Pterygium

A pterygium is an overgrowth of abnormal conjunctival mucous membrane, which grows onto the corneal surface. Patients who have pterygia always have a history of extensive out-of-doors exposure in sunny climates. Although exposure to ultra-violet, visible, and infra-red solar radiation is a major factor in the initiation of pterygium, there must be other unknown factors, and the exact cause has yet to be established.

The majority of pterygia extend only a little way onto the cornea, and are of cosmetic significance only. Sometimes the eye feels irritable, and this may be due to the irregular surface, poor tear film, or to mild inflammation in the tissue. If a pterygium extends further onto the cornea, it starts to affect the vision. Firstly it causes astigmatism by distorting the corneal shape. If a pterygium approaches the central optical zone of the cornea, it will often cause additional distortion of vision due to pooling of the tear film at the edge of the pterygium. Very occasionally a pterygium may be so severe as to grow completely over the visual axis and in this situation there will be significant loss of vision in the eye.

Treatment

The majority of pterygia require no treatment. If the eye is irritable, over-the-counter artificial tear substitutes are often all that is required for symptomatic relief. If the redness of the eye is a problem, the use of a mild vaso-constrictor in the artificial tears (such as Isopto-frin) will give some temporary benefit. Pterygia can theoretically be removed at any stage of their development. However surgical excision may be unsuccessful as it may provoke the pterygium to recur. Unfortunately recurrent pterygia are often more extensive, more inflamed, and more symptomatic, than the original one had been. For this reason surgeons are reluctant to recommend surgery if the condition is not causing significant problems in the first place.

Surgical excision

There are a number of different surgical approaches to the treatment of pterygia. Recent studies have suggested that combining the excision with replacement of the conjunctival defect with an auto-graft has the best success rate. Even with this technique the recurrence rate is around 15%.

The surgical procedure can be readily carried out with a local anaesthetic and takes about thirty minutes. If the patient prefers, a general anaesthetic can be performed. Firstly the pterygium is peeled off the cornea, and the adjacent conjunctiva is also excised. A free graft of conjunctiva is taken from the same eye from an area under the upper eye lid. The graft is moved to the area where the pterygium has been excised. It is fixed in place with bio-degradable sutures which disintegrate after a few weeks.

After the surgery, the eye is red, sore, and watery for a week or two, and the redness may take two or three months to clear completely. Typically a couple of weeks off work would be required after the surgery. Post-operatively the eye is treated with steroid eye drops or ointment to reduce the inflammation, and to help prevent the recurrence of the pterygium. In some people, steroid eye drops cause a rise in the intra-ocular pressure (glaucoma), and for this reason, the pressure will need to be monitored while the steroid drops are being used. Generally the drops are tapered off over two to three months after the surgery.

Other techniques

If a recurrent pterygium is being treated, there may not be sufficient good conjunctiva remaining on the eye to be able to make an auto-graft, and in this case, the conjunctival defect may be filled with an amniotic membrane graft.

When the pterygium has invaded to the edge of the central optical area of the cornea, there will almost certainly be irregularity of the corneal surface after the pterygium has been removed. Sometimes this can be helped by excimer laser treatment to smooth out the corneal surface, and correct any remaining optical defect. The laser treatment would not generally be considered until the eye had six months to a year to stabilise after the pterygium excision.

In the situation where the pterygium has grown right over the visual axis, it may be preferable to carry out a lamellar graft at the time of the pterygium excision, as this can help reduce the risk of recurrence, as well as treat the otherwise inevitable corneal surface irregularity.

Outcome

The majority of patients having surgical excision of a pterygium can expect a successful outcome. However in some cases there will be recurrence and the risk of this may depend on whether the person continues to be exposed to high levels of solar radiation, as well as other factors such as the initial severity of the condition.