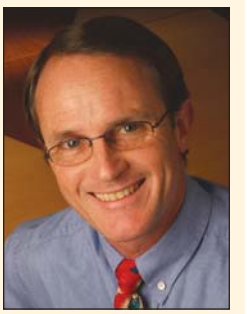
# Pterygia and pinguecula

*David Pendergrast*

*Correspondence to: dgcpen@ihug.co.nz*

***David Pendergrast** trained as an Ophthalmologist in Auckland and in the United Kingdom. He is Clinical Senior Lecturer in the Department of Ophthalmology, University of Auckland where he is the Clinical Director of the New Zealand National Eye Bank. He works at Greenlane Clinical Centre and in private practice at Auckland Eye with a subspecialty interest in cornea and ocular surface disease.*



## Pterygia

A pterygium is a benign degenerative change of the conjunctiva. It is related to sun exposure over a lifetime and is more common in people who have outdoor occupations (farmers, builders, sailors etc.) or those living in hot sunny areas, especially those who live close to the equator.[1,2] It is more common in men that in women and rarely develops in children.

A pterygium starts as an area of redness and thickening in the interpalpebral bulbar conjunctiva, usually on the medial aspect of the eye or occasionally on the temporal conjunctiva or both. As it enlarges the pterygium may extend across into the cornea. Histologically a pterygium consists of hyalinization of subepithelial connective tissue, conjunctival thickening composed of abnormal elastotic fibres and destruction of Bowman's membrane of the cornea.

Pterygia cause a number of problems. They may be obviously visible and cause cosmetic embarrassment. They often become sore, red and gritty especially with wind, smoke or dust. Eventually the pterygium may interfere with the vision either by distorting the cornea (usually causing astigmatism by flattening the cornea in the horizontal meridian) or by extending across the pupil itself. A pterygium may interfere with contact lens wear. It may also be a consideration in refractive surgery as it may interfere with the placement of the suction ring used during LASIK.

### *Differential diagnosis*

Occasionally other changes may develop on the surface of the eye in the same area as a pterygium develops. Papillae in vernal conjunctivitis may develop on the limbus in pigmented races and can mimic a pterygium. Dysplasia, carcinoma in situ or carcinoma can look similar to a pterygium or, since they are also related to sun exposure, can develop at the limbus at the same time as a pterygium. For this reason it is important to have a suspected pterygium examined by an ophthalmologist to exclude other lesions even if surgery is not planned.

### *Medical management*

The comfort of the pterygium may be improved by using eye drops such as artificial tear drops or decongestant drops. These often help with the redness of the eye as well. Note that frequent use of any preserved eye drops may lead to irritation due to preservative toxicity on the ocular surface and if drops are needed more than three or four times a day then a non preserved artificial tear drop should be considered. Protection of the eyes from sunlight with sunglasses or corrective spectacles and a broad brimmed hat when outdoors may help to prevent growth of the pterygium. To be effective glasses need to be close fitting.

### *Surgical excision*

Some pterygia may require surgical removal. If they are a cosmetic embarrassment or if symptoms are not adequately relieved by eye drops then excision may be considered. If the vision is reduced by astigmatism or threatened by encroachment more than 2–3mm onto the cornea then surgery is advisable. Occasionally diplopia from restriction of ocular movement by a pterygium or associated symblepharon may be an indication for surgery. Excision may also be required to allow contact lens wear or refractive surgery to proceed.

The surgery is usually performed under local anaesthetic (either topical infiltration or sub-tenons anaesthesia) as a day case. The head of the pterygium adherent to the cornea is dissected off avoiding any significant removal of corneal tissue if possible, The pterygium will usually peel off the cornea easily and Bowman's membrane may then need to be smoothed or scraped to provide a regular corneal surface.

The base of the pterygium is composed of fibrovascular tissue and is dissected off the sclera, often with cautery to bleeding vessels being necessary. A wide area of Tenon's capsule may need to be removed especially during excision of a recurrent pterygium. The surgery takes approximately 30 to 60 minutes and following surgery an eye pad will be placed on the eye.

### *Post operative symptoms*

Following surgery the eye will feel irritable or even very painful. This usually lasts three to four days but may occasionally last for a week. During this period the patient may feel that there is something in the eye or under the lid and the eye may be sensitive to light and watering. The patient will usually be given a prescription for eye ointment or eye drops and analgesic tablets. They should avoid getting water or dust or dirt in the eye over this period. The eye may be very red for up to four weeks and slightly red for three to four months.

In general, post operative complications are rare. Infection may occur as the ocular surface defences are compromised by the large epithelial defects created. Thinning and perforation of the cornea may occur and this is more common if antimetabolites have been used at the time of surgery. Scleral necrosis used to be seen as a late complication of pterygium surgery with beta radiation but this adjunctive radiotherapy is rarely used in New Zealand now. Damage to, or disinsertion of, a rectus muscle is possible during surgery and can result in post operative diplopia but this is very unlikely given careful technique. Occasionally a conjunctival granuloma will form around a suture remnant and this may respond to topical corticosteroid treatment or may require surgical excision.

### *Pterygium recurrence*

The main problem with the removal of a pterygium is that regrowth may occur. Recurrence rates in large studies vary widely from 10% to more than 60% and this may reflect surgical technique, climate and degree of sun exposure as well as racial variation. Most recurrences (>90%) occur within one year of surgery. This fairly high rate of recurrence means that caution should be exercised before deciding to proceed to surgical excision. In general, a recurrent pterygium will be more symptomatic than a primary pterygium, with increased size and rate of growth as well as greater incidence of symblepharon (adhesion between the bulbar and the tarsal conjunctiva). Polynesian and south east Asian patients anecdotally have a much higher recurrence rate.

### *Free conjunctival autograft*

At present the most common adjunct to reduce recurrence rate is free conjunctival autograft. Pterygium excision is followed by harvesting of a piece of non sun damaged bulbar conjunctiva (usually from the superior aspect of the operative eye) which is then sutured over the scleral pterygium excision site with an absorbable suture. This has been demonstrated to reduce the rate of recurrence.[3] Recently fibrin glue instead of suturing has begun to be used by some surgeons to attach the conjunctival graft to the scleral bed.

Other modalities to reduce recurrence, including amniotic membrane grafting or application of the antimetabolite Mitomycin-C may be used. Patients should try to reduce exposure to ultra-violet light by wearing sunglasses or a hat when outdoors following surgery. Some surgeons prefer not to operate over the summer months for this reason.

## Pinguecula

A pingueculum is a very common benign degeneration of the interpalpebral bulbar conjunctiva related to sun exposure and drying. It appears as an area of yellowish thickening in a triangle based on the 3.00 o'clock or 6.00 o'clock limbus. As the pingueculum develops it may become thicker and increase in extent but in general it does not encroach on to the cornea.

*Figure 1. Clinical photograph of pterygium encroaching on the cornea. There's a small conjunctival haemorrhage within the body of the pterygium*

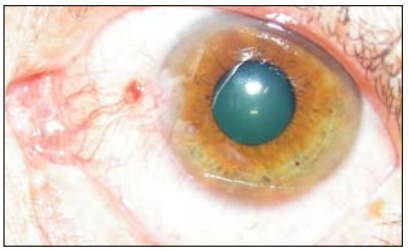
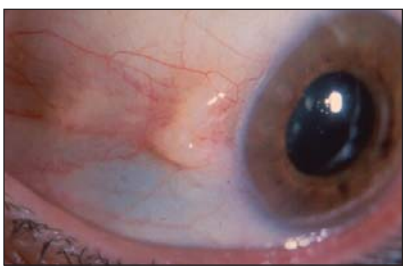


*Figure 2. Intraoperative clinical photograph showing the conjunctival graft sutured over the nasal pterygium excision site.*

*Figure 3. Clinical photograph of a nasal pingueculum showing prominent blood vessels and an area of creamy conjunctival thickening.*



A pingueculum may be asymptomatic or it may cause symptoms of irritation. Often an elevated pingueculum will dry out and become acutely red and even ulcerated. Symptoms may be temporarily relieved by artificial tear drops or decongestants. Surgical excision may be carried out for symptoms unrelieved by drops or for cosmesis.

## Competing Interests

None declared.

## References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