Patient information factsheet

Retinal vein occlusion (thrombosis)

What is the retina?

The retina is a thin layer of light sensitive cells, which lines the back of the eye. The eye is like a camera with a lens at the front and a light sensitive film (retina) at the back.

The retina has blood vessels in it, which fan out from the centre to the edge. The retinal arteries bring blood to nourish the retina and the retinal veins carry waste products back out of the eye.

What is a retinal vein occlusion (thrombosis)?

If the flow of blood in the veins stops or slows for any reason, spots of blood and protein may leak out of the vein and into the retina and this can affect vision. The symptoms are variable and range from mild to severe visual loss depending on the size and site of the blocked vein. Leakage of fluid from the blocked vein causes swelling of the surrounding retina thus blurring the vision. Sometimes the flow of blood stops completely and then parts of the retina die so that vision is severely affected.

Loss of vision may happen suddenly or gradually. Sometimes the problem is not noted until the good eye is covered for some reason or until a doctor or optician looks into the eye.

Sometimes it is the main (central) vein that is affected, sometimes only one of its branches.

What causes a retinal vein occlusion?

Several factors can cause an occlusion in the retinal vein:

- Anything that makes the blood too thick or sticky eg. smoking cigarettes
- Pressure on the vein from a hardened retinal artery due to high blood pressure
- High pressure in the eye
High cholesterol or lipids
Diabetes
Inflammation in the eye

What are the chances of developing a vein occlusion in the other eye?

If a central retinal vein occlusion (CRVO) has occurred in one eye then the risk of a CRVO occurring in the other eye is 5% per year.

What can be done to prevent retinal vein occlusion?

- Stop smoking – this is very important.
- High blood pressure should be treated.
- High blood cholesterol should be treated with diet or drugs.
- Diabetes should be well controlled
- If your blood is very thick or sticky, blood-thinning treatment might help.

These treatments may also help to prevent any complications from the vein occlusion.

What are the complications of retinal vein occlusion?

If the blockage of your retinal vein has made your retina short of oxygen, new blood vessels may form inside your eye. Unfortunately it will be too late for this new oxygen supply to help restore your vision but the new blood vessels may cause further problems in the eye:

- **Vitreous haemorrhage.**

  This is most likely to happen in the first two years after a severe branch retinal vein occlusion. New blood vessels are fragile and may bleed into the vitreous jelly of the eye, causing sudden further loss of vision. Usually these new vessels will be noticed at a clinic check up and then laser treatment can be arranged to make the vessels shrink away.

- **Neovascular (Rubeotic) Glaucoma**

  This is only likely to happen after a severe central retinal vein occlusion. New blood vessels grow on the coloured iris at the front of the eye and around the fluid drainage channels. After a while fluid may be unable to get out of the eye so the pressure will rise in the eye and then your eye may become red and painful and more sight may be lost. This is why your eye will be checked in clinic for the first few months so that if it seems to be at risk of developing this condition, laser treatment can be given to make the new blood vessels shrink away.

Are there any special eye tests that are needed?

- Everyone will need blood tests to look for the cause of the vein occlusion.
- All patients will have their eye pressures checked and their eyes examined to look for any risk factors for vein occlusion or complications from it.
Some patients may need a fluorescein angiogram, which is a test to look at the blood flow though the retina.

Some patients may need an OCT which is a test to shows how much retinal swelling is present.

**What treatment is available?**

Unfortunately there is no treatment that will restore vision in the affected eye.

It is very important to prevent another episode of vein blockage in either eye so your blood pressure will be measured and you will be asked to have blood tests to identify any cause of the vein occlusion.

If new blood vessels are growing on the iris or retina then laser treatment is necessary to try and help shrink these vessels.

If there is swelling of the central retina (macula) then laser treatment to this area may reduce the swelling.

Trials of newer treatments such as injections of steroids or other drugs are being tried to see if they improve the longer-term outcomes in vein occlusions.

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