

## **Pars Plana Vitrectomy**

### **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:

- Vitreous haemorrhage or inflammation
- Retinal detachment
- Proliferative diabetic retinopathy (including vitreous haemorrhage)
- Macular hole or vitreo-macular traction
- Epiretinal membrane (macular pucker)
- Intraocular infections (endophthalmitis)
- Retained lens material or dislocated lens implants following cataract surgery
- Intraocular foreign body
- Traumatic eye injuries

### **The Procedure**

- The procedure can be performed under general or local anesthesia.
- Small cuts are made in the sclera, the white of the eye, for placement of fine surgical instruments into the eye during the procedure. Tiny dissolvable stitches may be used to close the wound. It is also possible to perform such surgery without the use of stitches.
- Vitreous jelly, blood, scarred tissue and fibrous membranes etc are removed through the small surgical wounds by the special instruments.
- Special silicone rubber or sponge may be used if scleral buckling procedures are performed for the repair of retinal detachment.
- 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. 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.

- 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.
- 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.

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

### **Before the Procedure**

- Blood tests, chest x-ray are usually required to prepare for general anaesthesia.
- Fasting may be needed, as instructed by healthcare professional

- Inform your doctor if you have 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.

### **After the Procedure**

- The operated eye will be swollen, red and sensitive. Tearing and gritty sensation may be experienced.
- 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.
- 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.
- Re-operation may be required if the disease process cannot be settled or if there is any significant complications.
- Use medications as directed
- 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
- Leave some light on at night to avoid fall as you may not be accustomed to the eye-padding or blurred vision after surgery

### **Follow Up**

- Follow the instruction to instill eye drops or apply eye ointment, see the doctor as scheduled
- Maintain the special postoperative posture for the specified duration as advised by the doctor
- 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.

- Do not rub your eyes
- Avoid water, soap or shampoo from getting into the eye
- Avoid swimming, contact sports or vigorous activities
- 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.
- 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. The actual risks may be different for different patients. During the operation, unpredictable condition may arise, and additional procedures may be performed if necessary. For further information, please contact your doctor.