

Blepharoplasty in Graves' Ophthalmopathy

Gabriele Bocchialini, MD¹ Andrea Castellani, MD¹ Umberto Zanetti, MD¹

¹Department of Maxillo-Facial Surgery, Azienda Socio Sanitaria Territoriale degli Spedali Civili di Brescia, Brescia, Lombardia, Italy

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Address for correspondence Andrea Castellani, MD, Department of Maxillo-Facial Surgery, Azienda Socio Sanitaria Territoriale degli Spedali Civili Brescia, Piazzale Spedali Civili 1, Brescia 25123, Italy (e-mail: ancastellani@libero.it).

Abstract

Keywords

- ▶ Graves' ophthalmopathy
- ▶ Graves' disease
- ▶ blepharoplasty
- ▶ esthetic

Graves' ophthalmopathy (GO) is the main extrathyroidal manifestation of Graves' disease. Many patients require rehabilitative surgery, such as orbital decompression and lipectomy, to restore function and appearance. Graves' lower eyelid retraction is a common, controversial sign and is resolved in most cases by eyelid surgery, which is very effective and incredibly simple compared with other kinds of surgeries in terms of comorbidity, surgical time, complications, and esthetic results. Here, we describe blepharoplasty in a patient with Graves' ophthalmopathy.

Issues related to Basedow's syndrome are not limited to the eye but also involve other structures, including the upper eyelid.¹ Although the pathophysiology of eyelid retraction is known,^{2,3} the only available therapy is surgery. The eyelid retraction is disabling, both esthetically and functionally. It can lead to conjunctival irritation and corneal injury and results in a continuous foreign body sensation.⁴ Several surgical procedures have been described for this,^{5–10} one of which appears to be very effective and incredibly simple compared with the others.⁴ We describe our experience with blepharoplasty, which is very effective and incredibly simple compared with other kinds of surgeries.

Technical Note

Eyelid retraction is defined as the upper eyelid rhyme at the upper limit of the corneal limbus sclerosis, instead of just covering 0.5 to 1.5 mm of the iris.¹¹ The operation can be performed under local or general anesthesia, at the discretion of the patient and surgeon, with the patient in supine position.

The area of the incision is infiltrated with 2% lidocaine containing epinephrine (1:200,000; ▶Figs. 1 and 2). The La score line is located approximately 1 cm from the eyelashes so as not to affect the tarsus. The area is marked with a ruler and a marker.

Next, using a blunt scalpel (lance no 15), the full thickness of the skin of the eyelid is dissected, except the conjunctiva, which is spared. The conjunctiva is then engraved at the temporal third of the upper eyelid (▶Figs. 3 and 4). Next,

using scissors, we proceed from the lower area in contact with the sclera, toward the surface (▶Fig. 5). The procedure is repeated at the middle third of the conjunctiva of the upper eyelid. The medial part should not be cut. The result widens the conjunctiva by 3 to 5 mm, covering just less than the width of the iris (▶Fig. 6). All this leads to a lengthening of the eyelid to the desired point, and covers at least 1 mm of the iris, which is physiological. Finally, the skin is sutured with one Novafil 6.0 suture (▶Fig. 7). The substantial differences from other interventions include simplicity of execution, reduction in surgical time, and lower complication rate (▶Fig. 8).

Discussion

In 2004, Elner¹¹ and colleagues reported their results on 50 retracted eyelids of 32 patients with a transcutaneous, graded blepharotomy technique as developed by Leo Koornneef. Their technique describes a full-thickness blepharotomy that included the skin, orbicularis muscle, levator aponeurosis, Müller's muscle, and the conjunctiva, irrespective of the amount of eyelid retraction. The incision was initiated at the junction of the lateral and central thirds of the eyelid and cut medially and laterally in a graded manner until an eyelid height of 2 to 4 mm was obtained in the sitting position. If there was temporal flare, the lateral horn of the levator aponeurosis was also incised. More than 90% of preoperative symptoms resolved or improved, and upper eyelid position, lagophthalmos, and keratopathy significantly improved. Their graded anterior blepharotomy was highly effective for treatment of eyelid retraction.¹²

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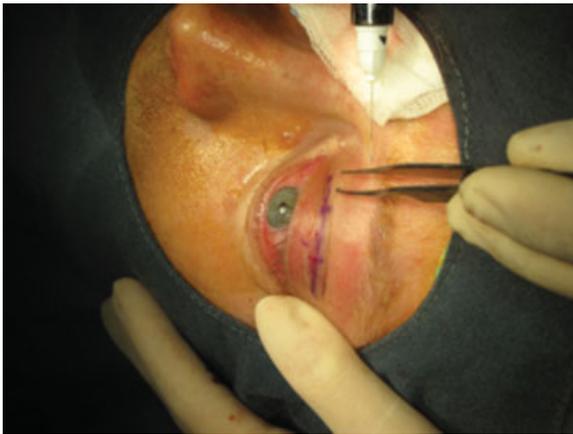


Fig. 1 Infiltration and skin incision design.

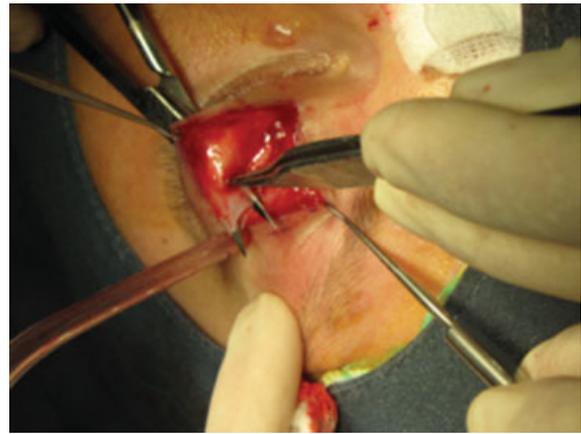


Fig. 4 Incision and umlauts of the temporal third of the conjunctiva.

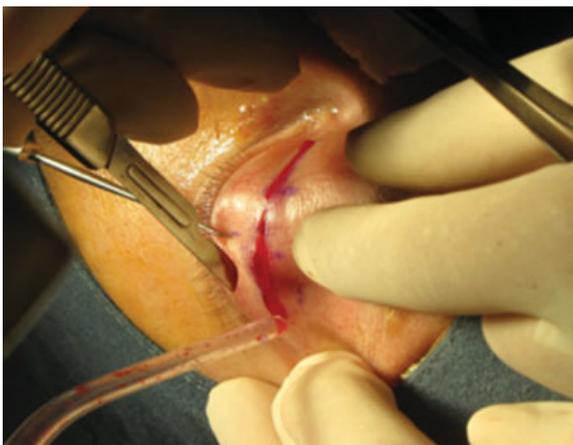


Fig. 2 Full-thickness incision sparing the conjunctiva.



Fig. 5 Umlauts in the medial third of the conjunctiva.

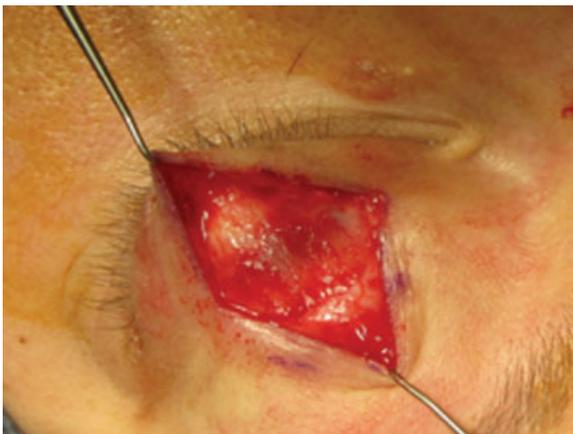


Fig. 3 Subtotal blepharotomy. Note the integrity of the conjunctiva.

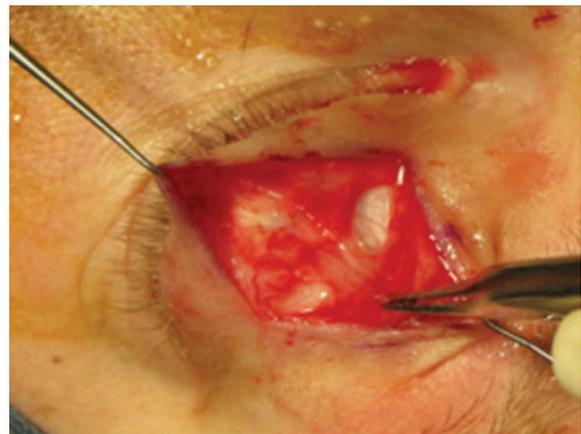


Fig. 6 Note the portion of the conjunctiva.

Intraoperative variables should be carefully taken into account. There may be some elevation of the eyelid from an anesthetized orbicularis muscle or from patient anxiety and increased sympathetic tone. There may be some depression of the eyelid from an anesthetized levator, patient squinting due to discomfort or brightness of the lights, hemorrhage or edema, or sedation. Also, to be considered are ocular dominance, the

effect of Hering's law, and increased inflammation expected postoperatively in patients with thyroid-related orbitopathy. In an attempt to adjust for the influence of these diverse factors, an overcorrection of the eyelid height by 1 to 2 mm is performed intraoperatively. An attempt to minimize these influences is important and indicated. Minimal or no sedation, and no more than 1.0 to 1.5 mL of local anesthetic, is suggested.^{12,13}



Fig. 7 Suturing the skin.

More lateral than medial lengthening of the lid is almost always necessary in the surgical management of upper lid retraction. Consideration of the degree of exophthalmos, horizontal eyelid tension, and lateral canthal angle position should be given in the surgical correction of eyelid retraction in addition to the length and tension of the eyelid retractors. The addition of a lateral canthoplasty procedure will assist in the correction of these manifestations.¹³

The addition of lateral canthoplasty, whenever indicated, helps to reduce upper eyelid retraction, especially the temporal flare component. The incidence and amount of residual temporal flare were markedly reduced in the blepharoplasty procedure described in this case study. Insufficient relaxation of the lateral canthal ligament in patients with thyroid-related orbitopathy who are proptotic and have a horizontally tight eyelid with a posteriorly placed lateral canthus will promote increased temporal flare. In addition to reducing temporal



Fig. 8 Clinical view preoperatively and postoperatively (3 years of follow-up).

flare, the lateral canthoplasty provides better coverage for the globe. This lateral canthal advancement combined with a canthoplasty procedure is an effective adjunct to retractor recession when horizontal tightness of the eyelid is present, the horizontal palpebral fissure is approximately 35 to 37 mm, or there is lateral canthal dystopia. Care must be taken not to shorten the horizontal palpebral fissure and to place the lateral canthus at the appropriate level, so as not to elevate or depress the lateral aspect of the lateral canthal angle.¹⁴

The goal is to reduce the signs and symptoms of ocular exposure while preserving the full binocular visual field.

Conclusion

The coronal approach has greatly increased the role of surgery in the treatment of Graves' ophthalmopathy. A less invasive approach leads to greater acceptance by patients, increasing the candidates for surgical therapy. Patients often require surgical treatment, not only for functional purposes, to reduce proptosis when there are deficits in eye movements and reduced intraocular tone, but also for esthetic reasons. Blepharoplasty provides good esthetic results using a less invasive technique.

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