Vitreectomy for diabetic vitreous haemorrhage

We’ve given you this factsheet because you have had a vitreous haemorrhage (bleeding in your eye). You may need to have a small operation called a vitrectomy to remove the blood and the vitreous (clear jelly in the eyeball). We hope this factsheet will help to answer some of your questions.

What is a diabetic vitreous haemorrhage?

The main chamber of the eyeball is called the vitreous cavity. It is normally filled with a clear jelly called vitreous. There are fine blood vessels in the eye which supply oxygen and nutrients to the retina (the lining at the back of the eye). A vitreous haemorrhage is when these blood vessels bleed into the vitreous.

People who have diabetes are more likely to have a vitreous haemorrhage because their fine blood vessels may have abnormalities. This means the blood vessels may close up and stop supplying oxygen and nutrients to the retina. When this happens, the retina grows new, more fragile vessels that cannot supply the retina with blood. These new vessels grow into the vitreous and can bleed, particularly if the vitreous is pulling on them.

Will a vitreous haemorrhage affect my vision?

If you have a small amount of bleeding, you may notice haziness and some new floaters (wispy shadows like dark hairs or blobs which move around and are most noticeable against a bright background). If you have a larger amount of bleeding, the blood may block your eyesight by preventing light from passing through the eye.

Treating a diabetic vitreous haemorrhage

In some cases we may advise you to wait for the blood to clear on its own. We may use laser treatment to reduce the chance of further bleeding.

If the blood is taking a long time to clear or if you are having frequent haemorrhages, you may need to have a vitrectomy operation to remove the vitreous and most of the blood. This will reduce the chance of further bleeding.

Your eye doctor may also feel that an early vitrectomy could prevent further problems developing while you are waiting for the blood to clear. This could be because the cause of the haemorrhage is not certain or because you have not had any laser treatment for your diabetic retinopathy.

Vitrectomy operation

A vitrectomy operation is a form of ‘keyhole surgery’. It can be done with a local anaesthetic (when the eye is numbed so that you can’t feel any pain) or a general anaesthetic (when you are asleep for the whole operation). Most people choose to have the operation with a local anaesthetic because they can usually go home on the same day. If you chose to have a local anaesthetic, we may also give you some sedating medication to reduce anxiety.

In the operation, the surgeon will make three small surgical cuts (1 to 2 mm in size) in the white of the eye. Under a microscope, they will use very fine instruments to remove the vitreous jelly and then fill the eye with a temporary gas bubble, which presses against the incisions to help them seal. The bubble of gas will block
your vision while it is in your eye. Depending on the type of gas we use, it can take between seven days and two months for the gas to slowly disappear.

During the operation we may also need to perform additional treatments such as laser treatment. We can use laser treatment to deliberately destroy some of the peripheral retina which may reduce the growth of new abnormal blood vessels and cause existing abnormal blood vessels to shrink. Laser treatment can affect your peripheral sight but it can help to protect your central sight.

If there is a tear in the retina, the surgeon may use freezing or further laser treatment to the retina to reduce the risk of retinal detachment. They can put a gas bubble or a silicone oil bubble into the eye to support the retina. If we use a gas bubble, it will disappear over a few days or weeks, and your normal body fluids will replace it naturally. If we use silicone oil, this will usually be removed with another operation several months later.

The operation usually takes 45 to 90 minutes.

When the surgeon removes the blood and vitreous, they will be able to see the retina more clearly. This may reveal other features that need 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.

After a vitrectomy operation

Travel

You must not fly or travel to high altitude on land while the gas bubble is still in your eye. The bubble will expand at altitude, causing very high pressure which will result in severe pain and permanent loss of vision.

This exclusion does not apply once the gas has fully absorbed. You will notice the bubble shrinking and will be aware when it has completely gone.

Anaesthetic

If you need to have a general anaesthetic while gas is in your eye, you must tell the anaesthetist.

This exclusion does not apply once the gas has fully absorbed. You will notice the bubble shrinking and will be aware when it has completely gone.

Work

Most people will need two weeks off work after their operation, depending on the type of work they do and the speed of their recovery.

Your vision will be reduced while the gas bubble is in your eye and this also affects your depth perception. Discuss this with your surgeon before you decide what to do.

Driving

You must be able to meet the Driver and Vehicle Licensing Authority (DVLA) visual standards to be allowed to drive.

Check with the DVLA before driving if you:

• take tablets for diabetes or insulin
• have had any treatments to the retina
• have had laser treatment

In many cases, people are allowed to continue driving.
Your doctor may advise you not to drive for a period after the operation. Wait for the gas bubble to disappear fully before driving, as this could interfere with your vision.

Ask your doctor for advice if you have any doubts and then make a personal decision about whether you feel ready to drive again.

**Looking after your eyesight**

It is very important that you have good control of your blood sugar, blood pressure and cholesterol to reduce the risk of future eyesight problems. Ultimately, the operations that we perform on your eyes do not undo the damage that the diabetes has done. They simply limit the impact that it has. The better you can manage your diabetes and blood pressure, the more you help us to look after your eyes.

**What can I expect for my vision?**

Depending on the amount of blood in your eye, the improvement in vision can range from a small change to a big difference. The change also depends on the amount of pre-existing damage to your retina. Usually the operation restores your vision to the level it was prior to the vitreous haemorrhage, however sometimes there can be hidden damage occurring behind the haemorrhage that is not evident until the blood is cleared away.

**Risks of vitrectomy surgery and laser treatment**

As with all operations, there are risks to take into account before having vitrectomy surgery and/or laser treatment.

Possible complications include:

- **cataract** (when the natural lens in the eye goes cloudy)
  If you have not had a cataract operation previously, you may develop a cataract after the vitrectomy operation. The risk of getting a cataract is lower if you are younger and if you have no cataract present before the operation.

- **retinal detachment** (when the retina detaches from the back of the eye)
  This affects 2% of patients who have a vitrectomy. Most retinal detachments can be repaired with another operation. In some cases this may lead to loss of sight. If the surgeon finds any tears in the retina in your first operation you may need a long-lasting gas bubble to prevent these tears from progressing to retinal detachment.

- **re-bleeding** (bleeding in the eye after the operation)
  Re-bleeding affects three out of ten people who have had a vitrectomy operation. There may be blood in the eye immediately after the operation (residual blood) or new bleeding two to six months later (recurrent vitreous bleeding). If the blood doesn't clear quickly on its own we can treat it with a further operation called a vitreous washout. About one in ten people who have had a vitrectomy operation will need to have a vitreous washout operation at some point. This is a similar operation to the original vitrectomy operation.

- **infection**
  In very rare cases, the eye can become infected. We would need to treat this urgently, because in some cases, infection can lead to blindness. Infection affects about one in 1000 patients.

- **raised eye pressure**
  It is not uncommon for the pressure in the eye to increase after a vitrectomy operation. In most cases it does not last long and can be controlled with extra eye drops and/or tablets to reduce the pressure. Most patients will be given some of these medications routinely, straight after the surgery,
to minimise any pressure increase. Your eye pressure will be checked at your subsequent clinic visits. If the pressure is extremely high or lasts for a long time, there may be some damage to the optic nerve. This would necessitate long term treatment and monitoring.

Once you are discharged from the vitreoretinal service it would be prudent to include a full glaucoma test in the annual review conducted by your optometrist or optician, as there is a small risk that you might develop eye pressure problems some time later.

- reduced peripheral field (or side vision) and reduced night vision
  This may occur after laser treatment. In some cases people may have to stop driving because the DVLA standards require patients to have a certain amount of peripheral field.

- reduced central vision
  In a small number of cases, the vision can be worse after the operation. There is a very slight chance of total sight loss.

Useful links

If you are interested to watch a video about the operation, visit: www.uhs.nhs.uk/OurServices/Eyes/Departments/EyeInpatientsAndEyeSurgery/Eyeinpatientsandeyesurgery.aspx

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