Irish College of Ophthalmologists
Eye Doctors of Ireland
Protecting your Vision

Patient Information Leaflet

Glaucoma Filtration **Trabeculectomy** Surgery

Name of Consultant:

Address:

Telephone:

Emergency contact details:

Introduction

You have a condition of the eye called 'Glaucoma'. Glaucoma is the name for a group of eye conditions in which the optic nerve is damaged at the point where it leaves the eye. This leaflet should provide you with information that will help in your decision whether to have glaucoma filtration surgery. You might want to discuss it with a relative or carer. In order to undergo this treatment, you will have to give consent and to sign the hospital consent form where appropriate. Before you sign the consent form, it is important that you fully understand the treatment you are about to have, including alternative treatments and any risks or side-effects. If you have any questions you may wish to write them down so you can ask your eye doctor.

Why do I require this surgery?

Glaucoma is usually treated with medications in the form of eye drops that control the pressure in your eye. This is required to prevent further vision loss. Other procedures such as laser treatment or other surgical procedures can be effective. However, in some cases such as yours, where these treatments are not effective or not suitable, trabeculectomy surgery is required to control the pressure long term which if not achieved will lead to progressive irreversible loss of vision in the eye.

What is a trabeculectomy?
It is an operation used to treat high eye pressure or uncontrolled glaucoma. The surgeon creates a new channel through the white of your eye **sclera** to allow the excess fluid inside it to drain. This reduces the pressure inside your eye, minimising the risk of further peripheral vision loss from glaucoma.

The fluid does not leave your eye completely but forms a small blister-like swelling called a drainage 'bleb' on the surface, usually underneath your eyelid, so you cannot see it. The fluid then goes back into your blood stream and does not leak onto the surface of your eye. The bleb should stay permanently on the surface of your eye.

Benefits of the surgery
By lowering the pressure it helps you to keep the sight you still have and aims to prevent further loss. It will not give you back any sight you may have already lost and it will not improve your sight. Often vision is temporarily worse as the level of pressure in the eye stabilises. The benefit is long term **years** rather than immediate.

What other treatment options are available?
You can keep using eye drops, but your sight is likely to get worse. You could lose your sight without some form of surgery. We sometimes offer patients laser treatment but this is not suitable or effective for everyone.

The operation
An experienced eye surgeon will carry out the procedure or may supervise a doctor in training. The operation will be carried out either under local or general anaesthetic. If it is carried out under local anaesthetic, which is the case most frequently, you will be awake during the operation. You will be aware of a bright light but will not be able to see what is happening. Before the procedure you will be given an injection around the eye which will completely numb the eye. You may have intravenous sedation prior to this to relax you. During the operation you will be asked to simply keep your head still and lie flat for the duration of the procedure. In some cases a general anaesthetic will be required, in which case you will be asleep and not aware of what is happening during the operation.

The procedure itself will take on average between 45 and 60 minutes. The surgeon will make a cut in the white of your eye **sclera** so the excess fluid **aqueous humour** inside can drain, thereby achieving a lower pressure in the eye long term. This fluid will form a small blister-like swelling, called a drainage 'bleb', on the surface of your eye, usually underneath your eyelid. The fluid constantly filters from the bleb back into your blood stream. Your body will want to heal and form scar tissue which can lead to closure of the bleb long term, in which case the operation will not work. For this reason the surgeon will sometimes use a special anti-scarring drug or anti-metabolite called Mitomycin C **MMC** or 5-Fluorouracil **5-FU** on the operation area to reduce healing and scarring. They will also put some releasable stitches into your eye to control the pressure. These stitches can be taken out in the weeks after surgery to reduce your eye pressure gradually. These can be released manually or removed by laser in the clinic afterwards, depending on the type of stitch used.

At the end of the operation, a pad or shield will be placed over the eye to protect it.

MMC and 5-FU

Your surgeon may elect to use MMC or 5-FU, depending on his or her discretion. The use of these drugs, which reduce the likelihood of scar tissue formation and failure of the operation, is "off label". In other words the drugs are not specifically licensed for use in trabeculectomy surgery but there is very strong evidence that their use significantly increases the chances of the surgery working long term. It is thought however that their use **particularly MMC** can increase the risk of having late bleb related infection which may happen years after the surgery.

After care and what to expect after surgery

You will wear a pad or clear shield over the eye to protect it and prevent you rubbing the eye after the procedure. You will be required to use antibiotic and steroid drops afterwards to help prevent development of scar tissue around the drainage bleb and failure of the bleb which would lead to a high pressure long term. Frequent visits to the clinic are required after the operation, and often weekly for the first 4-6 weeks after the operation. This is the critical

period after the operation to allow long term success. Sometimes it is necessary to remove the sutures during this period or give injections of anti-scarring drug **5-FU**. It is common for the vision to be blurred during this period, but it will usually stabilise, and after this critical period longer term follow up is usually less frequent. It is sometimes necessary to remain on steroid drops for up to a few months afterwards.

Patient responsibilities

Your role in the prevention of infection is vital in the early period after surgery. Use of the antibiotic eye drops is essential. In addition certain other precautions are necessary, such as:

- Washing of your hands prior to drop instillation.
- Swimming is not recommended for at least 6 weeks after surgery, but this should be clarified with your ophthalmologist.
- It is recommended that you avoid sleeping on the side of your operation for one week
- Avoid touching or rubbing the eye
- It is advised that you avoid sport where your eye might be knocked for 2-4weeks
- Do not return to work until advised by your doctor if your job is physically strenuous or you are at risk of being exposed to dust or liquid in your work place
- Do not drive until you are prescribed new glasses for driving if you do not have good driving sight in your other eye.

In the period after the surgery you may experience certain symptoms as outlined below. Should you notice any of the following it is imperative that you seek medical attention or treatment from your ophthalmologist on an urgent basis:

- Severe pain
- Increasing redness in the eye
- A sticky eye that keeps producing a sticky discharge after you have gently bathed it with cooled boiled water
- A sudden or very obvious worsening or darkening of your sight
- Flashing lights
- Shadows or a 'spider web' pattern across your vision

If you have any of these symptoms, please call the hospital straight away because your sight in the operated eye could be at risk without further treatment.

What are the risks/complications of this surgery?

It is important to be aware that there is a small risk of complications, either during or after the operation. In most cases the complications are transient and can be treated but in a small proportion of cases further surgery may be needed. Very rarely some complications can result in loss of sight.

Vision

Sight may take several weeks to return to normal. Some patients will find that their vision is not quite as sharp after the surgery. The benefit is slowing **or stopping** the rate of deterioration of glaucoma. However, the operation cannot totally guarantee to stop the loss of vision in your eye. Eye surgery always carries the risk that vision may be worse or the eye may become blind after the operation.

Eye pressure control

In some cases the surgery will not lower pressure enough, with the need to recommence pressure lowering drops. If this is not adequate or alternatively if pressure becomes too low afterwards further surgery may be necessary.

Bleeding

There is a small chance of bleeding inside the eye immediately after surgery **called suprachoroidal haemorrhage**. This may require further treatment and may ultimately result in loss of sight.

Infection

There is a small chance of infection inside the eye after surgery **endophthalmitis**. This would require further treatment and may ultimately result in loss of sight. This operation will make your eye more prone to infection in the future, even in years to come. If at any time your eye becomes painful or red or if the vision becomes blurred, you should seek immediate medical help.

Risks of surgery:

1. Up to 15% of patients will experience complications in the first 4-6 weeks after surgery. These are usually self-limiting and resolve spontaneously. These include bleb leak **10%,** bleeding in the front chamber of the eye **hyphaema 8%**, shallowing of the front chamber of the eye **10%**, and collection of fluid behind the eye **choroidal effusion 13%**

2. Loss of the eye due to overwhelming infection, inflammation or high pressure causing intractable pain and necessitating surgical removal of the eye **enucleation 1/500 or 0.2%**

3. Severe loss of vision due to infection or bleeding **4/1000 or 0.4%**

4. Failure to control eye pressure, with the need for another operation **early or late 5%**

5. Vision could be made worse **up to 5% risk of losing 1-2 lines on the reading chart in advanced glaucoma**

6. Pressure that is too low **hypotony** which can lead to blurred vision **4%**
7. Infection or endophthalmitis which can be early **1/1000** or much later **up to 3%**
8. Abnormal collection of fluid in eye **choroidal effusion 4%**
9. Potentially sight threatening bleeding in the eye **suprachoroidal haemorrhage 1%**
10. Retinal detachment **1%**
11. Cataract **cloudy lens** except in those cases where the cataract has been removed **50% risk in first 5 years after surgery**
12. Irritation or discomfort in the eye that may persist **8%**
13. Drooping of the eyelid **5-10%**
14. The use of Mitomycin C can potentially increase risk of late endophthalmitis **infection** or bleb leak years after the surgery **3%**
15. In spite of surgery, vision could become worse from continuing degenerative changes in the eye. This is due to the fact that the glaucoma can gradually continue to worsen slowly despite good pressure control. The mechanism for this remains unclear

Risks of anaesthetic:

Most people undergo surgery with a local anaesthetic. This significantly reduces the likelihood of, but does not eliminate, anaesthetic complications such as drug reactions or other problems that could lead to brain damage or even death.

Complications of anaesthesia injections around the eye include perforation of eyeball, needle damage to the optic nerve, which could cause loss of vision, double vision, and drooping of eyelid.

Irish College of Ophthalmologists

The Irish College of Ophthalmologists **ICO** is the training and professional body for eye doctors in Ireland.

The ICO is dedicated to promoting and setting the highest standards of excellence and patient care in the practice of ophthalmology in Ireland. We do this by educating eye doctors in training, providing on-going education for eye doctors in practice, giving accurate medical advice to the public and policy guidance to the government.

For further information, visit **www.eyedoctors.ie**