

Vitreectomy for Proliferative Diabetic Retinopathy

Proliferative diabetic retinopathy (PDR) is a complication of diabetes caused by changes in the blood vessels of the eye. In PDR, the retinal blood vessels are so badly damaged they close off. In response, the retina grows new, fragile blood vessels.

Unfortunately these new blood vessels are abnormal and grow on the surface of the retina, so they do not supply the retina with blood. Occasionally these new blood vessels leak and cause a vitreous haemorrhage. Blood in the vitreous, the clear gel-like substance that fills the inside of the eye, blocks light rays from reaching the retina. A small amount of blood will cause black floaters, while a large haemorrhage might block all vision, leaving only light or dark perception.

The new blood vessels also cause scar tissue to grow. The scar tissue shrinks, wrinkling and pulling on the retina and distorting vision. If the pulling is severe, the macula (small area at the centre of the retina that allows us to see fine detail) may detach from its normal position and cause visual loss.

Laser to the retina may be used to shrink the abnormal blood vessels and reduce the risk of bleeding. The body will usually absorb blood from a vitreous haemorrhage, but that can take days, months or even years. If the vitreous haemorrhage does

not clear within a reasonable time, or if a retinal detachment is detected, an operation called a vitrectomy can be performed.

During the vitrectomy operation the surgeon makes tiny incisions in the sclera (the white part of the eye). Using a microscope to look inside the eye and microsurgical instruments, the surgeon removes the vitreous haemorrhage and scar tissue from the retina if present.

During the procedure, the retina may be treated with laser to reduce future bleeding or to fix a tear in the retina. A gas bubble that slowly disappears on its own may be placed in the eye to help the retina remain in its proper position.

The vision will be blurred for a few weeks after the operation and following the injection of gas bubble you may see a wobbly black rim appear in your line of vision. The bubble will move as you move and may stay with you for 2 to 4 weeks. It will gradually get smaller, or may break up into small bubbles before disappearing. The eye will secrete clear fluid replacing that which was removed during the operation.

After vitrectomy you are expected to develop a cataract within 6 months to 2 years. Cataract is an opacity or misting within the lens of the eye and requires a subsequent operation called cataract extraction. However, often cataract surgery can be performed at the same time as the vitrectomy. This will avoid having to return for a second operation in due course.

What Are The Benefits Of Surgery?

Vitrectomy surgery often improves or stabilizes vision. Once blood clouded vitreous is removed and replaced with a clear medium (often a salt water solution), light rays can once again focus on the retina. Vision after surgery depends on how damaged the retina was before surgery.

Are There Any Risks Involved?

As with any procedure there is a small risk of complications.

Some possible complications after the operation:

- High pressure inside the eye which can usually be controlled with eye drops, but sometimes an operation is necessary.
- Inflammation, more than usual in diabetic eyes.
- Recurrent bleeding in the vitreous
- Displacement of the lens implant
- Swelling of the retina.
- Detached retina which can lead to loss of sight.
- Infection in the eye, which can lead to loss of sight or even the eye.

Complications are rare and in most cases can be treated effectively. In a small proportion of cases further surgery may be needed. Very rarely some complications can result in blindness.