

Information for Patients

Deep sclerectomy for the treatment of Glaucoma

Introduction

This leaflet provides information for patients being offered deep sclerectomy as a type of glaucoma surgery.

Glaucoma is a condition where the pressure inside the eye, which may not necessarily be high, causes damage to the nerve that takes the vision from the eye to the brain.

There are many different types of glaucoma, but all treatments involve trying to lower the pressure inside the eye to a safer level.

Depending on the situation there are a number of ways of achieving this pressure reduction. For most patients using regular eye drops will control the pressure. A small number will need an operation.

Deep sclerectomy is one type of glaucoma operation. The operation may be performed on its own or can be combined with surgery to remove a cataract. In deep sclerectomy a filtering membrane is created for fluid to move out of the front chamber of the eye to underneath the superficial tissues around it (conjunctiva). This lowers the pressure in the eye.

Before proceeding to read about this operation you may wish to read the available information booklets on glaucoma and cataract.

Before the operation

Occasionally glaucoma surgery needs to be undertaken urgently; but for most patients there will be an interval between your outpatient clinic appointment and the admission date for the operation.

The wait for surgery is usually less than 8 to 12 weeks. This short period of time will not cause any harm. While you are waiting for your operation it is very important that you continue with the eye drops, and occasionally tablets, prescribed by your eye doctor.

If you do not receive a date for your operation within two months' time, you need to check with the admissions office. Contact details can be found at the end of the leaflet.

You will need to make arrangements for someone to take you home after your operation.

You may also be sent an appointment for assessment prior to surgery.

At this visit:

- Please bring your current distance glasses and a list of all your medication.
- Your blood pressure will be measured.
- If you take Warfarin you will be asked to visit your GP one week before your operation to have your INR checked.
- Tell the nurse if you take Clopidogrel or Aspirin to thin your blood.

Who will do the operation?

The surgeon who performs the operation may not be the same doctor you saw in the clinic. The operation will be carried out or supervised by a highly trained glaucoma specialist.

The day of surgery:

- Unless you have been told otherwise your operation will be performed as a day case under local anaesthetic and you may eat and drink as normal.
- Please arrive on time at either Ward 55 or Eye Clinic J (as instructed in your confirmation letter) on the first floor of Manchester Royal Eye Hospital.
- Unless instructed otherwise take all medicines and use all eye drops as usual.

- Wear comfortable loose fitting clothing. You will not need to undress for the operation.
- Do not wear make-up or bring any valuables.
- The nurses will admit you to the ward and may put some drops in your eye.

The surgeon will visit you to answer any last minute questions and to ask you to sign a form that says you fully understand all about the operation and that you wish to proceed. Before you sign the consent form you should:

- Discuss any concerns with the doctor and/or the nurse.
- Have read and understood this leaflet.
- Have understood all the verbal information.
- Be aware that, as with any operation there are potential risks and complications as well as the intended benefits.
- Be happy to go ahead with the operation.
- Expect to be in hospital for a total of 3 to 4 hours.

How is the operation done?

In the anaesthetic room

- Iodine drops are used as an antiseptic onto the surface of the eye.
- Local anaesthetic is injected around the eye using a blunt tipped cannula (not needle), this stings a little. The stinging lasts for a few minutes and the effects of the anaesthetic lasts the whole duration of your surgery.
- Once the local anaesthetic has taken effect you will not be able to move your eye or eyelids and very often you will not see much with the eye.
- The local anaesthetic is given to prevent any pain or discomfort during the operation.
- You may see some bright or coloured lights – this is normal.
- You will be aware of the surgeon touching your face and/or forehead – this is also normal.

In the operating theatre

- You will be lying down.
- Your eye will be cleaned again with iodine solution.
- A sterile plastic drape is placed over your eye and then passes above your face like an open tent.

- A tube blowing fresh air or oxygen will be placed under the drape allowing you to breathe completely normally.
- The operation is performed under a microscope and involves making a special type of filtration membrane by removing part of the sclera (the white layer of the eye). This filtration membrane is then covered by the remaining sclera, which acts like a trapdoor.
- This is closed with microscopically fine stitches so that the fluid in your eye may drain slowly and thereby reduce the pressure in your eye.
- Your surgeon may use a special medicine called Mitomycin C, applied to the eye for a few minutes by a very small sponge, to slow down or prevent subsequent healing and scarring at the site of surgery.
- Your surgeon may also use a very small device made of acrylic, which is inserted underneath the trapdoor to improve the drainage of fluid. This remains in your eye long term.
- The trapdoor is finally covered by conjunctiva, the clear tissue on the surface of the white of the eye, which is carefully stitched in position. The leaking fluid collects underneath the conjunctiva and lifts it very slightly to form what is called a bleb. This acts as the area of drainage which lowers the eye pressure.

The operation can be combined with cataract surgery. If you are having the combined operation please also read the information booklet on cataract surgery.

At the end of the procedure your eye is given a small dose of antibiotic and a medicine to reduce inflammation. Your eye is then covered with a shield or a pad until the next morning.

After the operation:

When you return to the ward you will be offered a drink and something to eat. After about one hour a nurse will check that everything is satisfactory before you go home.

After the surgery you may have to use steroid drops every 2 hours while awake for up to 2 months. **You also have to stop taking the glaucoma drops in the operated eye.** You will be given full instructions including how to use the drops.

A clinic appointment will be made for one week after your operation.

The weeks following your surgery are very important and careful management is required during this time to maximise the chances of a successful outcome; therefore, you need to be aware that there is a required commitment to applying the drops prescribed for after your surgery and to attend the outpatient clinic as instructed.

Dos and Don'ts after the operation

Do:

- Use the eye drops as instructed.
- Continue with normal light daily activities but take things easy.
- Avoid splashing soap, water or anything else into your eye.
- Wash your hair in the shower with your eye kept shut, or by leaning back at a basin.
- Be aware that the vision is often blurred for a number of weeks after the procedure.
- Wear your old glasses if you find them helpful but be aware that they may no longer help with any blurring of vision in the eye that has undergone surgery.
- In due course you may need a new spectacle prescription and you will be advised in the clinic when this can be done.
- Expect to be off work for 2 weeks.

Don't:

- Carry out strenuous activities.
- Rub or press on the eye. This is very important.
- Miss any outpatient appointments.
- Drive unless you are told that it is safe to drive by your surgeon at your first follow up visit.

Contact us urgently if you notice:

- Increased pain
- Increased redness
- Excessive watering or sticky discharge
- Rapid loss of vision

What are the risks of Deep Sclerectomy?

Deep Sclerectomy is considered to have very few complications. The eye is very stable and only a few visits to the eye clinic are needed after surgery. It must be kept in mind that success in reducing pressure to the required level can never be guaranteed. A

pressure of less than 19 mmHg is achieved in about 60-70% of eyes without any glaucoma drops for up to 5 years after this surgery.

Complications are fortunately rare, particularly with this type of glaucoma operation:

Perforation of the membrane during surgery

Sometimes, in about 5% of cases, a hole is accidentally made in the filtration membrane. This is usually of no serious consequence although it may delay the recovery of vision as it takes longer for the eye to get back to its original dimensions.

Inflammation, excessive healing or scarring of the drainage site

This is not uncommon and can result in the drainage site closing and the pressure in the eye becoming too high, as it was before surgery. To reduce the risk of this happening, your surgeon may use special techniques including the use of anti-scarring agent and/or an acrylic spacer device during the operation.

If the eye pressure is too high after surgery your surgeon may then decide to do a laser procedure. This is done in outpatients and no special after care is needed. The laser makes a tiny puncture(s) in the membrane to increase flow out of the eye. If the laser doesn't work, either glaucoma eye drops may be restarted or bleb needling may be done (see leaflet on bleb needling).

Rare complications include:

Excessive drainage

If the fluid in the eye drains too quickly the pressure may become very low. This is known as hypotony and can result in deterioration of vision. The problem will often resolve with time. Occasionally treatment on the ward as an inpatient may be recommended. Sometimes further surgery is required. Irreversible loss of vision is not common but can occur.

Hyphaema

This is when a small amount of blood collects behind the window of the eye, the cornea. This often clears within a week. On rare occasions the bleeding may be recurrent. Usually no action is required other than allowing time for the blood to clear naturally.

Cataract

Age-related cataract may develop at an earlier age in eyes that have undergone glaucoma surgery. Very early onset of cataract developing as a result of glaucoma surgery is rare.

Choroidal Haemorrhage

Bleeding within the layer of blood vessels that nourish the retina in the back part of the eye is a very rare problem that may arise during the operation or in the early days following surgery. If the bleeding is localised the eye may recover but in more severe cases permanent marked loss of vision or, even more rarely, loss of the eye, may occur.

Endophthalmitis (infection inside the eye)

Less than 1 in 1000 eyes develop this serious sight-threatening complication in the early period following surgery. In glaucoma surgery the infection may very rarely occur many months or years after the procedure, especially if anti-scarring agents are used. The first signs and symptoms are increasing pain, redness and deteriorating vision. If these occur contact the department immediately.

Very high pressure in the eye

This is a rare problem that may require a special laser procedure or a special surgical procedure to correct.

Complete loss of vision in cases of advanced glaucoma

As discussed above, complete loss of vision is normally rare. It can however be a significant risk following surgery in an eye where there is already very advanced loss of vision as a result of glaucoma.

Sympathetic Ophthalmitis

This is an inflammation and permanent loss of vision in the fellow eye following surgery in the first eye. This problem is so remote that for practical purposes may be ignored. This extremely rare complication is included in this document for completeness.

Laser related complications

The laser has occasional complications. If the eye pressure drops too suddenly, there may be a bleed behind the retina. This bleed usually settles on its own accord but may temporarily blur your vision. This complication occurs in less than 1% of cases.

The eye may become too soft in 1-4% of cases after puncture. Nothing needs to be done unless the vision blurs or there are signs visible on the retina. Your surgeon will tell you if he does detect changes on the retina due to a low eye pressure. In that case you may need an operation to build up the pressure.

After the laser the iris (coloured part of your eye) may push through the puncture sites causing the eye pressure to build up. The surgeon may then have to do a different type of laser to pull the iris away from the drainage site to allow good flow. This happens in 5-10% of cases. Rarely, the iris may have to be removed surgically in the operating room.

Contact information

Admissions Office: (0161) 276 5639, Monday - Friday 9.00am - 4.00pm.

Emergency Eye Department: (0161) 276 5445, every day 8.00am - 9.00pm.