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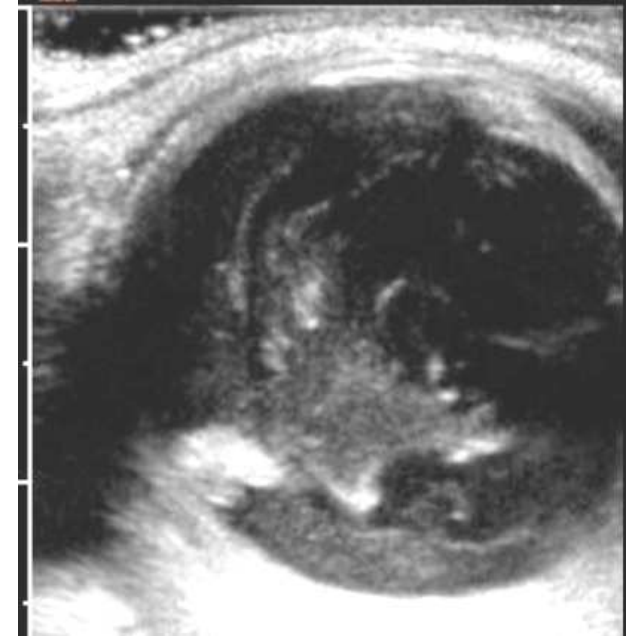
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Diabetic Retinopathy Surgery

Ophthalmology Department



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Where can I find more information?

The RNIB have further information, especially some practical advice: Helpline 0303 1239999; internet www.rnib.org.uk; email: helpline@rnib.org.uk

Contact Details

We want to hear from you if you are worried about anything:

- Ashford Hospital: **01784 884402**
- St Peter's Hospital: **01932 722686**

Senior Nurses

Sister, Georgina Gilson, Ashford Hospital
Deputy Sister, Maggie Lewis, Ashford Hospital
Deputy Sister Dorothy Adjorlolo, Ashford Hospital
Ophthalmic Nurse Practitioner, Jain Sidhu, St. Peter's Hospital

Further Information

We endeavour to provide an excellent service at all times, but should you have any concerns please, in the first instance, raise these with the Matron, Senior Nurse or Manager on duty.

If they cannot resolve your concern, please contact our Patient Experience Team on 01932 723553 or email asp-tr.patient.advice@nhs.net If you remain concerned, the team can also advise upon how to make a formal complaint.

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driving. You should ask your eye doctor's advice if you are in doubt and also make a personal common-sense decision about whether you feel ready to drive again.

When will I need to be seen again after the surgery?

Post-operative review is usually performed the next day (or within a few days) after surgery; then 10-14 days later and, provided all is well, about 3 months later.

Will I have to get my glasses changed?

Most people will need to change their spectacle prescription at some point after surgery. This would normally be at about 3 months following the operation, after the gas bubble has gone. As each case is different, please check with your surgeon before visiting an optician.

What is the retina?

The back of the eye has a light-sensitive lining called the retina, similar to the film in a camera. Light is focused through the eye onto the retina, allowing us to see. The centre part of the retina is called the macula - it is here that light must be focused for us to see fine detail, to be able to read and to see in colour. The vitreous is the gel inside the eye, which lies between the retina and the lens.

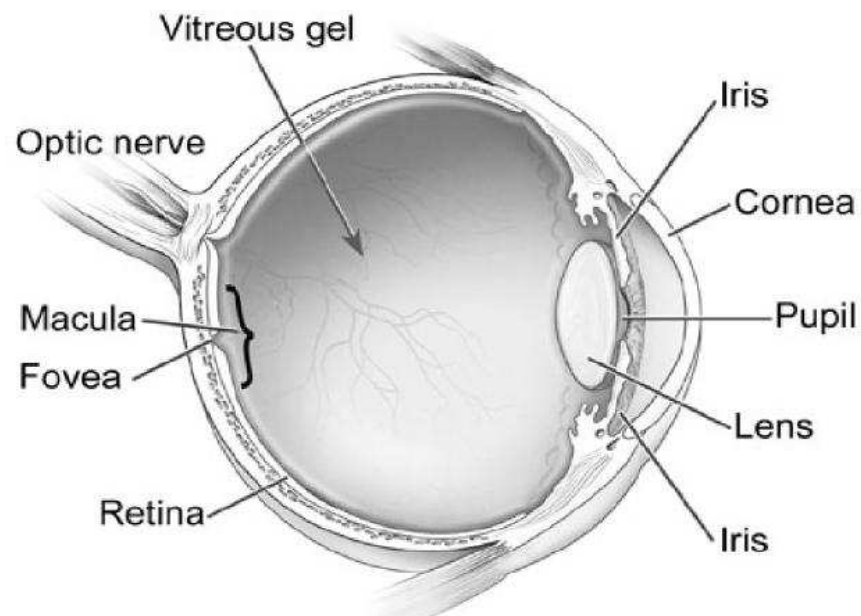


Figure 1: Cross section of eye, showing back (retina & centre of retina- macula) and front (cornea, lens) of eye.

Why do I need surgery for the diabetes in my eye?

When diabetes starts to affect the retina in your eye it is called diabetic retinopathy. Diabetes can damage the retina in two main ways either causing vessels to leak (leading to swelling or diabetic macular oedema) or it can close down blood vessels.

When the blood vessels start to close down in the eye because of the diabetes, this can cause new blood vessels to grow. This is the advanced type of diabetic retinopathy (proliferative diabetic retinopathy). These new blood vessels can bleed easily and can cause bleeding into the gel of your eye (vitreous haemorrhage) which can cause floaters or reduced vision.

This blood can clear up on its own but in some cases surgery may be required, especially if your eye has never had laser before or there is tugging on the retina from the bleeding. In these situations, if things progress without any treatment, you may be go blind in that eye.

What is a vitrectomy?

This is an operation to remove the vitreous from the eye. The vitreous is the clear jelly filling the eye and most of the blood is removed with the vitreous. The surgeon makes tiny holes through the white of the eye (the sclera) to gain access to the vitreous space and uses a microscope and fine instruments to perform the operation. The vitreous does not re-grow and so after the operation the eyeball will be filled with fluid which is produced naturally inside the eyeball.

distracting. You must not fly until the gas bubble has gone and you must inform the anaesthetist if you require a general anaesthetic for any operation while there is gas in your eye.

How much time off work will I need?

Most people will need at least two weeks off work after surgery. Sometimes this may be longer. While there is gas in the eye the vision is quite poor and the ability to judge distance is affected. The amount of time off work will depend on the kind of work you do and the kind of surgery that is done. This will need to be discussed with your surgeon.

When can I drive after my vitrectomy?

The licensing authority (DVLA in the United Kingdom) has visual standards that must be met for you to be allowed to drive. All diabetics taking tablets for diabetes or insulin should inform the DVLA and in many cases patients with diabetes will be allowed to continue driving. If you have any treatments to the retina it is important to inform the DVLA to make sure that you still meet their requirements. In particular laser treatment of diabetic retinopathy can sometimes lead to patients having worse peripheral sight than is required by the DVLA standards.

You should discuss this directly with the DVLA and ask your doctor for advice if you have any doubts.

In addition your doctor may advise a period without driving after surgery. If gas has been put into the eye this could interfere with driving and you should wait for the gas to go away fully before

your tears can be a little blood-stained and this may show through the eye pad used on the first night. Your lid may be droopy for a few weeks and usually recovers completely.

If you have had gas / air put into the eye, your vision will be very blurred after the operation. The gas can take 2-12 weeks to disappear. As the gas gets smaller in your eye, you will notice a line going from the top to the bottom of your vision.

If at any point your eye starts to become more painful, more red with a yellow discharge or the vision gets worse, please contact the numbers at the end of the leaflet urgently.

Will I need to instill eye drops after the operation?

You will be given an eye drop to reduce inflammation (steroid drop), another to prevent infection (antibiotic), and sometimes additional drops to keep the pressure inside the eye within normal limits. You will be advised on how many times a day to use the drops before you leave hospital. Use the drops regularly until your first postoperative outpatient visit. You will then be given further instructions on how long the drops need to continue for.

What can I do after surgery?

If you have been given any posturing instructions then these should be followed. You can bath or shower, but avoid splashing water near the eye. Generally you may do anything with which you are comfortable.

If a gas bubble has been put into the eye, most people choose not to drive until the gas bubble goes since the gas bubble can be

When is vitrectomy considered for patients with vitreous haemorrhage?

Blood can clear from the vitreous cavity gradually with time without surgery. Vitrectomy is considered if the blood is taking a long time to clear or if there are frequent haemorrhages. In addition the eye doctor may feel that an early vitrectomy could prevent further problems developing while waiting for the blood to clear, particularly if the cause of the haemorrhage is not certain or if you have not had any prior laser treatment for your diabetic retinopathy.

What are the likely benefits of vitrectomy for diabetic vitreous haemorrhage?

The operation is performed to remove the vitreous with the blood and therefore to make the vision clearer. The operation may also reduce the tugging of the vitreous on the abnormal blood vessels which makes the chance of them bleeding again less likely.

Will the operation prevent me having future eye problems?

As described in the section below (“what are the possible side-effects of vitrectomy”), there may be reasons related to the vitrectomy why further treatments or operations may be required. However in addition you should make every effort to achieve good control of blood sugar, blood pressure and cholesterol. Good control of these factors can reduce the risk of further deterioration of sight and surgery cannot always be relied on to restore sight that is lost as a result of diabetes.

Under what circumstances might I need to contact the Eye Department before my operation?

In the days leading up to surgery please let us know about any problems that you think may affect your operation. In particular if you have problems with your diabetes control or if you have any kind of infection let the eye department know well in advance.

If your vision clears while you are waiting for your operation you may no longer need surgery - please let us know early so that we can schedule another patient for surgery (contact numbers are given at the end of this leaflet).

What are the possible side-effects of vitrectomy?

There are many potential side-effects of vitrectomy and the list below is not exhaustive. Most patients have straightforward surgery without significant complications.

Some important side-effects of vitrectomy for diabetic vitreous haemorrhage are:

- **Cataract** – This is a clouding of the lens inside your eye which can cause blurred or reduced sight. If you have not already had cataract surgery, you may develop a cataract as a consequence of having a vitrectomy for diabetic vitreous haemorrhage. There is a definite chance of developing a cataract which may occur a few weeks, months or years after the operation. Cataract surgery replaces the cloudy lens with a clear artificial lens.
- **Retinal tear and retinal detachment** – A tear in the retina may occur 1 in 10 times with this surgery. Usually tears can

you don't need to worry too much about keeping the eye still and you don't usually see clearly during the operation.

A sticky sheet is stuck to the skin around the eye during the operation and the sheet covers the other eye. The sheet covers your face but is lifted up off the mouth and nose. If you are having a local anaesthetic and suffer from claustrophobia, please tell the surgeon / pre-assessment nurse since you may need to have a general anaesthetic instead.

During the operation we will ask you to lie as flat as possible and keep your head still.

How long will I have to stay in hospital?

For most patients the operation can be done as a day case (you come into hospital on the day of the operation and go home after the operation later on the same day). Be prepared to be in hospital for some hours before and after the operation.

Occasionally, patients may stay overnight in hospital after surgery and if necessary for longer to allow recovery from general anaesthesia or if the eye requires close monitoring.

What will I expect to feel / look like after the operation?

You should expect your eye to feel a little gritty after the operation. When you take the pad off the following day the eye may be very bloodshot. This is normal. It is normal for your eyelids to be puffy and for your eye to water a lot. Occasionally

eye to support the retina for a while. If we use a gas bubble, your normal body fluids will replace it naturally over time. If we use silicone oil, we usually remove this with another operation several months after your first operation.

As the blood and vitreous are being removed the surgeon is able to see the retina more clearly. This may reveal other features that require attention. For example there may be firm attachments between the vitreous and the retina, and the vitreous may be pulling on or distorting the retina. This may require careful separation which may add time to the operation.

What anaesthetic will be used?

Some vitrectomies are performed under general anaesthesia. When you arrive in the operating theatre anaesthetic room, the anaesthetist will normally give you an injection in your hand or arm and you will then stay asleep during the operation. The anaesthetist will monitor your heart rate, breathing, blood oxygen, and blood pressure whilst you are under the anaesthetic. You may feel tired and sleepy for 6-12 hours after the operation.

Local anaesthesia is increasingly being preferred to general anaesthesia. If you have a local anaesthetic, you will be awake during the operation. Before the operation, we will give you eye drops to enlarge your pupil. After this, we will give you an anaesthetic to numb your eye. This involves injecting local anaesthetic solution into the area around your eye. During the operation you will not need to worry about keeping your eye open – the lids are gently held open with an eyelid speculum. The local anaesthetic also “numbs” the eye movements and the vision so

be identified and treated at surgery and cause no further problems (see section “Will the surgeon do anything else to my eye at the time of the vitrectomy?”). However, occasionally a retinal tear allows fluid to pass from the vitreous cavity between the retina and the inside of the wall of the eyeball and the retina comes away like wallpaper coming off the wall. This is known as retinal detachment and may occur in 1 in 50 cases. Most retinal detachments can be repaired with further surgery but occasionally they cannot and this leads to loss of sight. Tears or detachment are more likely with more complex surgery.

- **Postoperative vitreous cavity haemorrhage** – This occurs in 3 out of 10 of patients after vitrectomy for diabetic vitreous haemorrhage and refers to blood still present in the eye immediately after surgery (residual blood) or the occurrence of a new haemorrhage into the vitreous cavity at some time after surgery (recurrent vitreous bleeding). Recurrent vitreous bleeding usually occurs between 2 and 6 months after surgery. Sometimes the blood can clear again spontaneously but in other patients it does not clear quickly and can sometimes cause high pressure inside the eye. A further operation called a vitreous washout for residual blood or recurrent blood may be required for 1 in 10 patients at some point after the initial vitrectomy for diabetic vitreous haemorrhage. The experience of this vitreous washout operation for the patient feels similar to the experience of the original vitrectomy operation.
- **Raised pressure in the eye** – This may occur for several reasons. Occasionally if pressure is very high the eye can be painful and patients can experience nausea and vomiting. Usually the pressure can be controlled with eye drops or

medications for a few weeks. Occasionally, however, further surgery is required and in some cases the sight is damaged particularly if the pressure rise is very high and prolonged.

- **Sympathetic ophthalmia** – This is a condition where surgery to one eye can cause inflammation in both eyes. This may require strong medications and can result in poor sight in both eyes. This condition may occur between 1 in 1000 and 1 in 2000 times after vitrectomy.
- **Pupil size and focusing** – Occasionally especially if laser or freezing treatment is employed at surgery, the pupil can remain larger on the treated side, even after stopping eye drops given after surgery which may have these effects. This can affect focusing and you could be sensitive to bright light. This usually almost completely recovers over the months following surgery.
- **Reduced peripheral field (or side vision) and reduced night vision** – This may occur as a consequence of laser treatment performed at surgery. Sometimes this can stop patients driving because the DVLA standards require patients to have a certain amount of peripheral field.
- **Endophthalmitis** – This is a term we use for infection inside the eyeball. It may occur between 1 in 1000 to 1 in 2000 times after surgery. This can be bad for the eyesight long-term and may lead to further treatment or operations.
- **Choroidal haemorrhage** – This is bleeding between the layers of the wall of the eyeball and may occur in around 1 in 1000 patients. This complication can badly affect vision long-term and further operations may be required.

- **Loss of the eye** – This is a very rare event following this operation. Most commonly surgery to remove an eye or part of the eye is performed if the sight is lost and the eye has become painful or unsightly. This may occur because of factors unrelated to the surgery. Afterwards a cosmetic shell or “glass eye” can achieve an extremely good.
- **How long will the operation take?**
A vitrectomy for diabetic vitreous haemorrhage normally takes between 1 and 2 hours but may take longer depending on the complexity of the case.

Will the surgeon do anything else to my eye at the time of the vitrectomy?

At the time of the operation it may be necessary to perform additional treatments such as laser treatment. Laser treatment is often performed at vitrectomy in diabetic patients. The laser heats up and deliberately destroys some of the peripheral retina and this is thought to reduce the oxygen demands of the retina. This in turn, reduces the growth of new abnormal blood vessels. This can even cause existing abnormal blood vessels to shrink. Laser treatment can affect the peripheral sight (see “What are the possible side effects of vitrectomy” below) and this may be considered to be a necessary consequence of efforts to try to protect the central sight.

If a tear occurs in the retina the surgeon may use freezing or further laser treatment to the retina to reduce the risk of retinal detachment (see “What are the possible side effects of vitrectomy” below). We may then put a gas or oil bubble in the