



Necessity of Careful Evaluation and Individualization in Management of Ectropion

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ABSTRACT

Purpose: Ectropion of the eyelid can have a very varied picture in different patients. While surgically correcting the entropion in these patients, it is necessary to ensure that the patient achieves a satisfactory cosmetic as well as functional outcome as the proper condition and function of the lids is essential for the health of the cornea. The purpose of this study is to highlight the important features of the examination of these patients, the steps in the planning of their surgery and the successful implementation of the surgical plan.

Methods: Through examples of three cases, the salient features of the management are described. Two patients were treated via lateral tarsal strip procedure while the third patient was managed by using multiple Z – plasty and lateral transposition flap.

Result: All the three patients achieved good cosmetic and functional outcome after surgery.

Conclusion: Proper pre-operative evaluation of the patient, thorough understanding of the anatomy of the lids and meticulous surgery is a must to ensure satisfactory outcome after ectropion surgery.

KEYWORDS

Ectropion, Involutional ectropion, lateral tarsal strip, Z-plasty

Introduction

Ectropion is a malposition of the eyelid involving eversion of the eyelid margin away from the globe which may occur for a variety of reasons. The clinical manifestation of this condition may be very variable in different patients and each patient has to be carefully evaluated and his surgical plan carefully planned and individualized to achieve a successful outcome. ¹

The purpose of this article is to highlight the salient features of evaluation of patients with ectropion, the steps in the planning of their surgery and the successful implementation of the surgical plan.

Materials and Methods

Case 1:

A 60 year old patient presented with complaints of watering of both the eyes for the past one year and 'drooping' of both lower eyelids for the past 3 months. On examination, the patient had bilateral severe involutional ectropion of the whole length of the lower lid with tarsal eversion. The tarsal conjunctiva was thickened, dry looking and keratinized. There was marked eyelid laxity, lateral canthal tendon laxity but there was no medial canthal tendon laxity nor any vertical skin shortening.



Figure 1 Bilateral involutional ectropion



Figure 2 Blunt dissection to expose periosteum of lateral orbital rim



Figure 3 The prepared lateral tarsal strip



Figure 4 Anchoring of the lateral tarsal strip to the lateral orbital rim



Figure 5 Checking the position of the lower lid after pulling the anchoring suture



Figure 6 Removing the excess skin in a triangular fashion



Figure 7 Final per operative appearance of the patient

The patient was treated with bilateral lateral tarsal strip

procedure. A lateral canthotomy was performed by cutting horizontally at the latera canthus till the lateral orbital rim after crushing the tissues using an artery forceps. Blunt dissection was done to expose the periosteum of the lateral orbital rim. The lower eyelid was then pulled medially and the inferior crus of the lateral canthal tendon and the inferior orbital septum was cut to free the lower eyelid. A long lateral tarsal strip was then designed by cutting at the inferior borders of the tarsus, removing the anterior lamella and scraping the tarsal conjunctiva. A double armed 5-0 non absorbable polypropylene suture was then passed through the lateral tarsal strip and then through the internal aspect of the periosteum of the lateral orbital rim a little superiorly. The level of this suture decides the level of the lateral canthus. Care was taken to ensure that the lid was not excessively tightened as this could lead to lid retraction. The lateral canthus was then reformed by passing a 6-0 polyglycolic suture through the grey line 2 mm away from the cut edges of the upper and lower lids. The excessive skin was excised and skin incision closed in two layers to ensure that the polypropylene suture does not get exposed over time.

Case 2

A 50 year old lady presented with the complaint of a reddish mass at the outer end of her left lower lid. On examination, she had an ectropion restricted to the lateral aspect of her left lower eyelid with thickening of the tarsal conjunctiva which she had mistaken for a mass. On examination, there was no mass or lid laxity or skin shortening. She was managed by designing a small tarsal strip and anchoring it to the periosteum of the lateral orbital rim.



Figure 8 Left Lateral Ectropion



Figure 9 Correction of lateral ectropion after surgery

Case 3

A 27 year old gentleman presented with cicatricial ectropion as well as lid retraction of the left upper lid following trauma to the eyelid in a road traffic accident. There was severe skin shortening at the medial aspect. The patient was managed with the help of multiple Z plasty and a lateral transposition flap.



Figure 10 Cicatricial Ectropion accompanied with lid retraction



Figure 11 Skin markings of incision line and multiple Z - plasty



Figure 15 Appearance at completion of surgery



Figure 12 Creation of the Z flaps



Figure 16 Appearance two weeks after surgery



Figure 13 Creating a transposition flap



Figure 14 Suturing the flap into position

A traction suture with 3-0 silk was placed at the grey line at the site of maximum shortening and anchored inferiorly. An incision was given along the line of the scar. Multiple Z plasty were designed to break up the contracture and to cause vertical lengthening of the tissue. Subcutaneous fibrous tissue was excised as much as possible. The area was widely undermined to loosen up the tissues to make them more mobile. A lateral transposition flap was fashioned from the lateral part of the lid to provide skin for the medial aspect. It was undermined widely, pulled medially and sutured in a multiple Z pattern. The traction suture was taped as a Frost suture to the cheek and the eye bandaged after placing antibiotic ointment.

Results

All the lids healed well with resolution of the ectropion. Case 1 and Case 2 achieved successful cosmetic and functional outcome. The eyelids were restored to their normal position and the complaint of watering subsided in case 1. In case 3, the eyelid was much better cosmetically and functionally but developed mild recurrence of the lid retraction.

Discussion

Ectropion may occur due to various causes. It may be congenital, involutional, cicatricial or mechanical. Congenital ectropion is very rare and occurs secondary to shortage of the skin of the eyelids. It is very rare and may be seen in association with Down's Syndrome, blepharophimosis syndrome, lamellar ichthyosis, and Centurion Syndrome.

Involutional ectropion is the commonest cause of ectropion and occurs due to the laxity of lower lids retractors due to age related involutional changes.² It may be accompanied by laxity of medial or/and lateral canthal tendon.

Cicatricial ectropion occurs secondary to the shortening of the anterior lamella and may occur following trauma, surgery or a cicatricial skin condition.

Mechanical ectropion may occur secondary to tumours, cysts or any other mass in the lower lid.

Paralytic ectropion occurs due to the paralysis of orbicularis oculi which keeps the lid opposed to the globe. This may occur secondary to facial nerve paralysis due to any cause.

Ectropion usually affects the lower lid but may involve the up-

per lid in cases with cicatrisation secondary to trauma or in conditions like floppy eyelid syndrome.³ In the upper lid, laxity of the retractor (levator palpebrae superioris) leads to development of ptosis rather than ectropion.

To plan a successful correction of ectropion, careful evaluation of the eyelids is a must. Laxity of the lower lid retractors is tested by the lid distraction test and the snap test. The eyelid is gently pulled away from the globe and the distraction of more than 10 mm indicates laxity of the lower lid retractors.⁴ The lid is then released and its return movement is carefully observed. If the lid immediately snaps back into its normal position, it indicates normal tone of the retractors but if it returns back slowly or returns only after a few blinks, it indicates laxity of the retractors.

Laxity of the medial and lateral canthal tendon is tested by pulling the lid laterally and medially respectively. If there is no tendon laxity, the canthi should not move more than 1-2 mm. Rounding of the normally acute angled lateral canthus also indicates lateral canthal tendon laxity.

In some early cases of ectropion, ectropion may be restricted to the medial aspect only. In such cases, the position of the lower punctum should be carefully observed. In a normal eyelid, the lower punctum lies just lateral to the canthus below the upper punctum and is directed posteriorly into the lacrimal lake and touches the globe. But if the patient has medial ectropion, the punctum lies away from the globe out of the lacrimal lake and thus is unable to drain the tears and hence the patient has complaints of watering. Careful management of medial ectropion is a must to ameliorate this watering.

It is important to look for vertical shortening of skin in these patients as it needs to be specifically managed and other surgical procedures will fail if this aspect is ignored. The vertical shortening of the skin may be clearly visible or it may be subtle. Subtle shortening may be evaluated by asking the patient to look up and open his mouth. If there is vertical shortening the ectropion will worsen with this manoeuvre. Also, the lower eyelid can be gently pushed up to its correct position and the patient should be carefully observed for vertical tension lines in the eyelid skin.

The surgery is then planned according to the findings of the examination. A combination of surgical procedures may be required in some patients.⁵ If the patient has only a mild medial ectropion but there is no laxity of the medial canthal tendon, excision of a diamond of tarsoconjunctiva is done below the lower punctum followed by tightening of the lower lid retractors.⁶ If the patients have mild medial canthal tendon laxity, plication of the anterior limb of the medial canthal tendon is done but if the patient has severe laxity of medial canthal tendon, medial canthal resection with marsupialization of the cut end of the inferior canaliculus may be required.⁷ If the laxity involves the lateral canthal tendon or the whole lid, a lateral tarsal strip is a very helpful procedure to correct the ectropion.⁸ A pentagonal full thickness lid excision or a lazy T⁹ or a Kuhnt Symanowski procedure (horizontal lid shortening along with blepharoplasty) is rarely performed nowadays due to the chances of formation of a lid notch or damaging the contour of the lower lid and as the lateral tarsal strip procedure achieves the same purpose without these risks.

If skin shortening is present, Z plasty¹⁰, pedicle rotation flap¹¹ or a skin graft is necessary. Medial canthoplasty¹² or a lateral tarsorrhaphy may also be required in patients with paralytic ectropion.

Conclusion

Ectropion of the eyelids can be managed well if the patients are evaluated properly and their surgical plan is decided considering the etiopathology and the surgeon has a good understanding of the anatomy of the eyelid and orbital region.

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