

Introduction

Glaucoma is a disease of the optic nerve. Progressive damage of the optic nerve will lead to irreversible reduction in visual acuity and visual field and blindness. Treatment is by medical or surgical reduction of intraocular pressure, which may help to slow down the progressive damage to the optic nerve.

The level of intraocular pressure is a result of the balance of secretion and outflow of fluid inside the eye ball. Glaucoma surgery can usually lower intraocular pressure by either diminishing the production or by increasing the out flow of fluid. Sometimes, continued topical or oral anti-glaucoma drugs may be required to control the intraocular pressure.

Unfortunately even when the intraocular pressure is controlled, the damaged optic nerve and related visual functions cannot be restored. If the imbalance of intraocular fluid secretion and outflow persists or recurs, you may need another operation to prevent further deterioration.

The Operation / Procedure

1. The common ocular surgery to decrease intraocular pressure is usually performed under local anaesthesia. General anaesthesia may be used in special circumstances.
 - a. **Trabeculectomy:** To create a small drainage channel in the wall of the eyeball to facilitate the outflow of intraocular fluid in a controlled manner into bloodstream.
 - b. **Non penetrating glaucoma surgery:** A similar procedure as trabeculectomy but a very thin layer of tissue is kept behind. A piece of collagen implant may be used to maintain the patency of the drainage hole.
 - c. **Glaucoma Implant:** The implant, made of inert material like special plastic or silicone, composes of a tube about 1 cm long and a plate of about 1 to 1.5 cm in diameter. The tube is put inside the eye to drain out fluid. The plate increases the surface area available to facilitate absorption of the drained fluid.
2. Anti-metabolites (such as Mitomycin C or 5-Fluorouracil) which delay wound healing may be used to improve the success rate of the glaucoma operation.
3. Eye patch may be applied to cover and protect the operation site.
4. The procedure to decrease the production of intraocular fluid usually involves the use of laser or cryo-therapy to destroy the tissue producing the fluid.

Preoperative Preparation

1. Admit 1 day before or on same day of this “elective” operation.
2. Anaesthetic assessment. **Inform your doctors** and if you have other systemic disease such as hypertension, stroke, heart disease, diabetes or are taking western medication (especially blood thinners like Aspirin or Warfarin), traditional Chinese medicine or health supplements on a regular basis.
3. Keep fast for 6 to 8 hours before operation if under general anesthesia.
4. Empty bladder and change to operation clothes before transfer to operating room.
5. You should continue to use the usual eye drops or medications unless directed by doctor otherwise.

Postoperative Instruction**A. General**

1. Mild discomfort or pain over the operation site. Inform nurse or doctor if pain severe.
2. Nausea or vomiting are common; inform nurses if symptoms severe.
3. Inform nurses if more analgesics are required.
4. Can mobilize and get out of bed 6 hours after operation, usually go home on day 2 after the operation.

B. Wound care

1. Keep eye patch or eye shield on if any as directed by doctor.
2. Use eye drops / eye ointment as prescribed, to prevent infection and inflammation .
3. Keep the wound clean, avoid eye rubbing.
4. In order to prevent dirty water getting into the eye causing infection avoid washing your hair or swimming during the first week after the operation.
5. Wear clothes with buttons and not pullovers so as to avoid the clothes fending the operated eye causing infection.
6. Have night light on in order to prevent falls when you go to toilet as, you may not be accustomed with one eye being patched.
7. Avoid unnecessary straining after surgery.
8. You may be recommended to sleep on the side opposite to the operated eye and protect the operated eye during sleep by wearing an eye shield.

C. Diet

Resume diet, usually 4 hours after anaesthesia, and when taking sips of water well. Take liberal amounts of vegetables and fruits to alleviate your constipation if there is no contraindication.

Common Risks and Complications (not all possible complications are listed)

A. Anesthesia related complications

1. Cardiovascular : myocardial infarction or ischaemia, stroke, deep vein thrombosis, pulmonary embolism.
2. Respiratory : atelectasis, pneumonia, asthmatic attack, exacerbation of chronic obstructive airway disease.
3. Allergic reaction and shock.

** Toxicity of local anaesthetic may result in serious complication although rare.

B. Procedure related complications

In general, glaucoma surgery is a safe operation. However, complications can occur occasionally even days, weeks, or even years after the surgery, including:

Wound gapping	Blurred vision due to excessive lowering of pressure
Bleeding in the eye	Failed to normalize pressure, need to re-operate
Infection	Development or deterioration of cataract
Chronic inflammation	Uncontrolled leakage of eye fluid through button holes in conjunctival flap covering the fluid outlet
Irritation or discomfort	Corneal oedema
Exposure of implant	Degenerative changes in the eye, vision get worse
Double vision	Loss of vision

Complications related to anti-metabolites

Corneal surface toxicity	Cataract	Thin bleb	Maculopathy
Keratitis	Corneal scleral melting	Hypotony	Decrease in visual acuity

Things to take note on discharge

1. Contact your doctor or a nearby Accident & Emergency Department if you find increasing discharge, pain and or redness around the wound.
2. Take analgesics prescribed by your doctor if required.
3. For several weeks following the surgery, the eye pressure has not yet stabilized. Your eye doctor will observe your eye closely and examine you frequently. Avoid lifting heavy objects, bending or straining.
4. You must follow instructions strictly on taking medications and see the doctor as scheduled.
5. If you have any excessive bleeding, severe pain, fever or signs of wound infection such as redness, swelling or large amounts of foul-smelling discharge coming from your eye, see your doctor immediately or attend the nearby Accident and Emergency Department.

Remarks

This is general information only and the list of complications is not exhaustive. Other unforeseen complications may occasionally occur. In special patient groups, the actual risk may be different. For further information please contact your doctor. Evangel Hospital reserves the right to amend this leaflet without prior notice. We welcome suggestions or enquiries on the information provided in this leaflet. Please contact our Healthcare professionals so that we could follow up and make improvement.

Reference

Hospital Authority: "Glaucoma" (2023)

Smart Patient: http://www.ekg.org.hk/pilic/public/Ophthal_PILIC/Ophthal_Glaucoma_0067_eng.pdf (06-07-2023)