

Introduction

Vitreous humour is a clear, transparent jelly-like substance inside the eye in front of the retina. Pars Plana Vitrectomy is a microsurgical procedure to remove the vitreous humour and replace it with vitreous substitutes like special saline solution, gas or silicone oil.

Indications

Pars Plana Vitrectomy is used to treat various kinds of vitreo-retinal disorders including:

1. Vitreous haemorrhage or inflammation.
2. Retinal detachment.
3. Proliferative diabetic retinopathy (including vitreous haemorrhage).
4. Macular hole or vitreo-macular traction, Epiretinal membrane (macular pucker).
5. Intraocular infections (endophthalmitis).
6. Retained lens material or dislocated lens implants following cataract surgery.
7. Intraocular foreign body.
8. Traumatic eye injuries.

The Operation / Procedure

1. The procedure can be performed under general or local anaesthesia.
2. Small cuts are made in the sclera (the white of the eye), for insertion of fine surgical instruments into the eye. Tiny dissolvable stitches may be used to close the wound.
3. Vitreous jelly, blood, scarred tissue and fibrous membranes etc are removed through the small surgical wounds. Vitreous substitute is injected.
4. Special silicone rubber or sponge may be used if scleral buckling procedures are performed for the repair of retinal detachment.
5. Intraocular gases or silicone oil may be used to flatten and support the detached retina and keep it in place to allow time for healing.
6. The intraocular gas will go by itself in a few weeks. If silicone oil is used, a second operation may be required to remove it when the retina is stabilized.
7. Laser or cryotherapy may be applied during surgery to seal breaks in the retina which have caused the retinal detachment. They may also be used for retinal ablation in advanced diabetic retinopathy.
8. The procedure usually takes 1-2 hours, but it may take longer in complicated conditions or when it is combined with other procedures such as scleral buckling or lens removal.

Preoperative Preparation

1. Admit 1 day before or on same day of this “elective” operation.
2. Anaesthetic assessment. Inform your doctor about drug allergy, any systemic diseases such as hypertension, stroke, heart disease, diabetes or if you are taking regular medications (especially blood thinners such as Aspirin, Warfarin or other new oral anticoagulants), traditional Chinese medicine or health supplements.
3. Keep fast for 6 to 8 hours before operation.
4. Empty bladder and change to operation clothes before transfer to operating room.
5. Blood tests, chest x-ray are usually required to prepare for general anaesthesia.

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.

B. Wound care

1. The operated eye will be swollen, red and sensitive. Tearing and gritty sensation may be experienced.
2. Vision may remain blurred during the early postoperative period especially when gas has been injected into the eye or when the eye condition is not stable yet. If gas or oil has been injected into the eye, you will be advised to maintain a special posture, for example, in a face-down position or lie on your front in bed as much as possible. The maintenance of this posture is important for recovery and success of the operation.
3. Since many vitreoretinal diseases are usually severe and potentially blinding in nature, full recovery of vision may not be possible. Final visual outcome depends on the severity of the disease, the response and recovery of the eye and the occurrence of any significant complications.

4. Re-operation may be required if the disease process cannot be settled or if there is any significant complications.
5. Use medications and eye drops as directed.
6. Avoid washing your hair for the first week and to wear clothes with buttons rather than pullovers in order to avoid the clothes coming into contact with the operated eye to prevent infection.
7. Leave some light on at night to avoid fall as you may not be accustomed to the eye-padding or blurred vision after surgery.

C. Diet

Resume diet, usually 4 hours after anaesthesia, and when taking sips of water well.

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, etc.
 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

Par Plans Vitrectomy has been commonly performed and perfected for over the past decades. However, it carries some possible risks. They include:

Retinal tear or retinal detachment	Anterior segment ischemia, exposure of explants and squint related to scleral buckling procedure
Infection	
Cataract formation or progression	Visual field loss
Bleeding inside the eye	Failure to attach the retina or retinal re-detachment requiring additional operations or treatment
Persistent lower pressure in eye or hypotony, Increased pressure in eye or glaucoma	
Corneal edema or degeneration	Recurrence of disease process
Refractive changes	Blindness
Retinal vascular occlusion	Sympathetic ophthalmia
Macula changes including epiretinal membrane or macula edema	

Things to take note on discharge

1. Follow the instruction to instill eye drops or apply eye ointment, see the doctor as scheduled.
2. Maintain the special postoperative posture for the specified duration as advised by the doctor.
3. Do not travel by air or go to high altitude when gas was injected inside the eyeball until it has been absorbed completely (as advised by doctor). The reduced atmospheric pressure causes the gas bubble to expand, which can raise the pressure in the eye to dangerous levels. Your vision will usually improve gradually when the eye is recovering well and the gas is being absorbed.
4. Do not rub your eyes, contact sports or vigorous activities.
5. Avoid water, soap or shampoo from getting into the eye, avoid swimming.
6. If you need other general anesthetic operation before the full absorption of the injected gases, please inform the attending anaesthetist that a special gas had been injected inside your eyeball and need special precaution. Wear your special bracelet and keep the gas card with you until the gas is completely absorbed.
7. If your vision worsens suddenly, or if you have fever and chills, or if you have increasing eye redness, swelling, pain, or discharge, you should see your doctor immediately or seek medical attention at 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: "Pars Plana Vitrectomy" (2023)

Smart Patient: http://www.ekg.org.hk/pilic/public/Ophthal_PILIC/Ophthal_ParsPlanaVitrectomy_0070_eng.pdf (06-07-2023)