

## Patient information

# Surgery of the Carotid Arteries – Carotid Endarterectomy

Carotid endarterectomy is an operation performed to clear out a partially blocked artery in the neck, the carotid artery, which supplies blood to the brain. Clearing out the artery prevents strokes by preventing bits breaking off the artery and lodging in the brain. Without surgery, patients with a severe stenosis of the carotid artery have at least a 26% chance (1 in 4) of having a stroke in the next two years. With surgery, the risks over the same time period are reduced to 9% (less than 1 in 10).

## Admission

Depending on arrangements you will be admitted to the ward 1-2 days before surgery. The ward nursing staff will show you to a bed and help you settle in. They will explain the preparations for theatre and show you where everything is. You should not have anything to eat or drink for at least six hours before your operation. Your surgeon will visit you before your operation to explain the procedure again and answer any questions. The side of the operation will be marked.

## Anaesthesia

Generally the operation of carotid endarterectomy is performed with you asleep under general anaesthesia. In some circumstances, the operation can be performed under local anaesthetic or regional anaesthesia but these techniques are usually preserved for people who are not fit for a general anaesthetic. Your anaesthetist will discuss the anaesthetic technique with you before the operation.

## Surgery

The incision runs obliquely along the side of the neck from just below the ear-lobe to just below the side of the Adam's apple. The carotid arteries are dissected and controlled. Heparin is given to thin the blood. The blood flow through the carotid artery is temporarily stopped and a cut made in the wall of the artery to expose the disease. A specialist piece of plastic tubing, known as a shunt, is placed inside the artery, to by-pass the diseased part of the artery and restore blood flow to the brain.

The diseased part inside of the artery is then removed – endarterectomy. The cut in the wall of the artery is then repaired using a small patch of Dacron material to prevent narrowing. At the end of the operation the plastic shunt tubing is removed and blood flow restored through the repaired artery. The wound is closed with self-dissolving stitches and a small drain left in the wound for 24 hours to allow any blood clot to escape.

## **After the operation**

You will be monitored in the theatre recovery area for 1-2 hours. The nurse looking after you will make careful measurements of your pulse, blood pressure and breathing. Every few minutes the nurse will ask you questions to check you are awake and ask you to perform certain tasks eg squeeze my hand, stick out your tongue. The side of your neck will feel stiff and swollen. There may be a small probe attached to the side of your head with an elasticated band. The probe is monitoring the blood supply to the brain ensuring that the operated artery is not blocking off. You may find there is a urinary catheter inserted into your bladder to allow urine to drain into a bag. This is a temporary measure to prevent retention of urine which can cause your blood pressure to become unstable.

After a few hours, if all the measurements are fine and you have recovered sufficiently from the anaesthetic you will be returned to the ward where you will continue to be monitored for 24 hours.

The day after the operation, if all is well, the monitors, catheters and drains are removed and you are allowed to eat and drink.

## **Discharge from hospital**

You will be visited each day after the operation by the surgical team who will answer any questions you might have about your surgery. Your progress will be assessed and the appropriate time for discharge from hospital will be decided. Most people are discharged 2-3 days after the operation.

## **Once at home**

You will probably need 2-4 weeks off work, returning when you feel comfortable. Avoid driving for at least 2-4 weeks until you regain the full range of pain free movement in your neck. Gentle exercise eg walking is good but avoid any heavy lifting or straining for as long as possible. You may resume sex after six weeks.

## **Complications of carotid artery surgery**

There is a small risk of stroke at the time of the operation (approx. 2-3%). To keep

this as low as possible we monitor the brain function throughout surgery with a variety of techniques. We also thin the blood with heparin during surgery and give aspirin which reduces the stickiness of the platelets in the blood. Antibiotics are used to reduce the risk of infection.

All major operations carry general risks including problems with the heart. On average there is a 1-2% risk of heart attack following surgery. Often this is related to problems with unstable blood pressure in the first 24 hours following surgery. Therefore we monitor blood pressure very carefully during this period and give medications to prevent the blood pressure going too high or too low.

Surgery on the arteries of the neck is very complex, not only because the carotid arteries supply blood to the brain but also because there are a number of important nerves which lie near to the carotid arteries. Permanent damage to these nerves is uncommon (2-3%) however temporary deficits are not uncommon but usually recover completely. Temporary damage to the nerves results from stretching to expose the disease in the arteries. This can affect the nerve to the voice box and result in a hoarse voice. The nerve to the tongue can be affected resulting in a numb tongue which feels clumsy. Occasionally the nerve responsible for swallowing can be affected. Also, the nerve to the corner of the mouth can be affected causing temporary drooping.

Surgery on the carotid arteries inevitably produces bruising and soreness. Occasionally blood can collect in the wound in the hours after surgery causing the neck to swell – in some patients (2-3%). This haematoma needs to be evacuated under local anaesthetic. While the wound is usually red and sore immediately after the operation this should improve in the days after. If the wound becomes increasingly red and sore this may indicate infection which requires prompt treatment with antibiotics and assessment by your surgeon.

## **Follow-up**

Following discharge from the ward we will make arrangements to review you in the out-patient clinic in 6-8 weeks time. At this appointment a check ultrasound scan of the operated artery may be performed. If all is well a final check will be arranged at six months.

*The practice of medicine and surgery is not an exact science and reputable practitioners cannot properly guarantee results either expressed or implied. These procedures are highly advanced and discussion about them (including risks and benefits) should be with your specialist.*

*Please sign below to indicate you have read and understood this information sheet.*

*Bring this sheet with you when you come to the hospital and hand it to your specialist.*

*Signature:* .....

*Name:* ..... *Date:* .....

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