Central Retinal Vein Occlusion (CRVO)

Central retinal vein occlusion causes very poor vision because the circulation within the eye slows down. The effects can range from slightly blurry vision through to a blind painful eye.

**How does CRVO occur?**

The retina is part of the brain and forms a thin nerve tissue lining inside the eye. The retina functions like the film in a camera. The retina has its own blood supply: the arteries bringing fresh blood in and the veins channelling the 'used' blood out. The smaller vein branches join together and exit the eye within the Optic Nerve as the Central Retinal Vein.

If the central retinal vein is kinked/blocked, for example by a hardened artery, the blocked venous drainage causes the circulation to stagnate which is medically called an 'occlusion'.

**What does the blockage cause?**

Unfortunately with a CRVO your sight is usually always affected. This may range from mild to severe blurred vision. Internally, haemorrhaging (where blood leaks out of the occluded vein) occurs but the vision is blurred because the retina gets 'water logged' when fluid is forced out of the vessels due to the high pressure. This leakage is medically called 'oedema' and this damages your sight. In severe or untreated cases the circulation is so static that retinal tissue starts to die off and triggers new blood vessel growth that can fill the eye cavity with blood causing dense vision loss, and also the pressure in the eye may also increase (Rubeotic Glaucoma) which can be painful and blinding.

**What are the risk factors?**

The risk factors that make people susceptible to CRVO are:

- Increasing age
- Hypertension (high blood pressure)
- Cholesterol or triglyceride problems
- Glaucoma
- Diabetes
Less commonly the blood can become thick and sticky from a variety of causes including:
- Too much protein in the blood which causes circulation to slow down
- Hormone supplements, particularly affecting women.

How is CRVO diagnosed?

Diagnoses and management of central retinal vein occlusion involves a thorough eye assessment including checking the pupil’s response to bright light, measurement of intraocular pressure and examination of the retina.

A Fluorescein Angiogram is performed to assess the circulation and the degree of blockage. This procedure is where a dye is injected into a vein in your hand and the eye photographed over a period of five minutes as the dye runs through.

An OCT (Ocular Coherence Tomography) determines the degree of retinal swelling by scanning the eye like an ultrasound. This takes a very short time and is non-invasive.

General Health

It is always essential for the blood pressure to be monitored and diabetes to be excluded so you will be encouraged to check with your local GP regarding your general health. Further blood tests may be necessary depending on each individual circumstance.

What are the Treatment Options for CRVO?

Treatment options vary depending on the severity of the CRVO from laser, an injection into the eye or surgery. The benefits and potential complications of these different treatments need detailed discussion after the thorough initial assessment of the eye. In most cases, some benefit can be achieved with treatment options.

1. **Triamcinolone:** Is an injection into the eye performed in the clinical rooms. The anti-inflammatory properties of the Triamcinolone reduce the swelling and allow the blood vessels to start repairing. The side-effects of this injection are potential infection (perhaps two per thousand developed an infection called endophthalmitis), approximately 40% will have a mild elevation of the intraocular pressure but only approximately 20% would require drops to control the pressure for several months. A very common side effect is increased speed of cataract formation. A cataract is cured by a routine operation.

2. **Avastin:** A drug that is predominantly used for Macular Degeneration. It is very effective in reducing the retinal swelling ‘macular oedema’. There have not been long term studies on this drug but it has been routinely used by our
doctors and across the world for about 2 years with no known long-term side effects. The only side effect has been inflammation in the eye lasting a week to ten days in about 1% of cases. The vision may be blurred or fogged out during this time. The drug is injected into the eye in our consulting rooms.

3. Choroidal Anastamoses bypass: A high powered laser creates a connection between the retina and a deeper (choroidal) circulation within the eye. This can also be achieved surgically in some cases that are not suitable for laser. In severe longstanding cases where the circulation is very poor, there is a high risk of the eye becoming totally blind and painful from a severe type of glaucoma called Rubeotic Glaucoma. Laser or Avastin treatment is essential to prevent this disaster.

4. Radial Optic Neurotomy (RON): An operation done in an operating theatre. This is where an incision is made around the optic nerve rim to decompress the veins and allow blood flow and drainage. As with any operation there are risks involved. Dr Heriot will discuss these at length with you if this surgery is indicated.

Follow Up

It is crucial with CRVO that the eye is checked at regular intervals to detect and control any further deterioration. These visits are critically important to prevent the eye becoming totally blind and painful and to preserve as much sight as possible.

Consultation

Should you require a consultation for CRVO, please call 1800 986 695. At Eye Surgery Associates we are able to offer you appointments at any one of our three sites: East Melbourne, Malvern and Doncaster.