

# ADELAIDE EYE AND RETINA CENTRE

## Vitreotomy surgery

Vitreotomy surgery is an important technique by which most of the retinal disorders can be treated effectively. It is microsurgical procedure in which tiny instruments are used to correct the retinal disorders. It essentially includes removal of the vitreous jelly with the help of very fine cutting device called a vitrectomy probe or cutter.

This procedure is done either under local or general anaesthesia depending on the condition of the patient and the retinal disorder. Under all aseptic precautions the eye is covered from all sides by sterile drapes and a clip like instrument called the eye speculum is inserted in the eye to keep the eye open. The procedure is done under operating microscope using special contact lens with different magnifications, through an area of the eye known as pars plana, as entering through this part prevents damage to the lens and the retina. Three very tiny holes are made at different locations in the pars plana using a trochar and canula system and the instruments are inserted in the eye through these holes. These tiny holes are self sealing and hence require no stitches after the surgery in most cases. As a result, the total operation time is minimized and recovery is faster. One of the three holes is used to insert an irrigation cannula to constantly maintain the contour of the eye with the help of fluid similar to natural eye fluid. The second hole is used to introduce the vitrectomy probe and the third one for the endoilluminator which is a fiberoptic light source to visualize the inside of the eye.

After the removal of the vitreous jelly further surgery depends on the type of retinal disorder. The following are some of the retinal disorders and their management:

**Macular hole:** After removing the vitreous jelly, the surface layer of the retina called the internal limiting membrane is peeled off with the help of microsurgical forceps to remove all the tractional fibers. The eye is filled with the bubble of mixture of air and gas to support the macula to help seal the hole. It is important to maintain the posture after the

surgery to hold the bubble in correct position. (refer to macular hole information sheet)

**Epiretinal membrane:** After removal of vitreous, the epiretinal membrane is peeled off with the microsurgical forceps and the vitreous cavity is filled with fluid similar to natural eye fluid. (refer to epiretinal membrane information sheet)

Retinal detachment: After vitrectomy, the retina is pushed back with the help of gas bubble or silicone oil. Gas bubble is absorbed slowly reattaching the retina. Silicone oil is used in selected cases which require long term tamponade. The patient is able to see through the transparent silicone oil. Removal of silicone oil requires another operation in which an incision is made in the upper part of the eye and the oil is removed. This incision is then closed with the help of stitches.

In some cases, additional procedure called scleral buckling is done in which a silicone band/buckle is placed 360 degrees around the outer surface of the eye , under the muscles and tightened to approximate the detached surfaces. The fluid, if present in between the layers of the retina, is drained by making a small incision, before scleral buckling.

In patients with dense cataract, obscuring the visualization of the retina, a procedure called lensectomy is done which involves removal of lens similar to routine cataract removal (phacoemulsification). An artificial lens can be inserted at the end of the procedure if not contra-indicated.

Endophotocoagulation: It means applying laser to treat conditions like retinal tears to prevent retinal detachment. It is also commonly used to treat proliferative diabetic retinopathy.

Some other conditions which require vitrectomy are:

Proliferative diabetic retinopathy

Intraocular infections

Retinal Detachment

Eye trauma

Foreign body inside the eye

Retained lens matter or dropped intraocular implant

After the procedure is over, the canulae are removed and eye is padded overnight with an antibiotic ointment. It is extremely important to have an eye examination done on the following day to check the condition of the eye and the eye pressures.

This is usually done as a day surgery procedure, requiring admission an hour prior to surgery. Then about 1-2 hours in recover before going home.

You will be required to see Doctor the day following surgery and one week after and about three weeks after surgery. Visual recovery is slow, and can continue to improve over the next 6 – 12months.

Some of the complications associated with the surgery are cataract formation, infection, bleeding, retinal detachment, incomplete closure of the macular hole, increase in eye pressure and damage to the cornea, loss of vision, epiretinal membrane . Hence the potential risks and benefits should be discussed with the doctor before undergoing the procedure as any of these complications can lead to severe loss of eye sight.

Early diagnosis and prompt treatment is a key to successful surgical and visual outcome. Hence patients with high risks or those detected with retinal disorders should have regular eye examinations done.