Simultaneous pterygium and intraocular surgery

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Abstract

Fifteen patients were treated with simultaneous pterygium and intraocular surgery. Eleven of them had pterygium excision with cataract extraction, while four had pterygium excision with trabeculectomy. There was no evidence of increased risk of pterygium recurrence or of complications following cataract operation or trabeculectomy as a result of the combined procedure. In an environment where pterygium is endemic and medical facilities inadequate a combined procedure is recommended to save time and cost.

Pterygium is a major ophthalmic problem in Jos, Northern Nigeria. It commonly occurs in eyes with surgically treatable intraocular conditions such as cataract and glaucoma. The definitive treatment of pterygium is its removal which can be done prior to or combined with most intraocular operations. A simultaneous operation for excision of pterygium and treatment of cataract or glaucoma, when possible, is simple. The techniques are presented and discussed here.

Simultaneous pterygium excision and cataract extraction

The commonest site of a pterygium is nasal, but occasionally both nasal and temporal pterygia occur in the same eye with cataract. The surgical procedure up to excision of the pterygium is the same no matter whether the pterygium is nasal, temporal, or both, or whether the cataract extraction is intra- or extracapsular.

A conjunctival incision is made 5 mm from the limbus and is continued through the pterygium nasally or temporally or both depending on the site of the pterygium. The conjunctival flap is reflected as usual towards the cornea throughout the extent of the incision to expose the limbus. The proximal conjunctiva in the area of the pterygium is undermined and all subconjunctival pterygium tissue carefully excised. All blood vessels are cauterised. Radial incisions are made above and below the neck of the pterygium isolating it from the rest of the conjunctival flap. The head of the pterygium is then removed by a superficial keratectomy.

A corneoscleral incision is then developed to the size appropriate for either intra- or extracapsular cataract extraction. After removal of the cataractous lens, the corneoscleral wound is closed with interrupted 8-0 virgin silk sutures. If the corneoscleral incision extends into the pterygium area, the sutures are inserted closer together there.

After the anterior chamber is reformed, the conjunctival flap is replaced and closed with interrupted 8-0 virgin silk leaving a 3-4 mm bare sclera in the region of the pterygium. Atropine 1% and chloramphenicol 0.5% drops are instilled

into the conjunctival sac, and a pad and bandage are applied. Postoperative medications are as for ordinary cataract extraction.

Simultaneous pterygium excision and trabeculectomy

Most of our glaucoma patients also have pterygia. Whenever trabeculectomy is indicated, I excise the pterygium at the same time if present. A limbus-based conjunctival flap is again adopted. The conjunctival incision is continued through the pterygium.

After the sclera is cleared, the site of the trabeculectomy is centred and demarcated with cautery at 11 o'clock for a nasal pterygium, at 1 o'clock for a temporal pterygium, and at 12 o'clock where nasal and temporal pterygia occur together. Blood vessels in the pterygium area are cauterised.

The neck of the pterygium is isolated from the rest of the conjunctival flap with radial incisions at its upper and lower borders. Removal of the pterygium is then completed with a superficial keratectomy.

Superficial and deep scleral trabeculectomy flaps are now developed and the trabeculectomy operation is carried out. After Tenon's capsule has been restored, the conjunctiva over the trabeculectomy is closed with continuous 5-0 catgut. The conjunctival margins bordering the area of the pterygium are sutured to the sclera with close, interrupted 8-0 virgin silk sutures. Cyclopentolate 1% and chloramphenicol 0.5% drops are instilled into the conjunctival cul-de-sac and pad and bandage applied. Postoperative management is as for ordinary trabeculectomy.

Discussion

Jos University Teaching Hospital (JUTH) has a catchment area spanning four states of Nigeria where pterygium has a high frequency. Pterygium takes a significant proportion of our clinic and theatre times. For instance, in the 12 months July 1987 to June 1988 pterygium accounted for 10.6% of all operations in the eye theatre. In the following 12 months, July 1988 to June 1989, it accounted for 9.4% (Table). These figures are comparable with the overall incidence of the disease as noted by Cameron¹ and Youngson² but higher than that noted by Nworah.³

Incidence of pterygium in Jos University Teaching Hospital eye theatre

	Total no. of operations	No. of pterygia excised	Pterygium as % of total no. of operations
July 1987-June 1988	625	66	10.6
July 1988-June 1989	692	65	9.4

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Combined pterygium excision and cataract extraction or trabeculectomy as described above has some obvious advantages for both the hospital and the patient. It shortens the waiting list and theatre time. It cuts down costs for the patient through a unified operation charge and fewer hospital visits.

The indications for simultaneous operation include all those for cataract or glaucoma surgery plus those for pterygium excision. In this centre we are in complete agreement with Boruchoff and Foulks⁴ on the major indications for removal of a pterygium. These include a significantly inflamed eye resistant to topical medications; relentless progression of the pterygium towards the visual axis with associated corneal astigmatism, both of which impair vision; and the physical appearance of an eye that is cosmetically unacceptable to the patient. Simultaneous operations should be done on quiet eyes selected for elective surgery rather than on inflamed eyes and eyes suffering from injury or acute glaucoma.

The occurrence of pterygium with cataract creates some additional optical problems. Tight closure of the cataract wound and pterygium both create a with-the-rule astigmatism wound closure by steepening the vertical meridian and pterygium by flattening the 180° axis.⁵ Whereas the astigmatism induced by tight wound closure can be reduced by removing the offending stitches postoperatively, the pterygium induced astigmatism can be eliminated only by careful excision of the pterygium. If the pterygium is not removed during the cataract operation, it can create such a degree of postcataract astigmatism that the visual result may be very poor.⁵

The following points in the surgical techniques should be noted:

In both procedures, the pterygium excision is completed before the eye is opened. Keratectomy is difficult in a soft eye.

During the cataract wound closure corneoscleral sutures are inserted closer together within the bare sclera area to compensate for the loss of conjunctival protection.

In the combined pterygium excision and trabeculectomy, decentring of the trabeculectomy site in nasal or temporal pterygium plus the additional virgin silk sutures round the bare sclera both prevent excessive drainage.

Complications

There have been no specific complications attributable to the simultaneous procedures other than those postoperative problems associated with cataract extraction, trabeculectomy, or pterygium excision. The keratectomy sites have healed within our normal five-day postoperative inpatient period. No recurrence of pterygium

has been recorded in the 15 patients (16 eyes) operated on and followed up so far. There has been no aqueous leakage from the trabeculectomy or cataract wounds despite the deficient conjunctival protection in the pterygium sites.

Four of the patients who had combined operations had trabeculectomies for open-angle glaucoma, while 11 had cataract extractions. Their pterygia were among 86 excised by the author during the 24 months July 1987 to June 1989. One of the patients had bilateral nasotemporal pterygia with mature cataracts. He had simultaneous pterygium excision and cataract extraction in both eyes.

One puzzling complication of pterygium operation is the high rate of recurrence of pterygium. This is borne out by the extreme diversity of surgical techniques and medical adjuvants which have been used for its treatment. At this centre we use the 'bare sclera' technique, cautery, and one or other post-operative medication. Of the 86 eyes that had pterygium excision, only 60 returned for the accepted three-month minimum follow-up.⁶ Overall there have been 23 recurrences, giving a recurrence rate of 38%. Youngson,² who used a similar technique in Jerusalem, reported a recurrence rate of 37%. Different recurrence rates have been reported in the literature. This may be due to lack of uniformity in the duration of follow-up, as the interval between treatment and recurrence varies considerably. For example, within the first three months, only nine recurrences (15%) were detected. The number rose to 15 (25%) within six months and to 20 (33.3%) in 12 months. The true recurrence rate is therefore more likely to be between 30 and 40%.

Conclusion

In our environment pterygium occurs in most patients requiring intraocular surgery. I advocate that whenever there is no contraindication the pterygium should be removed just before the eye is opened for the intraocular operation. The simultaneous procedure is beneficial to both the hospital and the patient and makes for a better visual prognosis in patients undergoing cataract extraction.

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- 3 Nworah PB. Prevalence of pterygium in Enugu, Nigeria. *Nigerian J Ophthalmol* 1986; 2: 94-8.
- 4 Boruchoff SA, Foulks GN. *Corneal surgery*. In: Spaeth GL, ed. *Ophthalmic surgery, principles and practice*. Philadelphia: Saunders, 1982: 202.
- 5 Holladay JT, Lewis JW, Allison ME, et al. Pterygium as cause of post-cataract with-the-rule astigmatism. *J Am Intraocular Implant Soc* 1985; 2: 176-9.
- 6 Van den Brenk HAS. Results of prophylactic postoperative irradiation in 1300 cases of pterygium. *AJR* 1968; 103: 723-33.