

part 4

Appendices/ References

Appendix A: Sample survey form—trachoma

The following sample survey form is recommended by the World Health Organization.

| SURVEY OF TRACHOMA | | | | | |
|--|----------------------|----------------------|----------------------|----------------------|----------------------|
| Examiner: | | | Community: | | |
| Subject examined: | | | Household no.: | | |
| | | | Sex: | | |
| Enter one of the two following symbols for each sign: | | | 0=Absent | | |
| | | | 1=Present | | |
| | TF | TI | TS | TT | CO |
| Right eye | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| Left eye | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |

Appendix B: Surgical procedures for trichiasis

The following description is based on the training manual developed by the World Health Organization for surgery for trichiasis.¹⁰⁴

B.1 The surgical setting

Where possible, the procedure should be provided within the community and close to where the patient lives; for example, at the local health centre. The benefits are that surgery is performed more promptly and may be more acceptable to the patient and the community and the costs of transportation are reduced.

If it is not possible or appropriate to perform the surgery within the community, patients will need to be sent or brought to the nearest hospital or surgical clinic.

Appendix C provides information on the equipment, consumables and preparation required for the surgical intervention.

B.2 Surgical techniques

B.2.1 Local anaesthetic

The anaesthetic usually used for the procedure is lignocaine 2% (lidocaine). It is preferable to open a new ampoule for each patient but if a bottle is used then it must be kept sterile. Use only 3 ml of the lignocaine and never use more than 5 ml per eye.

The lignocaine is injected into the plane of the upper lid of the eye that is to have the surgery, about 3 mm above the lid margin. Test that the anaesthetic has taken after three minutes. The patient should not feel any pain but may feel movement. If pain is felt, inject another 1 ml of lignocaine but no more than 5 ml in an operation.

B.2.2 Incision and wound construction

Fixing the eyelid

In order to be able to evert the eyelid, it is necessary to secure the upper lid using haemostats at the medial and lateral end of the eyelid.

Incising the eyelid

▶ **Incising the skin and muscle**

Incise the skin and muscle between the haemostats, parallel to the lid margin and 3 mm above it. The depth of the incision must be superficial, to the tarsal plate; care must be taken not to damage the eyeball.

▶ **Incising the conjunctiva and tarsal plate**

Evert the eyelid, then incise the conjunctiva and tarsal plate between the haemostats and through its full thickness, parallel to the lid margin and 3 mm above it.

▶ **Uniting the incisions**

Elevate the lid with the haemostats, then insert the points of the closed scissors into the incision in the conjunctiva tarsal plate, through remaining intact muscle, and out through the skin muscle incision.

Open the scissors while still holding them across the lid and thereby spread the muscles apart. Repeat along the incision until it is a full-thickness hole.

Remove the haemostats using firm pressure with a sterile swab to stop any bleeding.

▶ **Completing the incision medially and laterally**

Open the incision by grasping and elevating the skin of the lid margin near where you intend to cut with toothed forceps.

Use the scissors to completely divide the medial and lateral edges of the tarsal plate (that portion formerly held by the haemostats), cutting parallel to the lid margin. Do not cut much beyond the edge of the tarsal plate medially: the marginal artery may be cut.

At this stage the eyelid will be divided through its entire thickness, 3 mm from and parallel to the lid margin but connected at each end. The 3-mm lid margin portion is the distal fragment, the remaining portion the proximal fragment.

Suturing the eyelid

The purpose of the sutures is to re-attach the distal fragment in an outwardly rotated position so that the eyelashes no longer rub on the cornea. To achieve this, the sutures are anchored on the conjunctival surface of the proximal

fragment and then run over the distal tarsal plate to exit through the skin near the eyelashes, drawing the lash margin outwards and upwards.

4/0 silk is suitable for suturing, and sutures with needles at both ends are needed. Unless double-armed sutures are available the sterile needles will need to be threaded onto the suture. Three sutures—that is, six needles—are used.

- ▶ **Placing sutures in the proximal fragments**

Mount the needle to point toward you, draw back the skin of the proximal portion of the eyelid, and grasp the cut edge of the tarsal plate with toothed forceps. The edge can then be everted to insert the sutures.

Pass the first needle and suture through a 1-mm bite of tarsal conjunctiva and a quarter of the thickness of the tarsal plate, near the middle of the eyelid. The needle will emerge from the cut edge of the tarsal plate.

At the other end of the same suture, the second needle is passed through the conjunctiva and tarsal plate in the same way, so that the suture is symmetrically placed at the centre of the eyelid.

Place a haemostat on the two strands of suture and draw it upward to display clearly and fix firmly the cut edges for subsequent sutures.

Pass double-armed sutures in an identical manner on either side of the first, to reach the medial and lateral ends of the incision. If this is not done, trichiasis will recur at either side.

- ▶ **Placing the sutures in the distal fragment**

Look down at the skin surface of the eyelid's distal fragment (bearing the eyelashes), remove the clip from the middle and mount one needle in the needle holder to point away from you.

Pass the needle through the muscle layer on the front surface of the tarsal plate, to emerge through the skin about 1 mm above the eyelashes. The entry point should correspond with the site of the suture in the proximal eyelid fragment.

Repeat this process with a second needle on the same suture, again matching the entry point with the exit on the proximal fragment. Clip the two ends of the suture together again. Repeat with the two other sutures on the medial and lateral sides.

- ▶ **Tying the sutures**

Tie the central suture with three single knots. Then tie the other two sutures in the same way—tying them firmly enough to produce a slight over-correction.

Cut the sutures 3 mm above the knot to avoid irritation to the eye.

- ▶ **Skin sutures**

Skin sutures need have only a needle at one end. Two or three sutures are placed to close the skin, passing into the skin 1 mm from the other cut edge. They are tied, without tension, and cut.

The final result will show an eyelid with a slight over-correction and the eyelashes pointing well away from the eye all along the edge of the eyelid.

Completing the procedure

- ▶ **Applying the antibiotic and dressing**

Apply tetracycline ointment into the conjunctival sac and into the wound; pad the eye and bandage it if desired. Paracetamol can be given for pain: two x 500-mg tablets immediately and with eight further tablets for the patient to take home.

The patient should be advised to rest for one or two days.

After the operation has been performed, the instruments are cleaned and sterilised using steam sterilisation.

B.2.3 Post-operative care

The day following the surgery the wound should be checked. The pad should be removed and the eye cleaned with gauze and saline. Re-apply tetracycline ointment between the lower lid and the eyeball. The patient can be shown how to do this, so that the ointment can be applied twice daily for the next seven days.

On day 8 the sutures can be removed after the eye is cleaned.

B.2.4 Complications

Complications during the procedure

- ▶ **Bleeding**

If bleeding cannot be controlled by pressure with a gauze swab, the marginal artery may have been severed. Locate the source, secure with a

haemostat, and tie with a suture just below the haemostat to close the artery. Alternatively, undersew the area with a suture.

▶ **Division of the eyelid margin**

Division of the eyelid margin is most unlikely to occur. If it does, the distal fragment will need to be sutured together.

▶ **Over-correction**

If the lid margin is grossly everted, remove the skin and tarsal plate sutures and repeat the suturing; this time, tie with less tension.

▶ **Under-correction**

If the eyelashes still touch or nearly touch the cornea, remove the tarsal plate sutures and repeat the suturing, tying the sutures with more tension to produce a mild degree of over-correction.

Post-operative complications: within 48 hours

▶ **Renewed bleeding**

Renewed bleeding can be controlled by firm pressure with the heel of the hand, through the dressing onto the eye. Patients and relatives should be shown how to do this if bleeding occurs at home. If the bleeding is severe or persistent, the patient should be referred to a doctor.

▶ **Local infection**

In cases of local infection, any involved sutures should be removed and the wound cleaned with gauze and boiled water three times daily.

▶ **Cellulitis**

If the patient has pain, spreading redness, fever and a raised pulse, antibiotics will be necessary and urgent referral to a doctor is essential. Hospital admission may be required.

▶ **Excessive rotation of the tarsus**

The distal strip of the eyelid margin may be so rotated that it has turned right up. This can be caused by:

- too big a distal fragment—that is, an incision much more than 3 mm from the lid margin;
- excessive tension on the tarsal rotation sutures;
- the sutures emerging within the lashes rather than above them.

If the eyelids do not close properly or the cosmetic appearance is distressing, the sutures should be removed and the upper lid massaged downwards. A second operation may be necessary to correct the excessive rotation: defective lid closure is a serious condition.

Post-operative complications: after 48 hours

▶ **Granuloma formation**

A granuloma looks like a red lump on the conjunctiva over the wound. It can be excised with a scalpel or scissors after applying anaesthetic drops. Remove any remaining sutures at the site.

▶ **Necrosis of the eyelid margin**

Necrosis of the eyelid margin is caused by poor blood supply resulting from too narrow a distal fragment. It will gradually heal without treatment.

Appendix C: Trichiasis surgery— Equipment, consumables and preparation

The following instruments and sutures are required:

- ▶ large metal bowl or plastic bucket
- ▶ two kidney dishes
- ▶ galley pot
- ▶ container for sterile water
- ▶ scalpel holder for no. 15 blades
- ▶ packet of no. 15 blades
- ▶ needle holder (without catch)
- ▶ toothed forceps
- ▶ two pairs of scissors (straight, with blunt ends)
- ▶ two small haemostats ('mosquitos')
- ▶ six cutting-eyed needles for 4/0 silk suturing of eyelid
- ▶ 4/0 silk 90-metre reel (sufficient for 200 operations)
- ▶ operating loupes x2 magnification will also be useful.

The following consumables or their equivalent should be available:

- ▶ tetracycline 1% eye ointment
- ▶ topical anaesthetic—for example, amethocaine eye drops
- ▶ solution for disinfecting the instruments—for example, glutaraldehyde 2%
- ▶ sterile distilled water or normal saline
- ▶ povidone iodine 10% for skin preparation
- ▶ 21G disposable needles
- ▶ 5-ml disposable syringes
- ▶ surgical gloves
- ▶ gauze
- ▶ zinc strapping—1/2 inch/1.25 cm
- ▶ sterile drape approximately 1 metre square with a central hole 10 cm square made of linen or sterilised paper.

The instruments must be sterilised or receive high-level disinfection before each operation.

Explanation

- ▶ Explain to the patient what the operation is for and what will happen. Obtain the patient's consent to the surgery and ask him or her to sign the consent form. If the patient cannot understand English it will be necessary to ensure that the procedure is explained and consent obtained with the assistance of an interpreter. It may be helpful to have the consent form translated into the local language/s.
- ▶ Wash the patient's face with soap and clean boiled water—especially the eyelids, forehead, temple, cheeks and nose.
- ▶ Have the patient lie down on the operating table or bed.
- ▶ Explain to the patient that he or she
 - should lie quietly during the procedure,
 - ought not to feel pain during the operation but to tell you if they do,
 - will have clean towels covering their face and chest so that the operation is clean,
 - must not move the towels or try to touch the eye or the surgeon.

Apply anaesthetic drops to the eye

Sterile preparation

- ▶ The instruments, the surgeon's hands, the hands of any assistants and the patient's skin must be sterilised. Under ideal conditions, use proper surgical scrubbing solution such as HIBICleanse™, chlorohexidine 40 mg/ml, isoprophyl alcohol 40 mg/ml, or similar.

Appendix D: Health promotion materials

[The following information comes from *Indigenous Health Promotion Resources: a national guide for Aboriginal and Torres Strait Islander health workers* (2nd edition), a special publication of the *Aboriginal and Islander Health Worker Journal* (PO Box 502, Matraville NSW 2036).]

Poster

Trachoma—explanation of the clinical signs represented through a painting

Created by Mrs Jennifer Summerfield, Nganampa Health Council

Produced by Nganampa Health Council Inc.

Contact Nganampa Health Council, PO Box 2232, Alice Springs
NT 0871
Ph. 08 8952 5300
Fax 08 8952 2299

Video

Shower Block (UPK)—music video clip

Produced by Nganampa Health Council Inc.

Contact Nganampa Health Council, PO Box 2232, Alice Springs
NT 0871
Ph. 08 8952 5300
Fax 08 8952 2299

Video

Jabby's Friend—teaches Jabby and his grandson about how to prevent trachoma and blindness.

Produced by Desert Pictures with the Kimberley Public Health Unit (1995).

Contact Director, Kimberley Public Health Unit, PMB 912,
Derby WA 6728
Ph. 08 9191 1144
Fax 08 9193 1378

Flip charts

Iris and Lens—characters explain trachoma and its prevention

Produced by Kimberley Public Health Unit, Aboriginal Health Promotion and Disease Control (1995)

Contact Director, Kimberley Public Health Unit, PMB 912,
Derby WA 6728
Ph. 08 9191 1144
Fax 08 9193 1378

Sticker

Information about how to look after your eyes and stop trachoma

Produced by Kimberley Aboriginal Medical Services Council, HEAT Works

Contact Kimberley Health Promotion Unit, PO Box 1377,
Broome WA 6725
Ph. 08 9193 6043
Fax 08 9192 2500

Book

Housing for Health: towards a healthy living environment for Aboriginal Australia

Produced by Nganampa Health Council Inc.

Contact Nganampa Health Council, PO Box 2232, Alice Springs
NT 0871
Ph. 08 8952 5300
Fax: 08 8952 2299

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