

Lower Lid Malposition Causes and Correction



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KEYWORDS

• Lower lid malposition • Lower lid retraction • Ectropion • Entropion • Horizontal lid laxity

KEY POINTS

- Correction of lower lid malposition requires intricate understanding of the trilamellar eyelid and lower lid–midface unit for selection of appropriate surgical techniques.
- Preoperative assessment of lower lid tone and position is critical, and horizontal lid tightening procedures should be considered if any preoperative lower lid laxity is noted.
- Transcutaneous approach for lower lid blepharoplasty has a higher risk of postblepharoplasty lower lid malposition than the transconjunctival approach, thus judicious skin/muscle excision is essential.
- Ectropion and entropion are multifactorial conditions that require careful understanding of cause to choose the appropriate surgical or nonsurgical treatment.

INTRODUCTION

Malposition of the lower eyelid is a challenging condition that can result from a host of causes. The consequence of lower lid malformation can widely range from aesthetically unpleasing but functionally harmless to devastating vision loss due to ocular complications. Understanding the causes of lower lid malposition will help determine the surgical or nonsurgical approaches required to best treat the malposition. Complete knowledge of the lower eyelid anatomy and appreciation of the lower eyelid–midface unit is important in determining the physiologic factors that contribute to lower eyelid malposition. The surgical techniques aimed at treating lower lid malposition require understanding the relationship of the trilamellar lower lid and the resultant deficiencies or constraints that result in lower lid malpositioning. Additional risk factors, such as horizontal laxity of the lid, that predispose lower lid malposition must be taken into account whenever lower eyelid surgery is considered. Failure to do so can result in

postoperative lower lid retraction or ectropion that may be difficult to correct.

APPLIED ANATOMY OF THE LOWER EYELID

An intricate understanding of the complex lower lid anatomy is paramount for the treatment of lower lid malposition in eyelid surgery. The lower eyelid can be viewed as a dynamic structure suspended by a fibroligamentous sling that is supported by the medial and lateral canthal tendons, the tarsus, lower lid retractors, and orbicularis oculi muscle (**Fig. 1**). The margin of the lower eyelid sits at or just above the level of the inferior limbus, and the tarsus approximates the globe. The lateral canthal tendon sits roughly 2 to 4 mm superior to the medial canthal tendon, forming a lateral canthal angle of roughly 60°. ¹

From anterior to posterior, the lower eyelid can be divided into the anterior, middle, and posterior lamellae. The anterior lamella consists of the thinnest skin in the body with no underlying subcutaneous fat opposing the orbicularis oculi

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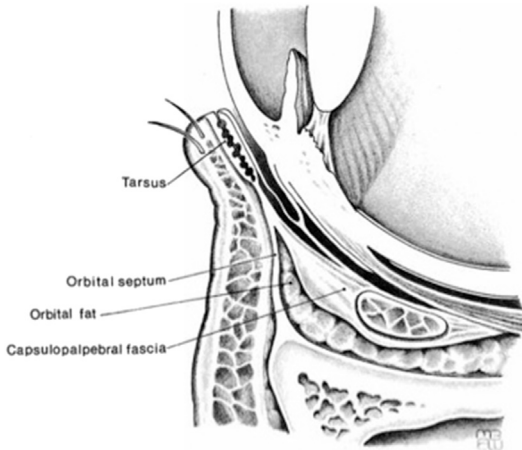


Fig. 1. Normal lower eyelid anatomy. Note the insertion of the orbital septum on the capsulopalpebral fascia. (From Patipa M. The evaluation and management of lower eyelid retraction following cosmetic surgery. *Plast Reconstr Surg* 2000;106(2):439; with permission.)

muscle. The orbicularis muscle can be further divided into the palpebral and orbital orbicularis muscle. The palpebral orbicularis muscle plays an important role in lower lid apposition to the globe and lacrimal pumping. The middle lamella refers to the orbital septum acting as a supportive layer dividing the anterior and posterior lamellae.² The posterior lamella is composed of the tarsus superiorly and the lower lid retractor, otherwise known as the capsulopalpebral fascia, inferiorly as well as the palpebral conjunctiva. The interaction between the distinct layers of the lower eyelid contributes to the overall contour and position of the lower eyelid. Understanding this trilamellar model of the lower eyelid will help surgeons recognize the numerous factors that can affect the positioning of the lower eyelid.

Understanding the anatomic relationship of the lower eyelid–midface unit is important in recognizing the role midface descent can play in lower lid malpositioning. The suborbicularis oculi fat lies inferior to the orbital rim and is contiguous with the malar fat pad. The malar fat pad is a triangular structure with the apex positioned over the malar eminence.³ As the midface ages, there is bony remodeling, descent of the malar fat pad secondary to gravity, as well as fat atrophy, which result in lower eyelid descent and malposition due to loss of support.

PREOPERATIVE ASSESSMENT FOR LOWER EYELID SURGERY

Careful and thorough preoperative assessment is crucial for proper operative planning before any

lower eyelid procedure. Preoperative evaluation should start with a thorough medical history to evaluate for risk factors for lower eyelid malposition. Medical history should include history of any ocular conditions, thyroid disease, and prior facial trauma. A detailed surgical history should also be obtained focusing on prior orbital or midface surgery and facial rejuvenation procedures. Symptoms of dry eyes, epiphora, or ocular irritation should also be noted in the examination.

Examination of the lower eyelid should start with assessment of the lower lid position in relation to the globe by measuring the relative positions of the lateral and medial canthus and the margin-reflex distance 2. Patients should be asked to close their eyelids and raise their eyebrows to observe for any lagophthalmos. If present, ocular examination may reveal conjunctival irritation or keratitis. Forced eyelid closure can assess for orbicularis strength and facial nerve function.

Assessment of Horizontal Lid Laxity

Assessment of the degree of horizontal laxity and tone of the lower eyelid can be performed through the lid distraction and snap test. The lid distraction test is performed by gently grasping and pulling the lower lid away from the globe; distraction greater than 8 mm is suggestive of excessive laxity. The snap test or lid retraction test is performed by retracting the lower eyelid inferiorly and assessing the speed and position of the recoil of the lid when released. The lower eyelid should spring back to its natural position without blinking. A slow or incomplete return to the original lid position indicates decreased tone of the orbicularis muscle and excessive laxity of the tarsoligamentous sling. Patients exhibiting signs concerning for lower lid laxity will need to have horizontal lid tightening to prevent postoperative lower lid malposition and subsequent ocular complications. In addition to assessment of lower lid laxity, evaluation of the lower lid mobility will guide the surgeon to contributing factors to lower lid malposition. Manual elevation of the lower eyelid can assess for any inferior tethering or shortening of the lower eyelid, which may require release and spacer grafting for correction.

Assessment of Globe Position

An evaluation of the globe position in relation to the inferior orbital rim on a profile view is important to assess the risk for postoperative lower lid malposition. A patient with a negative vector configuration, a globe positioned anterior to the orbital rim, is likely to have less midfacial support and is at higher risk for lower lid malpositioning after lower

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