Lateral Canthopexy in Lower Blepharoplasty: A Review Literature

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Abstract

Background: Lower eyelid malposition is a known complication of lower (lid) blepharoplasty surgery. The prevention of this complication is easier than its treatment. Over the past 10 years lot of patients have had lower blepharoplasties with a canthopexy procedure and in some cases a tarsal strip canthoplasty. The criterion for a lateral tarsal strip canthoplasty was a lid distraction distance greater than or equal to 10 mm. Lid distraction distance is the distance the eyelid can be pulled away from the globe after the initial skin incision has been made and measured with calipers. If the eyelid can be pulled away from the globe less than 10 mm, then a canthopexy is performed, which occurred in 98% of cases. Patients had lateral canthopexies regardless of age or preoperative assessment. Herein, we describe a simple method of canthopexy that can be performed on most patients having a lower blepharoplasty, to not only achieve a cosmetically superior result but also to prevent eyelid malposition or ectropion.

Conclusion: We have described a simple prophylactic canthopexy suturing technique that all surgeons performing lower blepharoplasty can do to prevent rounding or ectropion. Naturally, the more cases that are done, the more accurate will be the eyelid position and adequacy of eyelid tension achieved. Lateral tarsal strip canthoplasty is also used in more advanced cases of lid laxity.

Keywords : *Canthopexy, Blepharoplasty, Ectropion.*

Introduction

Recently there has been an upsurge of articles on the use of lateral eyelid margin tightening following lower (lid) blepharoplasty surgery to treat malposition[3,4]. Indepth articles such as those of Jelks and Jelks[1] on orbital anatomy and Flowers[2] on canthopexy are classic descriptions of ectropion and its sequelae as well as treatment. Flowers' article discusses the use of drilling holes into the lateral orbital rim for anchoring his canthopexy sutures and the use of an upper eyelid incision to feed a lower eyelid suture. Surgeons who perform lower blepharoplasty know that varying degrees of rounding of the lower eyelid can occur, from mild rounding to severe ectropion. Some surgeons have even abandoned this procedure to avoid such problems and their legal ramifications. In addition, it is not always clear preoperatively which patients will develop lower eyelid retraction and to what degree. Certainly, if the patient is older and has extreme laxity on examination such as lid snap testing, that patient is at a higher risk. However, even younger patients with seemingly normal eyelid position and a good lid snap may still demonstrate an undesirable eyelid position. One can avoid all cases, refer the patient to someone else, develop better preoperative testing and screening methods, or develop a reproducible prophylactic lid tightening procedure to use on most patients.

Most of us would like to avoid the first two options. We have not researched the third, but this may be a field ripe for investigation. I believe that the fourth option is a feasible solution. I have been performing a lateral tightening procedure in all lower eyelid blepharoplasties over the last 5 years. Herein, we describe a simple but

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reproducible procedure to tighten the lower eyelids on most patients who have had blepharoplasty. It can be modified to suit the individual patient's degree of laxity. It is safe and reasonably easy to perform. Patients whose eyelids were too loose did not have a canthopexy, but a lateral tarsal strip canthoplasty was performed (lid distraction distance greater than 10 mm).

Discussion

A lower eyelid subciliary incision is created. The lateral extension is important. A skin flap is elevated inferiorly and medially. The orbicularis oculi muscle is incised over the lateral orbital rim with sharp dissection. At this point, one can excise fat or trim orbicularis muscle as needed. McCord[5] describes orbicularis muscle flap elevation, which I have performed on midface-lifts, also described by Hestes[6]. A 5-0 Vicryl PC-1 suture is used, taking a bite of the lower eyelid tendon at a point medial to the lateral canthus, depending on the laxity of the eyelid. The more lax the eyelid, the more medial the bite. The lateral bite is into the orbital rim periosteum near the tubercle. One can feel if this bite is adequate if there is little to no "give" when the suture is pulled through. Usually just one simple stitch is required. Do not perform drill holes in the orbital rim as Flowers[2] has described. Just prior to placing the suture, the eyelid is pulled away from the globe to prove the extent of the laxity. The average distance (LDD) measured with calipers has been 8 mm. A distance of 1 cm or greater can be measured. Next, the suture is tied down and the eyelid is pulled away from the globe. Approximately 1 to 2 mm is measured; occasionally no elevation is seen. If the LDD is greater than or equal to 1 cm, perform a lateral tarsal strip canthoplasty. Or, if the eyelid position is so distorted in an inferior direction, perform a canthoplasty. The exact position of the lateral suture placement will vary. If the eyelid preoperatively is low or a more "almond" shape is desired, then a more superior position is necessary. For canthopexy procedures, have not found the need to use nonabsorbable sutures (eg, Mersilene) as we have used for other eyelid procedures, such as lateral tarsal strip canthoplasties. With the eyelid in a higher position and with increased security, one can occasionally excise more lower eyelid skin but still in a conservative fashion[7,8]. Routinely, the maximal skin excision is in the lateral triangle of skin and not the horizontal component of the eyelid margin. This allows smoother eyelid skin that patients appreciate. Early on we used one 5-0 Vicryl PC-1 suture to close the subcutaneous layer for added security as a lateral rotation flap. However, occasional bumpiness from the suture or a stitch abscess developed. The skin is then closed with 7-0 P1 continuous nylon suture (Ethilon).

Conclusion

The literature reports the post–lower blepharoplasty rate of lower eyelid malposition from 5% to 30%. Therefore, We decided to treat all patients to prevent eyelid malposition with canthopexy or canthoplasty. Thus, we have no internal controls in this study other than measuring the LDD before and after canthopexy/ canthoplasty. However, our rate of rounding now is 1%, which we believe is justification in itself to perform these procedures. In addition, the procedure provides aesthetic improvement in the patients, creating more almond-shaped eyes or preserving a beautifully natural eyelid shape in both male and female patients. Certainly, a more controlled study, randomizing patients to have a tightening procedure or not, or to only perform a tightening procedure on one eye in bilateral cases, would generate more meaningful data, but would not be ethical. Thus, I believe that most cases of lower blepharoplasties should undergo a canthopexy even if transconjunctival fat excision is the only procedure planned, and certainly if any lower eyelid skin is excised or laser skin resurfacing is planned. The canthopexy procedure has universal applicability: (1) to maintain good eyelid position in younger patients; (2) to offer more almond-shaped eyes to patients; (3) to improve the weakness inherent in older patients' lower eyelid canthal tendons; and (4) under specific circumstances, to allow more eyelid skin excision and tightening of the lower eyelid than without tendon fixation. We have described a simple prophylactic canthopexy suturing technique that all surgeons performing lower blepharoplasty can do to prevent rounding or ectropion. Naturally, the more cases that are done, the more accurate will be the eyelid position and adequacy of eyelid tension achieved. Lateral tarsal strip canthoplasty is also used in more advanced cases of lid laxity.

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References

1. Jelks GW, Jelks EB. The influence of orbital and eyelid anatomy on the palpebral aperture. Clin Plast Surg. 1991;18:183-195.
2. Flowers RS. Canthopexy as a routine blepharoplasty component. Clin Plast Surg. 1993;20:351-365.
3. McCord CD Jr. The correction of lower lid malposition following lower lid blepharoplasty. Plast Reconstr Surg. 1999;103:1036-1039.
4. Patipa M. The evaluation and management of lower eyelid retraction following cosmetic surgery. Plast Reconstr Surg. 2000;106:438-453.
5. McCord CD Jr, Codner MA, Hester TR. Redraping the inferior orbicularis arc. Plast Reconstr Surg. 1998;102:2471-2479.
6. Hestes TR. Evolution of technique of the direct transblepharoplasty approach for the correction of lower lid and midfacial surgery: maximizing results and minimizing complications in a 5-year experience. Plast Reconstr Surg. 2000;105: 393-408.
7. Borodic GE, Townsend DJ. Atlas of Eyelid Surgery. Philadelphia, Pa: WB Saunders Co; 1994.
8. Rathbun JE. Eyelid Surgery. Boston, Mass: Little Brown & Co; 1990.

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