHS Constitution. Information on your rights and responsibilities. Available at www.nhs.uk/aboutnhs/constitution
If you or the individual you are caring for need support reading this leaflet please ask a member of staff for advice.

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