

RETINAL DETACHMENT

Dr Andrew Lukaris MB BCH FRCOphth
Ophthalmologist and Vitreoretinal Surgeon
Prince George Regional Hospital
2000 15th Ave
Prince George, BC V2M 1S2

Retinal detachment is a condition where a **full thickness break (hole or tear)** forms in the retina which allows fluid from the vitreous gel to pass under the retina and lift it away from its underlying blood supply. Without direct contact with its blood supply, the retina stops working properly and begins to degenerate. This results in permanent visual loss if left untreated. This is an **emergency if the central retina (macula) is still attached** but if the retinal detachment has already affected the macula, the worst has already happened and it is possible to plan surgery within the next few days. You may be asked to adopt a particular head position prior to the surgery in order to limit the extent of the detachment. You should do this religiously!

A retinal break is usually a pre-ordained event due to an abnormal interaction between the surface of the retina and the vitreous gel which fills the rear chamber of the eye. Usually the **tear** occurs when the **gel separates** from the retinal surface (but pulls on an area where it is more strongly attached) in a process called **posterior vitreous detachment**. **Holes** may occur because of a gradual thinning of the retina occasionally without traction from the gel. Some people are more likely to develop a retinal detachment such as those with a family history, certain “collagen” diseases (e.g., Stickler's Syndrome) or those who are near-sighted. Various techniques are used to reattach the retina:

Vitreotomy – 3 holes are made in the white of the eye and instruments are passed internally to remove the vitreous gel, flatten the retina, apply **retinopexy** (spot-welding) to the break(s) with laser or freezing (cryo) therapy and insert a **tamponade** agent (gas or oil) into the eye to keep the retina flat while a strong bond forms between the retina and the underlying tissue.

Cryo-Buckle – An **external technique** where a silicone strap or sponge is sutured onto the white of the eye underneath the conjunctiva (thin skin of the eye). This deforms the eye making an indent on the inside of the eye, flattening the retina at the site of the retinal break. Cryo is used to spot weld the retina into place and occasionally a gas bubble is injected internally to help flatten the retina.

Pneumatic retinopexy – Is a faster minimalist technique used for very small detachments occurring in the top half of the retina. A small expansile gas bubble is injected into the eye to flatten the retina and laser or cryo is applied to spot-weld the retinal break.

The first two operations usually take about an hour (but may take 2-3 hours if the detachment is

complex) and afterwards the eye is padded overnight. A pneumatic retinopexy takes around 20 minutes. You will **usually be admitted** and kept in hospital **overnight**. The next day, the pad is removed and you will be seen to check the eye before being discharged. **You should not fly in an aeroplane while gas is in the eye**. You will be asked to adopt a **particular head position (posturing)** for a week or more after the surgery in order to increase the success rate of surgery and help prevent re-detachment.

If gas or oil were used, the operation **initially makes the vision worse**. A gas bubble **gradually reabsorbs**, and the vision should improve when it is gone. Oil needs a second operation to remove it as the body is unable to reabsorb it. Sometimes a decision is made to leave oil in permanently if it is likely that the retina would otherwise redetach.

The outcome of surgery is dependent on several factors, including whether or not the macula was affected and for how long, your age, and whether complications develop. Some important complications of detachment surgery include:

- **Permanant blindness** in the operated eye (very rare).
- Inflammation from the immune system attacking the eyes (**sympathetic ophthalmitis**) (very rare) – this condition usually requires steroids to treat or the patient goes blind. Steroids have many side-effects, but fortunately the condition is exceedingly rare.
- A major bleed within the wall of the eye (**suprachoroidal haemorrhage**) (rare).
- Infection (rare).
- **PVR** is a scarring reaction which can lead to retinal re-detachment.(uncommon)
- **Retinal redetachment** (failure of surgery) happens in around 10-15% of cases (or 30% of cases of pneumatic retinopexy) and requires re-operation (common).
- **Pressure problems** – usually when gas or oil is used and mostly treatable with eye drops or tablets and seldom causing any permanent damage (common).
- **Discomfort** – usually from stitches or just from inflammation temporarily post surgery (common).
- **Double vision** – usually if a buckle was used as this passes under the eye muscles and may hinder their free movement (common).
- **Cataract** (very common).