THE TREATMENT OF CICATRICIAL ENTROPION*

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'It is difficult to judge the comparative value of the 60 different operations advocated in the sustained surgical onslaught against entropion'.[1] In fact, on looking through the publications of the last 20 years there seem to be a considerably greater number of operations described.

Besainou[2] in 1956 discussed and summarized the literature at that time and included 273 references.

In 1961 - 1962 I saw a considerable number of cases of cicatricial entropion due to advanced trachoma in the Northern Transvaal at Elim Hospital, and this paper is based on my experiences there.

The procedures described in the past fall basically into two groups:

1. Eversion of the eyelid margin by hinging the tarsal plate, by a horizontal incision through the tarsal plate via skin or palpebral conjunctiva.
2. Splitting of the lid with interposition of tissue at the lid edge and resultant upward displacement of the cilia.

In the first group, the usual operation is a tarsal pairing and eversion operation as described by Streatfield and Snellen.[3] A wedge of skin, muscle and tarsal plate is removed, and the distal portion of the eyelid is everted around this hinge.

The cilia may be everted by an incision through the palpebral conjunctiva and tarsal plate 3 mm. from the lid margin, and a conjunctivo-tarsal wedge is sewn into the hinge (Wendell Hughes).[4]

Green[5] and Panas[6] are other names associated with these types of operation.

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The Lagleyze operation[7] involves a mucous membrane graft which is placed in an incision along the tarsal plate on the conjunctival surface. The modifications based on this principle are numerous. In the Wies operation,[8] the incision passes through the full thickness of the lid, 2 mm. above the roots of the eyelashes, and this flap is angled forwards and restitched to the lid.

In the 2nd group, the lid margin is split into skin and muscle, and tarsal and conjunctival layers to a depth of 4 mm. According to Fox,[9] this is more suited to those cases where the tarsal plate is not greatly roughened or thickened, but where the cilia irritate the cornea. In the Machek-Blascovics technique,[9] based on the Dianoux operation, a strip of skin and muscle is dissected 4 mm. from the ciliary margin. A similar strip including cilia is made and the two strips are interchanged and sutured together. Later the edges of the hammock so formed are trimmed. Van Millingen[10] used buccal mucous membrane which was interposed at the split border of the lid. Watson[11] split the lid margin and inserted skin, whereas Gayet[12] used skin and muscle.

In cicatricial entropion due to advanced trachoma (Fig. 1), the problem is one of excessive fibrosis and thickening and contracture of the tarsal plate. There is, in addition, a contracture of the conjunctiva which leads to the inversion of the eyelashes. The above operations tend to fail in advanced cases because the shortening of the conjunctiva remains.

The operations described are also time-consuming, and the fibrotic tissue bleeds continually.

Repair of cicatricial entropion due to trachoma was the second commonest surgical procedure performed by me over a 14-month period, comprising 177 of my series. I

originally used the Streatfield-Snellen procedure but found that it was time-consuming and did not prevent recurrence. It is also an unsatisfactory procedure where the tarsal plate is small and fibrosed.

Fig. 1. Cicatricial entropion due to advanced trachoma.

The most desirable operation is one that is technically simple, of short duration with minimal discomfort to the patient, and free from recurrences. I consequently attempted a different approach and split the lid into 2 layers, which is a basic lid procedure, and modified the repair of the entropion accordingly.

TECHNIQUE

Local anaesthetic was used in all cases.

The lid is split through the grey line into 2 layers—a superficial skin and orbicularis muscle layer, and a deep tarsal and palpebral conjunctival layer. The split extends along the length of the lid from near the lacrimal canaliculus to the external canthus and is initially about 6 mm. in depth. At the external canthus, the incision through the skin and muscle is carried vertically for 10 mm. and the skin and muscle flap is dissected off the tarsal plate. A plane of cleavage occurs without difficulty, and there is minimal bleeding. The skin-and-muscle layer is thus freed from the tarsal plate up to the upper border of the tarsus (Fig. 2).

The tarso-conjunctival layer is now pulled down, so that its free edge is lower than that of the cilia on the skin-and-muscle layer by 4 - 6 mm. The 2 layers are sutured together in this position. Three separate 4/0 black-silk, double needle sutures are passed through the skin-and-muscle layer, 3 mm. from the cilia, and then through the tarso-conjunctival layer, 9 mm. from its free edge. The suture passes back through the tarso-conjunctival layer and through the skin-and-muscle layer and is then tied over rubber pegs on the skin (Fig. 3). There has been a relative lengthening of the tarso-conjunctival layer and a shortening of the skin-and-muscle layer.

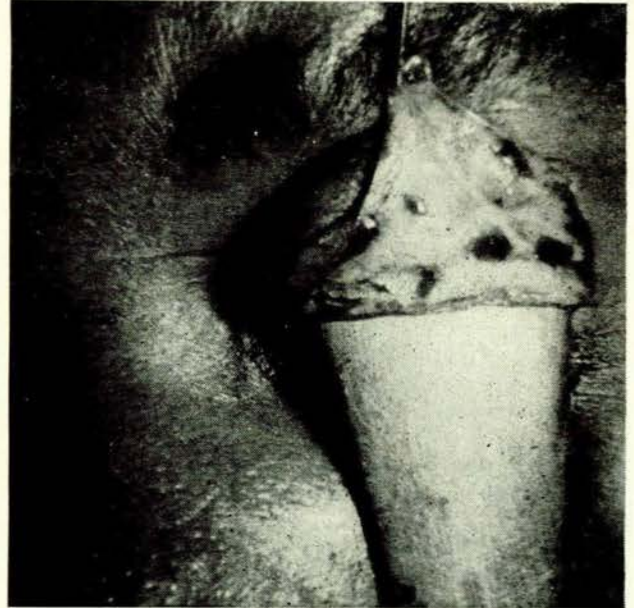

Fig. 2. The eyelid is split into a superficial skin and muscle layer, and a deep tarsal and conjunctival layer.

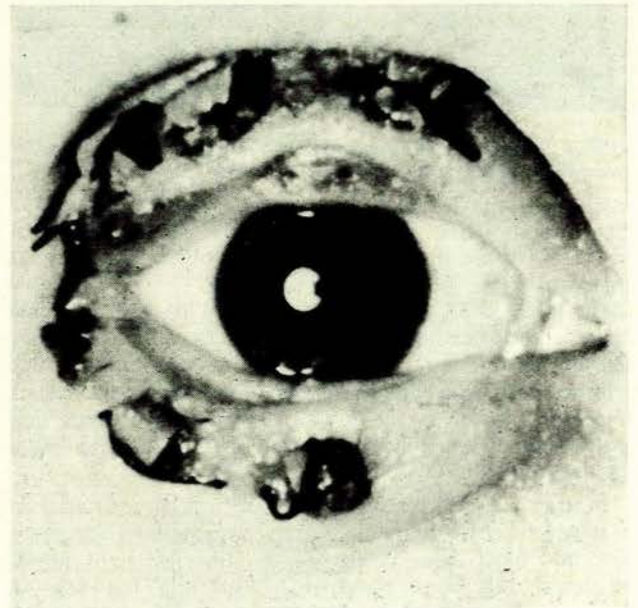

Fig. 3. The 2 layers are sutured together in a case involving upper and lower eyelids.

A raw area is now left on the surface of the distal edge of the tarso-conjunctival layer. Interposition of mucous membrane or skin is not necessary. At least 4 - 6 mm. of bare area should be left. Immediately after operation it may appear as if too large a bare area has been left. The

area heals rapidly and there does not seem to be any danger of over-correction.

At the lateral margin of the lid, where the vertical skin incision was made, the lower edge of the skin-and-muscle layer is pulled laterally and is anchored to the tarsal plate and to the adjacent skin with 6/0 black silk. Excess skin is trimmed and sutured together.

A pressure dressing is applied and after 24 hours the dressing is removed and the eyelid remains uncovered. The sutures are removed after 10 days (Fig. 4).

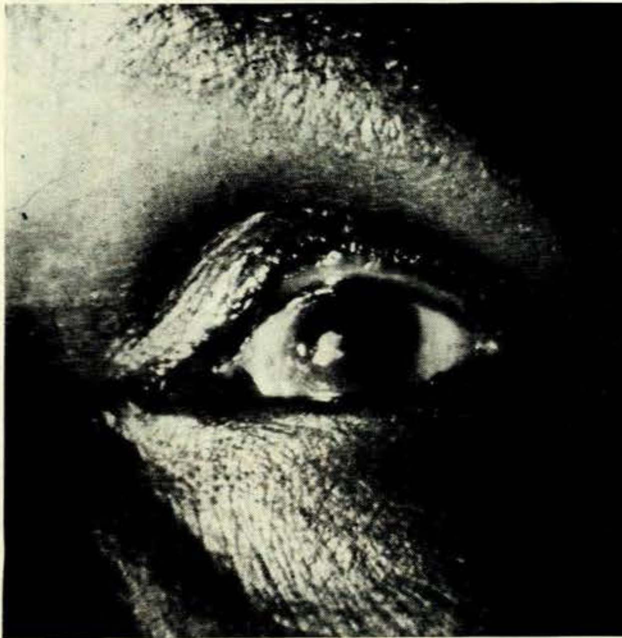

Fig. 4. Postoperative appearance of upper eyelid after 2 weeks. Compare with Fig. 1.

CASE REPORT

This case was not due to the usual trachomatous cicatricial entropion.

Mrs. P., aged 38, presented in March 1965 with bilateral upper- and lower-lid trichiasis. She had pulled out her eyelashes every day for 12 years. She said that all her eyelashes had fallen out, and when they regrew, the lashes projected onto the eyes. This had given her so much discomfort and distress that she asked to have her lid edges removed!

The eyelashes were seen to be short and stumpy and in all stages of growth up to 2 mm. in length. They were black and hard (Fig. 5). In March 1965 the right upper and lower lids were repaired by splitting the lids as described above (Fig. 6). In April, the left upper and lower eyelids were repaired in a similar fashion.

Following this, the eyelashes started to grow again. As soon as they had grown to about 8 mm. in length they would fall out and a new growth of lashes would develop. This seemed to be similar to the original situation 12 years ago, except that now the eyelashes were growing in the correct direction. Many such episodes occurred and the eyelashes continued to give her a moulting look. She eventually took to a pair of false eyelashes, with most pleasing results. I do not think that the operation was responsible for the failure of permanent retention of mature eyelashes, but up to the present she has had no further trichiasis.

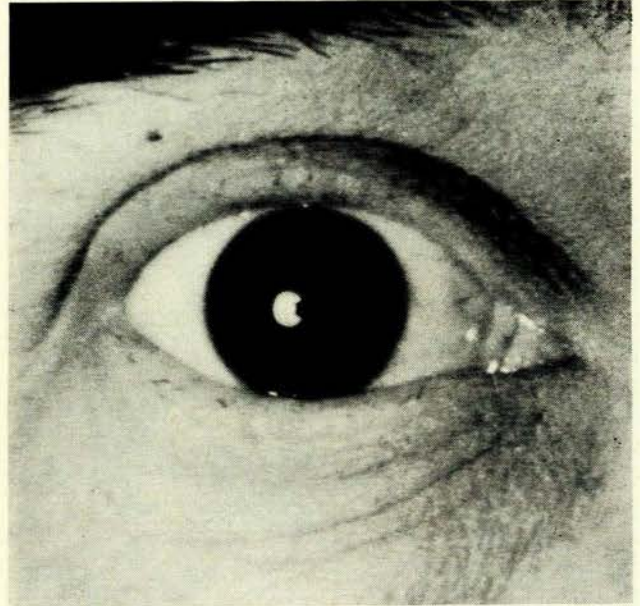

Fig. 5. Pre-operative appearance right eye.

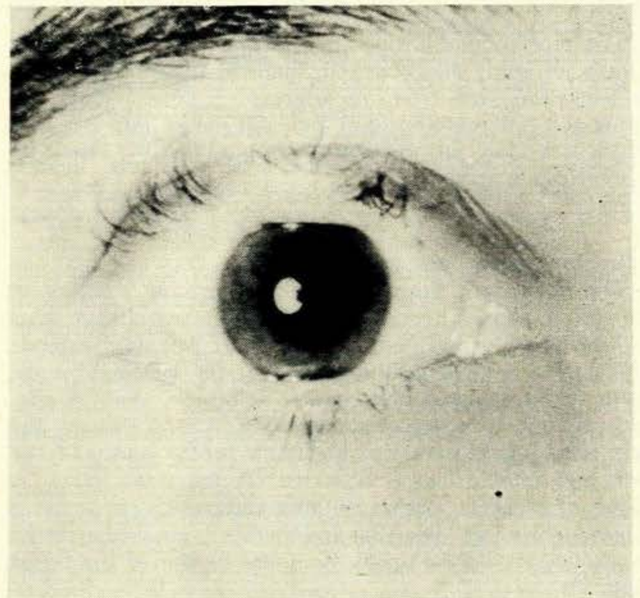

Fig. 6. Postoperative appearance right eye.

DISCUSSION

In cicatricial entropion due to trachoma, the conjunctiva and the tarsal plate are affected with fibrosis and contraction. This inverts the cilia, causing entropion. The shortening of the tarso-conjunctival layer is therefore the crux of the matter.

When one splits the lid into tarso-conjunctival and skin-and-muscle layers an interesting appearance occurs. When the patient looks down, the 2 layers hang loosely. With voluntary elevation of the eye, the levator palpebrae pulls the tarso-conjunctival layer out of view. Since there is contracture of this layer, this movement seems exaggerated, and one can see how this tarso-conjunctival layer must pull on the skin-and-muscle layer.

Therefore, I have attempted to lengthen the tarso-conjunctival layer again *in relation to* the skin-and-muscle layer which I have shortened. This is a different approach to the Streatfield-Snellen operation which shortens the skin-and-muscle layer by wedge resection. At the same time the cilia are now placed in a position where they point away from the eyeball.

This operation has proved effective for cicatricial entropion due to any cause, and it may be performed on both the upper and lower lids. There is minimal haemorrhage during the procedure, and, by mobilizing the two layers, one can estimate how much sliding of the flaps is necessary. The postoperative cosmetic appearance is very satisfactory, there is minimal postoperative discomfort and a good functional result may be expected.

Loss of cilia could possibly occur. In cases of gross entropion, loss of some eyelashes is a happy event for the patient. Splitting of the lid into 2 layers is a fundamental procedure and I have not noticed loss of eyelashes in these cases. The lid can also be split slightly more posterior to the grey line.

The most medial point of the commencement of the lid-splitting is a point near the punctum of the canaliculus. In the upper lid this could be ignored, but I have never personally encroached on the punctum. However, in severe cases a small, 4 mm. vertical incision through the skin-and-muscle layer, similar to that of the lateral incision, can be done, and the skin-and-muscle flap is lifted up like a curtain from the tarsus in this area.

A total of 177 cases of cicatricial entropion due to trachoma were repaired in this fashion. After 1 year no patient had returned to hospital with a recurrence. After 5 years, when this operation had been continually used by my successor, only 10 cases had returned with recurrences.

SUMMARY

The repair of cicatricial entropion in 177 cases due to advanced trachoma is described. The rationale of lid-splitting in preference to other operations is discussed. This operation can be performed on all types of cicatricial entropion. The operation is effective and the cosmetic appearance is very satisfactory.

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