



Central Retinal Vein Occlusion (CRVO)

What is a central retinal vein occlusion?

A central retinal vein occlusion (CRVO) is a blockage of the main retinal vein that drains blood from the eye. The blockage leads to a buildup in pressure in the vein, which causes blood and fluid to leak out onto the retina.

In all cases the blockage will resolve with the formation of bypass channels for blood to escape the eye. Final visual acuity is quite variable.



Central Retinal Vein Occlusion



Normal Fundus

What causes a CRVO?

As the central retinal vein exits the eye it passes through a narrow opening in the lamina cribrosa that it shares with the central retinal artery. Because of this narrow opening the central vein can become compressed and lead to a blockage.

Systemic factors may include:

- Hypertension (high blood pressure)
- Glaucoma
- Diabetes
- Hypercholesterolaemia (high cholesterol)
- Smoking

Symptoms of CRVO

Symptoms for CRVO may include one or more of the following:

- Reduced vision – the loss of vision may range from partial to complete
- Black spots appearing in your vision.
- Painful blind eye

Diagnosis of CRVO

The diagnosis of CRVO will begin with a dilated exam of your eye. Optical Coherence Tomography (OCT) can also be used to detect macula oedema. A fluorescein angiogram may be performed to assess the severity of the interruption of retinal blood flow.

Complications of CRVO

There are three types of complications that can threaten vision in CRVO. They are:

- **Macula oedema** – The leakage and bleeding causes the macula to swell leading to blurred vision. Avastin is given to “dry up” this fluid.
- **Ischaemia** – is a lack of blood supply and oxygen to parts of the retina.
- **Neovascularisation** – in severe cases of ischaemia, neovascularisation can occur where new, abnormal vessels may begin to grow. These abnormal vessels may grow throughout the eye where they can burst and bleed and cause severe visual loss. Laser (PRP) is undertaken to prevent or treat this.

How is a CRVO treated?

Certain complications may occur that can lead to a loss of vision. These complications can include macular oedema (swelling) and the lead on effects from retinal neovascularisation (new vessels growing on the retina). Several treatment methods are available to deal with these situations.

Laser techniques:

- **Laser Photocoagulation** – where retina ischaemia is prevalent, large areas of retina are treated by laser in a process known as Panretinal Photocoagulation (PRP). The aim is to prevent the abnormal vessels from growing and the resulting vision loss. Laser photocoagulation generally doesn't improve or reduce the vision.

Intraocular injections:

- Eylea or Lucentis is available for treatment: These are anti-VEGF (Vascular Endothelial Growth Factor) drugs that are designed to reduce oedema in CRVO allowing stabilisation and some improvements to vision. The anti-VEGF treatment generally only lasts four to six weeks so repeat injections are required. The thought of an injection into the eye may sound daunting but it is relatively painless and quick.