A Review of the Lower Eye Lid Tightening to Repair Ectropion

C RENE* Z KAMAL**

**Concultant Ophthalmic Surgeron, Addenbrooke's Hospital, Cambridge, U.K, **Royal Victorian eye & Ear Hospital, Gisborne street, East Melbourne VIC3002, Australia;*

Correspondence to: Dr Zahid Kamal

The repair of ectropion is a commonly performed procedure. Full thickness of lid excision has been used for more than a century to correct this condition[1]. A procedure to anchor lateral tarsus to the periorbita of the superior part of lateral orbit was first introduced by Tenzel et al[2]. Later Anderson and Gordy[3] described a simpler version of the procedure. Some of the studies published by the oculo-plastic surgeons propose that lateral tarsal strip gives better outcome. On the other hand most of the general ophthalmologists believe that lid shortening by full thickness pentagon excision is quite simple and safe. The purpose of the study was to assess and compare the outcome of the two procedures.

Key words: Ectropion, lateral tarsal strip, pentagon lower lid excision

A multi-centre, retrospective case note study of the cases who under went ectropion repair surgery in the period July1997–March 1999 (21 months) was undertaken. Participating centres included Addenbrooke`s Hospital, Cambridge; Hinchinbrooke`s Hospital, Huntingdon and The Ipswich Hospital, Ipswich UK.

The criteria for exclusion were as follows:

1. Ectropion Surgery combined with other lid procedure.
2. Cases of Paralytic or Cicatricial ectropion.

Pre-operative assessment, operative procedure, post-operative complications were recorded. The procedures were performed by different surgeons. The technique for full thickness lower lid pentagon excision was same as published by Tyres and Collin[4] and for lateral tarsal strip as described by Olver.[5] In case of full thickness lid excision 6/0 silk or polygalactin (vicryl) suture was used on lid margin.

A 5/0 non-absorbable suture (polyester with ½ circle needle) was used to anchor the tarsal strip to the supero-lateral orbital periosteum. The skin and lateral canthal angle was closed with 6/0 long term absorbable suture (polygalactin 910). The skin sutures were left to fall off spontaneously.

Results

A total of 70 eyelids were included in the study. Out of these 28 had full thickness lid excision (Group A) and 42 had lateral tarsal strip (Group B). *Table1* shows break up of the surgical techniques employed. The follow up results at week 2, weeks 4-6 and finally at 3 months or more are shown in *Table 2*. There were three(10.5%) lower lid notches in group A, which increased to 5(18%) at the final follow up. The group B had only one case (2.3%) of infection and/or granuloma in the outer canthal area at each stage of follow up, but they all resolved with a course of oral cephlosporin. *Table 3* shows success rate of the two procedures.

Discussion

Table 4 shows success rate for the correction of ectropion to be 71% in group A and 90% in group B.

The group A (Pentagon) had a higher rate of complications. There were around 11% cases of lid notches at initial follow up, however it rose to 18%. There was no case of wound gap in group B. Liu[6] reported 7.4% incidence of complications in a group of 27 patients who had pentagon excision to correct lid laxity. There was one case each of trichiasis and corneal irritation due to lid margin sutures. There was no case of wound dehiscence in group B. Frueh & Schoengrath[7] never encountered a wound dchiscence in their cases of lateral tarsal strips. The group B (LTS) group had two cases of infection at initial follow up. However there was only one case of infection at 2nd and another at final follow up. All these cases improved with a course of oral cephalosporin. Liu[6] had one case (5.9%) of suture granuloma and 3 cases of transient tenderness at outer canthus in among the 17 cases of lateral tarsal strip.

Table 1 Break up of the techniques

	Group A [n 28]	Group B [n 42]
No Additional Surgery	13 (46.5%)	21 (50.0%)
Additional diamond retro-punctal tarsoconjunctival Excision	15 (53.5%)	13 (31.0%)
Additional Diamond+ Two Snip	0 (0%)	4 (9.5%)
Additional Two Snip	0 (0%)	4 (9.5%)

From the review of literature following disadvantages of lid pentagon excision can be listed:

1. Lower lid notch.
2. Central lower lid trichiasis.
3. Corneal irritation from long lid margin sutures.
4. Lateral displacement of the punctum.
5. Rounding of the outer canthal angle.
6. Phimosis of palpebral aperture.
7. Removal of tear producing glands.
8. Complicated follow up for the skin and lid suture removal

Similarly the disadvantages of the lateral tarsal strip procedure can be summarised as follows:

1. Lateral orbital transient tenerness.
2. Suture granuloma or abscess.
3. Technically more demanding.

On balance it can be said that lateral tarsal strip procedure though need more surgical skill but is more successful and has got fewer complications.

Table 2 Follow up

Complication	Week 2		Week 4-6		Final	
	Group A [n 28]	*Group B [n 42]*	*Group A [n 28]*	*Group B [n 42]*	*Group A [n 28]*	*Group B [n 42]*
Notch	3 (10.7%)	0 (0%)	3 (10.7%)	0 (0%)	5 (18%)	0 (0%)
Infection	1 (3.0%)	2 (4.7%)	0 (0%)	1 (2.3%)	0 (0%)	1 (2.3%)

*Successful after diamond tarso-conjunctival excision

Table 3 Final results

Residual ectropion	Group A [n 28]	Group B [n 42]
Nil	20(71%)	38 (90%)
Mild	7(25%)	2 (5%)
Moderate	1(3.5%)	2*(5%)

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