bulbar conjunctiva. The incisions should outline an area that is about the same in size as the nasal conjunctival defect. Carefully dissect the conjunctiva off the underlying Tenon's capsule (Figure 2). Once you are in the correct plane you should incise the conjunctival graft along its posterior edge. Lift the posterior edge and carefully dissect off any adherent Tenon's capsule. Your assistant may hold one corner of the graft for you. The graft may be placed epithelium up on a paper template (suture cover) before it is cut off from the limbus. This improves the handling and orientation of the thin conjunctival tissue.[2]

Placing and suturing the graft

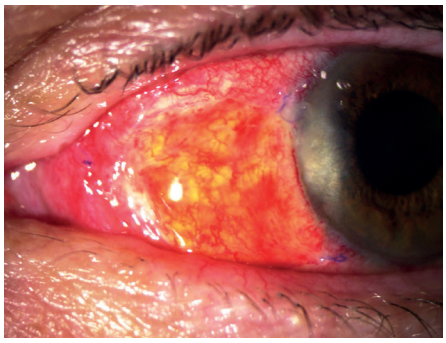
Orientate the graft with the limbal donor edge closest to the nasal limbus.

Fibrin glue can speed up pterygium surgery and may reduce postoperative pain.[2] However, the cost of fibrin glue is prohibitive, even in some high-resource settings. A good alternative is 9-0 or 10-0 nylon: it is widely available, cheap, and causes no tissue reaction.[5]

Anchor the two limbal corners to the sclera to avoid posterior migration of the graft (Figure 3). Suture the remaining corners of the graft to the nasal conjunctiva. If you are using nylon, use a mattress suture to bury the knots. Place additional sutures as required to close any gaps between the graft and the nasal conjunctiva.

Apply chloramphenicol ointment to the conjunctiva and firmly pad the eye.

Figure 4. Graft one week after surgery



Anthony Bennett Hall

Postoperative care

The patient will need good pain relief after surgery. We prescribe a combination of paracetamol and codeine for a day or two.

Ask the patient to instil steroid and antibiotic drops 4 times a day for a week. The topical steroid should continue for at least a month.

Examine the patient the next day to make sure that the graft is in place.

The next visit is at 1 week (Figure 4). Review the patient at 1 month and 3 months to make sure there are no complications. Signs and symptoms of recurrence usually occur 4–6 weeks after surgery.[5]

Encourage the patient to return in a year so that you can check for any recurrence of the pterygium.

References

1 Kaufman SC, Jacobs DS, Lee WB, Deng SX, Rosenblatt MI, Shtein RM. Options and adjuvants in surgery for pterygium: a report by the American Academy of Ophthalmology. Ophthalmol 2013;120(1):201-8. Epub 2012/10/16.
2 Koranyi G, Seregard S, Kopp ED. Cut and paste: a no suture, small incision approach to pterygium surgery. Br J Ophthalmol. 2004;88(7):911-4. Epub 2004/06/19.
3 Hirst LW. The treatment of pterygium. Surv Ophthalmol. 2003;48(2):145-80. Epub 2003/04/11.
4 Gichuhi S, Sagoo MS, Weiss HA, Burton MJ. Epidemiology of ocular surface squamous neoplasia in Africa. Trop Med Int Health. 2013;18(12):1424-43. Epub 2013/11/19.
5 Sheppard JD, Mansur A, Comstock TL, Hovanesian JA. An update on the surgical management of pterygium and the role of loteprednol etabonate ointment. Clin Ophthalmol. 2014;8:1105-18. Epub 2014/06/27.

CLINICAL SKILLS FOR OPHTHALMOLOGY

How to irrigate the eye

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Remember to wash your hands before and after performing all procedures.

Indications

- To remove single or multiple foreign bodies from the eye
- To wash the eye thoroughly following any chemical injury to the eye

Note: Irrigation of the conjunctival sac is an emergency treatment if there has been chemical injury to the eye.

Alkali (e.g. lime) and acid (e.g. car battery) solutions in the eye may cause serious damage to the cornea and conjunctiva, resulting in long-term loss of vision.

The sooner the chemical can be diluted and removed, the less likely there is to be damage to the ocular surface. **Immediate, copious irrigation may save the eye after chemical injury.**

- For foreign body removal, a minute or so of irrigation should be sufficient to remove any foreign bodies.
- For severe acid or alkali burns, emergency irrigation should continue for **at least** 15 minutes; 30 minutes is better. It is advisable to continue to irrigate acid/alkali burn injuries for a further 12–24 hours by setting up a saline drip to continue to gently irrigate the eye.

You will need:

- A large syringe or a small receptacle with a pouring spout, such as a feeding cup
- Irrigating fluid (normal saline or clean water at room temperature)
- Local anaesthetic eye drops
- Towel or gauze swabs
- Lid retractors if available
- A bowl or kidney dish

Method

- Instil local anaesthetic eye drops.
- With the patient lying down, protect the neck and shoulders with a towel or sheet.
- Place the bowl or kidney dish against the cheek, on the affected side, with the head tilted sideways towards it.
- Fill the feeding cup or syringe with the irrigating fluid and test the temperature on your hand.

Heiko Philippin

Irrigating the eye

- Ask the patient to fix his/her gaze ahead.
- Open the eyelids. If necessary, **gently** use eyelid retractors.
- Pour or syringe the fluid slowly and steadily, from no more than 5 centimetres away, onto the front surface of the eye, inside the lower eyelid and under the upper eyelid.
- If possible, evert the upper eyelid to access all of the upper conjunctival fornix.
- Ask the patient to move the eye in all directions while the irrigation is maintained.
- Check and record the visual acuity when the procedure is finished.
- In alkali and acid burns, refer the patient to an ophthalmologist for assessment.