The Pinch Blepharoplasty Revisited

Lorne K. Rosenfield, M.D.

Burlingame, Calif.

Background: The prevention of scleral show is truly one of plastic surgery's Holy Grails. This postoperative problem may be considered subtle, but it represents the most common cause of the "operated" look that we all strive to avoid. Of course, the postoperative fear of a true ectropion is all too common. These concerns, borne out in patient results following the traditional skin-muscle technique, are what drove the author to consider the "pinch" blepharoplasty.

Methods: All patients who were candidates for a lower blepharoplasty, primary or secondary, underwent the pinch blepharoplasty. Patients excluded were only those who underwent a carbon dioxide laser resurfacing of the lower eyelid, as no skin excision was planned.

Results: Of the 77 blepharoplasties performed, there were no postoperative findings of lower eyelid malposition: no taping was necessary, no significant scleral show was evident, and no ectropion was produced. There was also noticeably less bruising and swelling postoperatively with this technique. Moreover, it was apparent that the crepe-like skin at the lower eyelid was often fully effaced or improved significantly.

Conclusions: The pinch blepharoplasty has proved to be a superior approach to lower eyelid rejuvenation. This series suggests that with this technique significantly more crepe-like skin can be removed with reliably less chance of scleral show. (*Plast. Reconstr. Surg.* 115: 1405, 2005.)

One of the most desirable attributes of the plastic surgical specialty is our unflagging desire to hone our skills. The lower blepharoplasty represents a true study in this premise. The surgeon is challenged to incise into one of the most unforgiving, complex structures, correct the aesthetic deformity, and leave no surgical trace. The catalyst of this study was one of the most maddening of surgical traces: scleral show (Fig. 1). The product of this surgical series has essentially eliminated this postsurgical stigma while allowing for the excision of even more redundant skin often left behind by the skin-muscle flap approach (Fig. 2).

Patients and Methods

Patients

All patients who were candidates for a lower blepharoplasty, primary or secondary, underwent the "pinch" blepharoplasty. Patients excluded were only those who underwent a carbon dioxide laser resurfacing of the lower eyelid, as no skin excision was planned. In most instances, the surgery was conducted under local anesthesia with sedation. Seventy-seven consecutive patients were included in the study between January of 2001 and November of 2003. Follow-up was no less than 3 months. The results were considered successful if no postoperative eyelid taping was required, there was no early or late scleral show, and most of the excess eyelid skin had been resected.

Surgical Technique

The surgical technique is conducted under a conscious sedation or general anesthesia; therefore little or no local skin anesthetic is needed. This approach is critical because it allows the surgeon to both judge and pinch the

From the University of California School of Medicine, San Francisco, and Stanford School of Medicine. Received for publication March 12, 2004; revised June 16 2004.

Presented at the Annual Meeting of the American Society of Plastic Surgeons, in San Diego, California, October 28, 2003.

DOI: 10.1097/01.PRS.0000157020.67216.31

FIG. 1. A 55-year-old woman preoperatively (*above*) and 1 year after a traditional skin-muscle lower blepharoplasty demonstrating the telltale postoperative scleral show (*below*).

lower eyelid skin excess without significant distortion from local infiltration.

First, markings are made at the lower eyelid. Medially, the upper marking of the skin excision is placed within a few millimeters of the ciliary margin, progressing in a straight line laterally, purposefully leaving a triangular island of intact skin, measuring 5 mm in height, below the lateral eyelid margin (Fig. 3, *above, left*). This maneuver further discourages scleral show by lessening the purse-string like scar contracture that may occur with a curvilinear incision hugging the ciliary margin.[1]

The transconjunctival removal of excess fat is conducted before skin excision because the amount of redundant skin can potentially be less once the redundant fat is extracted. One or two 6-0 plain catgut sutures are used to close the conjunctival wound.

Then, using two fine Brown-Adson forceps, the excess skin is firmly pinched, creating a virtual "wall" of skin. Throughout this maneuver the posture of the lower eyelid is observed to ensure that there is no downward drawing of the lid margin. Should this happen, the amount of excess skin pinched can be reduced easily (Fig. 3, *above, right*). With the wall of skin standing, the eyelid is rechecked for proper position (Fig. 3, *below, left*). Straight scissors are then used to excise the "wall" of skin (Fig. 3, *below, center*), leaving the underlying orbicularis

FIG. 2. A 48-year old woman preoperatively (*above*) and 1 year after a traditional lower blepharoplasty revealing residual crepe-like skin (*below*).

muscle intact. At this point the skin margins should be just kissing. This finding is the ultimate indicator that the appropriate amount of skin has been removed (Fig. 3, *below, right*). Closure of the lower eyelid wound is performed using a running 7-0 nylon suture. Steri-Strip taping should not be necessary. Sutures are removed within 4 to 5 days. Routine eye drops and ointment are ordered and, again, usually no taping is needed during the postoperative course. It should be noted that a stitch/suture canthopexy, fashioned after Fagien's description, is performed whenever indicated.[2] The author performed all operations.

RESULTS

Of the 60 blepharoplasties performed, there were no postoperative findings of significant lower eyelid malposition. There was also noticeably less bruising and swelling postoperatively with this technique. Furthermore, it was apparent that the crepe-like skin at the lower eyelid was often fully effaced or improved significantly. Between 8 and 12 mm of skin was routinely excised from the lower eyelid (Fig. 4). Because the wound edges are meant to be

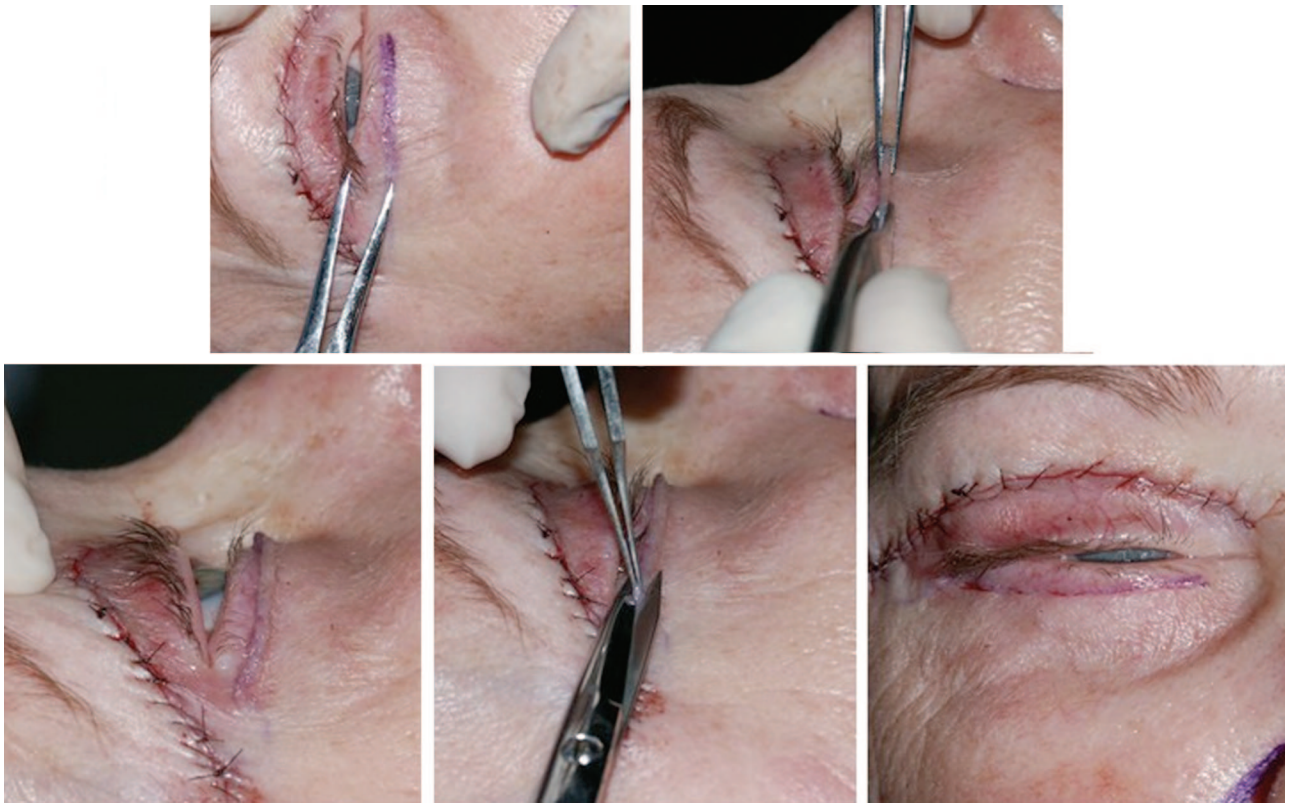

FIG. 3. (*Above, left*) Surgical marking at the lower eyelid, demonstrating the critical placement of the incision 5 mm below the lateral margin of the eyelid. (*Above, right*) Pinching of the excess lower eyelid skin with two Brown-Adson forceps while maintaining normal eyelid posture. (*Below, left*) The creation of the "wall" of excess skin after the pinch. Note the relative height of the wall indicating the significant skin excision. (*Below, center*) Excising the wall of pinched skin with a straight scissors. (*Below, right*) The lower eyelid wound seen "kissing," confirming an appropriate amount of skin resected.

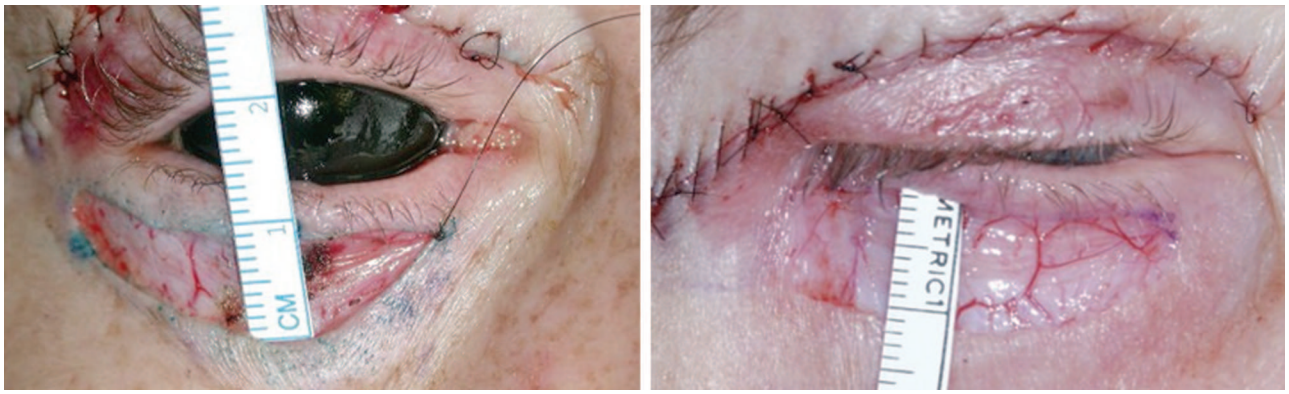

FIG. 4. Examples of the extent of skin resection possible in two different patients from 8 to 12 mm.

"kissing" after the excision of the pinched skin, the wound was opened manually without tension to demonstrate the extent of skin resection. A secondary "re-pinch" was sometimes suggested in the case of residual wrinkled skin.

At the very beginning of the series, there were two cases in which there was clear evidence of lower lid retraction after closure of the wound. In each case, there had been a large wound "gap" after the skin pinch excision, indicating possible excessive skin removal. In one instance, the replacement of the excised lower eyelid skin as a graft successfully prevented the retraction. In the other case, a concomitant pexy solved the problem. Interestingly, later in the series, it became clear that if there was a slight amount of eyelid retraction after an appropriate skin pinch, one could safely ascribe this to swelling and not intervene with additional surgery to support the eyelid.

FIG. 5. A 52-year-old patient with significant excess crepe-like skin (*above*) and 8 months after pinch blepharoplasty, demonstrating essentially complete excision of crepe-like skin with maintenance of good eyelid posture (*below*).

Only one patient, male, paradoxically required prolonged postoperative taping and eye drops, although he demonstrated only nominal scleral show. Eventually a stitch canthopexy resolved the problem. Five patients have required a further "pinch" removal of persistent excess skin, producing very satisfactory final results in all cases. In general, the incidence of unplanned "re-pinching" decreased as the series progressed.

DISCUSSION

Although the true incidence of eyelid malposition after the traditional muscle flap technique is not well documented, the plethora of articles on the subject attests to its persistence. Scleral show has been ascribed to multiple causes: excess skin removal, untreated eyelid laxity, denervation of the orbicularis muscle, and scarring of the outer or middle lid lamellae. In fact, I am impressed with how little excess skin is often excised during a skin-muscle procedure in an effort to avoid scleral show. Indeed, the prevention of scleral show is truly one of plastic surgery's Holy Grails. This postoperative problem may be considered subtle and indeed is often not even acknowledged, but it represents what could also be seen as a glaring example of the "operated" look that we all strive to avoid. Of course, the postoperative fear of a true ectropion is all too common. These concerns, borne out in patient results following the traditional skin-muscle technique, are what drove the author to consider the pinch blepharoplasty.

FIG. 6. A 49-year-old man with a negative cheek vector and prominent globe (*above*) preoperatively (*center*) and 1.5 years after pinch with intact lower eyelid shape (*below*).

There have been many efforts to reduce the incidence of eyelid malposition following traditional blepharoplasty. As documented by Zarem and Rosnick, one approach has been to forgo the skin incision entirely, thus preserving the integrity of the outer and middle eyelid lamellae, and to approach the eyelid instead through the conjunctiva only.[3] Although the incidence of scleral show may be less, there can be a greater chance of untreated eyelid skin excess. In another effort to avoid the skin incision and still "treat" the skin, skin resurfacing by way of chemical or laser, in conjunction with a transconjunctival approach, can indeed reduce the incidence of scleral show. Because of the inherent inability to exactly gauge the depth of treatment, the consistent prevention of malposition can be difficult. Also, many patients do not need or desire skin resurfacing.

Another adjunctive technique is the application of the canthopexy in the patient with a lax eyelid. There is no question that this repair can reduce the incidence of lid malposition but it may not eliminate the risk entirely. We have all seen scleral show after the traditional blepharoplasty despite the use of a canthopexy. The additional inciting factors of muscle denervation and middle lamellar scaring probably explain this dichotomy.

FIG. 7. A 54-year-old patient with asymmetry at the lower eyelids (*above*) and 9 months after surgery demonstrating a relatively balanced result (*below*).

FIG. 8. A 64-year-old woman preoperatively (*above*), 9 months after a pinch blepharoplasty, with some residual excess skin (*center*), and 6 months after "re-pinch" with remaining excess skin removed and normal eyelid posture maintained (*below*).

The idea of pinching the excess skin from the lower eyelid is not a new one. In 1973, Parkes was the first to suggest the technique.[4] This technique, which predated the transconjunctival approach, defeated some of its own benefits by having to divide the underlying orbicularis muscle to retrieve the excess fat. Then in 1992, Dinner et al. described the ultimate combination of the skin pinch with the transconjunctival approach in the "no flap"

FIG. 9. A 48-year-old patient with orbital groove particularly visible at right lower eyelid (*above*) and 1 year postoperatively with a "shortened," more youthful eyelid (*below*).

technique published, essentially, as a case report.[5] Ristow, in 1994, included the concept in his transconjunctival blepharoplasty chapter in Mimis Cohen's text.[6]

The impetus to revisit and refine this technique emanated from a personal communication with Glenn Jelks (2000). This article is the first effort in the plastic surgical literature to hone the pinch technique and report on the experience of a large series of patients.

The findings from this study suggest that the pinch blepharoplasty is capable of producing better, more consistent results than the traditional skin-muscle flap technique. The pinch approach has two distinctive advantages: more crepe-like skin can be safely removed, and there is less risk of scleral show or bowing of the eyelid (Fig. 5).

More skin can be removed with less scleral show for several reasons: there is not only less vertical traction on the eyelid margin with the absence of a heavy skin-muscle flap, but there is also less postoperative swelling, potential scarring, and laxity with the orbicularis muscle and orbital septum left intact. Also, the excess skin can be removed more completely and with greater confidence because of the inherent accuracy of the pinch technique. That is, the surgeon is able to watch in real time the effect the potential skin removal will have on the posture of the eyelid by first pinching the prospective skin for removal. These benefits were specifically relevant in the "negative vector" patient with poor cheek support, where the blepharoplasty could be performed more confidently with the pinch technique (Fig. 6). In addition, the patient with asymmetric quantities of lower eyelid skin could be addressed more accurately (Fig. 7). Also, should it be planned or necessary to remove additional skin, a simple "re-pinch" under local anesthesia could be accomplished. In effect, it is possible to excise almost all the crepe-like skin at the lower eyelid in stages with a "re-pinch" (Fig. 8). Another possible reason for the improved results is the unexpected amelioration of the eyelid-cheek groove with a more youthful ver-

FIG. 10. A 41-year-old woman with limited lower eyelid aging changes (*above*) and 2 years after a pinch blepharoplasty (*below*).

tical shortening of the eyelid, perhaps secondary to the effacing effect of the significant skin resection (Fig. 9).

This technique proved to be particularly helpful in the younger patient with minimal aesthetic deformity in whom a less invasive surgery was attractive (Fig. 10) and the moderately wrinkled patient in whom the carbon dioxide laser could be obviated (Fig. 11). Furthermore, the older patient could be treated with less chance of lid retraction (Fig. 12).

Finally, it should be made clear that any stitch canthopexy conducted in this series was planned not because of but rather despite the extent of the pinch excision of skin. As in any blepharoplasty, less skin at the lower eyelid may need to be removed as a result of the "lifting" effect of the canthopexy. As such, the canthopexy should be performed before the blepharoplasty skin resection. The same indications for the canthopexy were used for the pinch blepharoplasty as would be used for the traditional skin-muscle flap repair: treatment of a lax eyelid or a potentially "compromised" eyelid. This might include an elderly patient with a lax eyelid or the negative vector patient with poor cheek support and the patient with a down-turned lateral canthus, respectively. With this apparent variable actually a constant, one should not ascribe the improved results with the pinch blepharoplasty technique directly to the canthopexy. If the canthopexy were to prevent scleral show consistently then there would not be an apparent greater rate of scleral show following the skin-muscle flap technique performed with a similar canthopexy. Indeed, it is this very fact that encouraged the described change of blepharoplasty technique.

FIG. 11. A 59-year-old patient with moderate lower eyelid crepe-like skin excess (*above*) and 1 year postoperatively with good correction without the need for laser or other resurfacing technique (*below*).

FIG. 12. An 89-year-old man with a lax eyelid and significant aesthetic deformity (*above*) and 18 months after a pinch blepharoplasty revealing excellent eyelid position (*below*).

CONCLUSIONS

The "pinch" blepharoplasty has proved to be a superior approach to lower eyelid rejuvena-

tion. This series suggests that with this technique significantly more crepe-like skin can be removed with reliably less chance of scleral show. The pinch blepharoplasty may be particularly efficacious in the younger patient in whom less surgery is desirable, the older patient with a more lax eyelid in whom any surgical manipulation can upset eyelid posture, and the patient with excess crepe-like skin in whom significant skin resection is necessary and carbon dioxide laser treatment is not favored. The essence of the pinch blepharoplasty is to fully rejuvenate the lower eyelid without altering its functional or aesthetic shape.

Lorne K. Rosenfield, M.D.
1750 El Camino Real, Suite 405
Burlingame, Calif. 94010
lkrmd@pacbell.net

ACKNOWLEDGMENTS

The author thanks Dr. Gilbert Gradinger for his critical analysis, Dr. Richard Bloom for his intraoperative photography, and Jennifer Seeley, his scrub nurse, for her significant assistance in assembling the manuscript.

REFERENCES

1. Gradinger, G. Personal communication.
2. Fagien, S. Algorithm for canthoplasty: The lateral retinacular suspension: A simplified suture canthopexy. *Plast. Reconstr. Surg.* 103: 2010, 1999.
3. Zarem, H. A., and Rosnick, J. L. Minimizing deformities in lower eyelid blepharoplasty: The transconjunctival approach. *Clin. Plast. Surg.* 20:317: 321, 1999.
4. Parkes, M. Pinch technique for repair of cosmetic eyelid deformities. *Arch. Ophthalmol.* 89: 324, 1973.
5. Dinner, M. I., Glassman, H., and Artz, J. S. The "no flap" technique for lower-lid blepharoplasty. *Aesthetic Plast. Surg.* 16: 155, 1992.
6. Ristow, B. Transconjunctival blepharoplasty. In M. Cohen (Ed.), *Mastery of Plastic and Reconstructive Surgery,* Vol. 3, 1st Ed. Boston: Little, Brown, 1994.