

THYROID EYE DISEASE – ORBITAL DECOMPRESSION SURGERY

What is thyroid eye disease (TED)?

TED is an autoimmune condition where the body's own immune system attacks the tissues of the thyroid gland and the eye socket. It is therefore an *autoimmune condition*. The immune system produces small inflammatory particles called antibodies, which in normal circumstances are used to fight infections. However in thyroid eye disease abnormal antibodies cause inflammation of the tissues in the eye socket. The same antibodies frequently also cause inflammation in the thyroid gland which results in an over (hyper) and under (hypo) active thyroid gland. The precise immune process and reason that the antibodies mainly settle in the eye socket and thyroid gland is not fully understood.

What are the symptoms?

Inflamed tissues around and behind the eye become swollen and congested which can cause swollen, red eyelids, proptosis (bulging/protruding eyes), the white part of the eye (the conjunctiva) to become red and the eyelids not to close properly, which can result in a dry or watery sore eye. Swelling of the eye muscles reduces their ability to contract and relax thereby affecting eye movements, which can result in double vision and pain on eye movements. The swelling in the eye socket can also cause severe eye ache and headache. If the eye muscles and fatty tissue in the eye socket get very swollen, they can compress the optic nerve at the back of the eye socket causing vision loss.

The eye changes generally affect both sides, but sometimes one side can be affected much more than the other.

Relationship with thyroid function

Although most people with TED have a history of an over- or an underactive thyroid gland, this is not always the case and some people with characteristic eye disease will develop the thyroid problems later and a few will never develop abnormal thyroid function blood tests, while other people may have had thyroid function problems for many years before eye problems develop.

What can I do to help prevent or improve the TED?

At present there are four factors known to affect the outcome for TED: Two of them cannot be changed: it more commonly affects women than men and most commonly starts when aged 20s – 30s (although it does also occur in men and can occur in any age, even in children). The other two factors, which can be modified, are the thyroid gland activity and smoking. The thyroid gland activity must be monitored regularly and managed with medication or other treatments. We will ensure that you are seeing an endocrinologist or GP about this. Smoking seriously worsens the severity and therefore outcomes of TED and increases the risk of visual loss from the disease. If you smoke, you should stop (or at least drastically reduce) and please see your GP if you need help with this.

What is the treatment for TED?

Mild TED: This may require no treatment, or just some lubricant eye drops to reduce discomfort of the eyes. Most cases of TED are mild and self-limiting over a few years.

Moderate / Severe TED: Severe inflammation may need to be damped down, as it can otherwise lead to problems both during the inflamed phase and with scarring of tissues as the inflammation settles. The inflammation can be reduced by the use of

powerful immune system suppressing drugs, such as steroids, or by low doses of radiotherapy (X-ray therapy). Radiotherapy is similar to that used for treatment of tumours but, with TED, is used at a much lower dosage and so side effects are rare.

Vision Threatening TED: If the eyesight is impaired due to pressure on the optic nerve (so called “optic neuropathy”), it may be necessary to perform urgent orbital decompression (see below) to prevent permanent loss of vision.

Inactive TED: This is when the inflammation has settled down, but tight, enlarged eye muscles and orbital tissue remains. Although the inflammation is inactive the double vision, dryness and pain or discomfort can still be debilitating and the appearance of the proptosed eyes make people reluctant to socialise or go to work. Orbital decompression may also be used at this stage to reduce the proptosis to improve the facial cosmetic appearance or reduce the “pressure” behind the eyes. The double vision may be helped with squint surgery (surgery on the eye muscles) and eyelid surgery may improve the appearance or eyelid closure.

What is an orbital decompression?

Orbital decompression involves removal of some (one to three) of the four bony walls of the orbit (the eye socket) to create more space for the inflamed orbital tissues and allowing considerable backward movement of the eyes in the eye-sockets. Some of the swollen orbital fat is also sometimes removed. This can be done to take the pressure off the optic nerve and allow recovery of sight, or to improve the cosmetic appearance. In both situations it is usually a very successful operation. There are various different surgical techniques for decompression surgery and the precise procedure will depend on the patient and the surgeon. Sometimes an incision is made at the outer angle of the eyelids and the scar rapidly fades into the natural creases. Sometimes the surgery is done endoscopically (up the nose) and sometimes both are required. The surgery is a major procedure and the small size of the incision must not

give the idea that it is a minor operation. However, increasingly the endoscopic route is being favoured because of the excellent results, low complication rate and quick recovery time without any scarring.

What happens on the day of surgery?

The surgery is performed under general anaesthetic and takes about 2 to 3 hours per eye. It involves admission to hospital for at least one night. You will be kept in hospital until you are safe to go home and comfortable enough to do so.

What should I do in preparation for surgery?

Blood thinning medications such as aspirin, clopidogrel (Plavix, Isocover) and warfarin can make bleeding more likely during and after surgery. If you are taking these drugs I will discuss with you if and when to stop these medications prior to surgery and it is likely to also be important to discuss this with your GP and/or cardiologist. You should also consider stopping anti-inflammatory drugs like ibuprofen (Neurofen), fish oil, ginger, ginseng and garlic containing supplements two weeks before surgery.

It must be stressed again that smoking dramatically worsens TED and you should give up or significantly cut down if possible. If this is improbable, it is strongly recommended that you stop smoking for at least 3 days prior and 1 week after surgery. This is important as smoking impairs wound healing and increases the risk of infection. Avoid alcohol for a day before and a day after surgery. You are required to have nothing to eat or drink for at least six hours before surgery. On the day of surgery please dress casually and wear a top that buttons at the front. Please wash your face on the morning of surgery and men should shave. Do not wear any makeup, jewellery or contact lenses.

What happens after the operation?

After surgery, the operated eye(s) may be padded for about 6-12 hours (for the external route) and there may be a small drain in place on each side, to help prevent significant swelling and bruising (also for the external route only). The dressing is normally removed the day after surgery and you can usually return home on the first or second postoperative day.

There is some bruising, swelling and relatively mild discomfort after surgery and it is necessary to take time off work, usually around 3-4 weeks. In some cases this time off can be quite long if double vision is troublesome.

You will be asked to take some medications after surgery such as eye drops, antibiotics, steroids, or pain-killers.

What are the main complications following orbital decompression surgery?

There are risks and side effects with a major procedure like orbital decompression: Most side effects are either temporary or can be treated by further medications or surgery. Some risks, although extremely rare, may be irreversible and lead to a permanent disability.

Serious, but rare risks:

- ❖ Vision loss - Although many orbital decompressions are done for patients with poor vision due to thyroid optic neuropathy, there is a risk of loss of some, or even all, vision with any surgery on the eye socket. The risk of vision loss is, however, extremely low (probably less than 1-in-1000 for one eye and, therefore, less than 1-in-a-million for complete blindness in both eyes).
- ❖ Leakage of CSF (brain fluid) - This usually settles without intervention, but may need further surgery to fix the leak and can very occasionally cause meningitis

(infection of the layers of the brain). The risk of leakage of CSF is about 1:100 and the risk of meningitis less than 1:1000

- ❖ Bleeding - There is also a risk of post-operative bleeding in the eye socket which could also affect the vision and may require surgical intervention.

Other risks:

- Double vision (“diplopia”) – this is common immediately after surgery (due to increased swelling of the eye muscles) and typically settles over a few days or weeks. If persistent, we can often help by fitting a temporary (“stick-on”) prism to your glasses, or by occlusion of one spectacle lens (to blur out the image). If double vision persists long-term, squint surgery or special glasses may be necessary when the eye movements have settled (frequently by 6-12 months after decompression). It is most important to realise that diplopia has a major effect on life-style for example, the ability to drive and may prevent early return to work. **It is essential to account for this possibility when considering this operation.** In some people who already have double vision, this can improve after the surgery.
- Numbness - Following an orbital decompression some patients will develop postoperative numbness of the cheeks and upper front teeth, because the nerve supplying the “feeling” is exposed during surgery. In most cases it will recover over some months, but in about 5% a partial or complete numbness will persist. This numbness does not affect facial appearance or movement.
- Bruising – Bruising is common with the external route and will settle down by itself within 3 - 4 weeks at most. Bruising is less common and less pronounced with the endoscopic route.
- Scarring – The skin incision will be placed within natural skin creases around the eye and thus is usually minimally visible after a few months. There is no scarring from the endoscopic route.

- Infections – Infections can range from mild to severe. It is important to avoid nose blowing and take prescribed antibiotics as directed to reduce the risk. If a serious infection is suspected you will be re-admitted to hospital for further treatment.
- Sinusitis - Patients will, rarely, have problems with recurrent sinusitis (or sinus ache) after surgery although this typically settles over 6-12 months. The disruption of the facial sinuses during orbital decompression means that there is a risk of major sinus pain during air travel and such travel should probably be avoided, if possible, for about 2 weeks after orbital decompression.
- Asymmetry and under/over-correction - There may be asymmetrical or over-correction of proptosis, with one eye set further back than the other, which may require further surgery. Despite major reduction in proptosis with orbital decompression upper eyelid retraction tends to persist after surgery. Sometimes surgery is done to correct this at the time of decompression, or the surgery may be done at a later occasion, which is typically performed as an outpatient under local anaesthesia. Persistent retraction may require the use of lubricant eye drops or later eyelid surgery.

What is the follow-up treatment?

All being well you will be discharged home the day after surgery and given a clinic appointment for one week after surgery.

Contact Details

Worthing Laser & Skin Clinic
01903 820 010 (9am – 5pm)

Saul Rajak Ophthalmology
Info@SaulRajak.com
07847 462 030
01403 713 153 (private
secretary and emergencies
8am to 6pm)
www.saulrajak.com

The Sussex Eye Hospital
Eye Casualty/Pickford Ward
01273 664 881
(Out of hours emergencies)

