

CAROTID ENDARTERECTOMY - a patient's guide

Dr Edic Stephanian - Vascular Surgeon

What is it?

Carotid endarterectomy is a surgical procedure performed in order to treat blockage of the carotid arteries in the neck. Significant narrowing of these neck arteries, which are the dominant blood supply to the brain, can increase the chance of suffering a stroke.

Patients with carotid artery blockage may or may not have symptoms prior to the onset of a stroke. The five main risk factors for this blockage are cigarette smoking, high blood pressure (hypertension), high cholesterol, high blood sugar (diabetes mellitus), and a strong family history of strokes or other artery problems such as heart attacks.

Detection

Most carotid artery blockages are noted on routine physical examination when a doctor listens to the patient's neck with a stethoscope and detects an abnormal sound called a bruit.

The next step in evaluation is a Doppler test in which the neck arteries are imaged with an ultrasound machine. By looking at the carotid arteries using this screening test, an approximate measure of the degree of blockage can be made. Not all bruits are necessarily pathologic, meaning that the presence of a bruit does not always signal a significant blockage in the artery.

Carotid artery blockages are sometimes detected after a patient either has a stroke or a mini-stroke (transient ischemic attack or TIA). The difference between these two latter events is a matter of time; a TIA is followed by neurological recovery within 24 hours, while a stroke leads to loss of neurological function for greater than 24 hours. Symptoms of TIAs or strokes include loss of control or motion of an arm or leg, sudden loss of vision in one eye, or difficulty speaking.

If a significant blockage is detected, the next step is consultation with the patient's primary care physician and possibly a surgeon. One must decide at this point the patient's risk factors for surgical treatment. In general, if the degree of blockage is 70% or greater, surgical intervention is indicated. Further diagnostic testing with a regular arteriogram (angiogram) or Magnetic Resonance Angiography (MRA) can then be performed to confirm the Doppler finding prior to surgery.

Considerations for surgery

There has been some controversy in the past about the indications for carotid endarterectomy. Numerous studies on the surgical versus medical treatment of carotid artery blockage have been performed, and have yielded guidelines that can be applied to treatment of this problem. However, the results of these trials involve a great number of people with different risk factors, and the decision to proceed with surgical intervention must be individualized to each patient.

In general, patients with 70% or greater blockage of the carotid arteries are considered for surgical repair, even if they have had no previous symptoms. The role of surgery is to diminish the risks of stroke. However, surgery itself carries a 1-2% risk of stroke and 1-2% risk of heart attack. A surgeon performing carotid surgery must achieve similar or better results in order for the procedure to be of benefit to patients.

Patients with symptoms of carotid artery disease and greater than 50% blockage also benefit from surgery. The important factors in a surgical program's success include careful selection of patients for the procedure, training in vascular surgery, and a high volume of carotid endarterectomies performed per year by the surgeon. In addition, patients with carotid artery blockage should be treated with some form of anti-platelet therapy such as one aspirin a day, whether or not they undergo surgery.

How is the procedure carried out?

An incision of approximately 6-8 cm in size is made on the side of the neck where the diseased artery is located.

There are several different ways to perform the procedure, but in essence, the buildup of blockage within the artery is carefully scraped out during the surgery. The artery is then closed using fine sutures. The procedure takes approximately two hours, and the patient is then closely monitored overnight. Most patients can be discharged from the hospital within 1-2 days after surgery.

After surgery, we ask patients not to drive for approximately one week due to neck stiffness. Return to a normal routine is otherwise encouraged as soon as the patient feels comfortable. Long-term results from the surgery are excellent, within minimal physical discomfort.

Conclusion

Carotid endarterectomy is a safe and effective procedure for stroke prevention. Success depends on appropriate patient selection and a skilled surgical team.

The long-term outcome of patients with carotid artery disease rests on modifying risk factors for circulation problems that can also lead to blockage in the heart and leg arteries. These modifications include absolute cessation of cigarette smoking, control of high blood pressure and cholesterol, and diabetic management. In addition, regular cardiovascular exercising is promoted for overall circulation improvement.

We encourage patients to take one half (150 mg) or full strength (300 mg) aspirin a day, starting as soon as significant carotid artery blockage is detected, and to continue this therapy even after surgery.

Non-operative management of carotid artery blockage, that is not severe enough to warrant surgery, includes control of risk factors for artery disease, anti-platelet treatment, and surveillance Doppler ultrasound evaluations at 6 month to 1 year intervals.

CATARACTS - a patient's guide

Dr Peter Ring - Eye Surgeon

What is a cataract?

The human eye is not dissimilar to an ordinary camera with which we are all quite familiar. Light passes into the eye where it falls upon the retina which is not dissimilar to the film at the back of your camera and it is here that the images are perceived with assistance from the visual part of the brain. In order to see clearly the images are focused and whereas the lens is on the front of your camera, in the human eye the lens is located within the eye and near the front.

When the lens of the eye becomes cloudy or opaque, light is unable to pass through it and blurred images fall upon the retina. The patient cannot see clearly and this condition is known as a cataract. A cataract is not a film on the outside of the eye that can be scraped and it is not caused from overuse. Cataracts most commonly occur as part of the aging process and usually over the age of 60 but sometimes as early as the age of 40. They tend to occur earlier in diabetics and may sometimes be associated with some drugs and diseases. Rarely they may be congenital and occur around the time of birth.

What are the symptoms?

Cataracts usually develop very slowly and sometimes merely changing your glasses will allow you to retain sharp vision, but as the lens becomes more cloudy, your vision becomes more blurred. Depending upon which part of the lens becomes cloudy first your distance vision may be affected more than your reading vision or visa versa. Sometimes, as cataracts develop, people discover that they can once again read without glasses but their distance vision is poor. Sometimes people see multiple images such as 3 or 4 moons when looking into the night sky. Depending on the type of cataract, the vision may be a lot worse in bright sunlight and better in twilight.

When are the cataracts operated on?

Ordinarily speaking the time to operate is when the blurred vision interferes with your quality of life and this is a very individual matter. Someone who is still working and with higher visual demands will probably have their cataract removed earlier. In the past the cataracts were removed when the cataract was ripe or mature, but now techniques are so superior and so much safer that surgery is undertaken much earlier.

What happens during cataract surgery?

Simply, the cloudy lens (cataract) is removed and a clear plastic lens (implant) is inserted to replace this. Prior to the surgery the eye is measured to select the lens that will give you much improved distance vision. Sometimes a weak distance prescription is required to fine tune your sight. In this situation reading glasses are always required afterwards. Sometimes patients prefer to be left short sighted so they can read without glasses (but will then need distance glasses) and this has to be discussed with your surgeon before the operation.

Nowadays nearly all cataract surgery is undertaken under local anaesthetic but if you are anxious a mild sedative can be given. A painless anaesthetic is administered around the eye so you do not feel nor see anything. Surgery is usually undertaken through a small 3mm wound. The implant is then inserted through the same wound and no stitches are required. This means you can lead a very normal lifestyle from the next day after your first post operative visit. The eyes may take a day or two to synchronise.

Depending on your previous prescription, your eye surgeon will tell you when it is safe to return to driving, but this is frequently within 3 or 4 days. An eye pad is usually put over the eye just at night for the first day or so and drops instilled for 2 to 3 weeks. Three to four weeks following surgery you will return to your eye surgeon who will give you the appropriate prescription for your new glasses.

Post operatively you will notice that things are much brighter and colours are quite different. The human lens filters out certain wave lengths of colour but the new implant allows these previously unperceived wave lengths to enter the eye and more of the blue end of the spectrum is seen. This can be disconcerting for people who paint. Dark glasses are frequently needed for comfort.

If you have cataracts in both eyes the second eye could be considered after one month as it is generally considered not wise to do both cataracts on the same occasion.

Complications

Nowadays cataract surgery is highly successful with a 98% rate of a good result, assuming the retina is healthy before you start. Infection is a risk with any surgery but fortunately is extremely rare these days and can usually be treated.

Detachment of the retina is slightly more common following cataract surgery and should you get a sudden shower of black spots and notice flashes of light at night time then this could suggest a tear in the retina and you should consult your surgeon immediately.

Fluid in the retina can occur even after uncomplicated straight forward surgery. This usually resolves but rarely may persist, and results in a less than perfect outcome.

Other interesting facts

In the past when cataracts were removed through a big wound the patients had to be careful afterwards and in particular they were advised not to bend over or do any heavy lifting. This is no longer the case and with the small incision surgery normal activities can be undertaken straight away although one has to be careful not to knock the eye directly.

The current technique for removing the cataract is known as 'phacoemulsification'. A small probe with the tip vibrating at 47,000 cycles per second is inserted into the eye and breaks the cataract up which is then washed out. Up until this time cataracts have not been removed by laser despite what many people think. However within the last six months there has been a type of laser machine become available that removes the cataract using a laser beam on the tip of a probe as has just been described. Whether this becomes the technique of the future, only time will tell.

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A laser however is sometimes used following cataract surgery. At the time of surgery a small membrane is left in place to stabilise the implant and this may become cloudy over the next 2-4 years. If this occurs the vision starts going cloudy like the development of another cataract. A hole is easily made in this membrane with what is known as a Yag laser. This is a simple procedure done sitting in front of the surgeon's microscope. It will result in an immediate improvement in the vision and the membrane does not re-grow.