

Eyelid malposition: lower lid entropion and ectropion

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Key words: entropion; ectropion; lid laxity; retractor disinsertion.

Summary. Correcting entropion and ectropion successfully requires knowledge of the eyelid problems, because understanding of these abnormalities is a key to planning a successful surgical procedure.

Entropion is a condition in which the eyelid margin turns inwards against the globe. It is divided into following categories: congenital and acquired, which may be involutional or cicatricial.

Ectropion is a malposition in which the lid falls away or is pulled away from its normal apposition to the globe. The condition is classified as congenital and acquired, which is divided into following categories: involutional, cicatricial, paralytic, and mechanical.

Therefore, there are some common anatomic changes for both entropion and ectropion as well as specific changes that are unique to each eyelid malposition.

Typically, instability of the eyelid is caused by either horizontal laxity or disinsertion or attenuation of the lower eyelid retractors to the inferior tarsal border, so surgical procedures should be directed at correcting the horizontal and vertical instability of the lid.

Classification, etiology, underlying anatomic changes in the lid, principles of surgical treatment of entropion and ectropion are reviewed in this article.

Understanding the anatomic abnormalities responsible for the occurrence of entropion and ectropion is a key to planning a successful surgical procedure.

Entropion is a condition in which the eyelid margin turns inwards against the globe (1). Patients become symptomatic (ocular inflammation, tearing) when corneal surface comes into contact with cilia or keratinized lid margin. It may be unilateral or bilateral and is divided into the following categories:

Congenital;

Acquired:

- involutional,
- cicatricial.

True congenital entropion is an extremely rare condition. Hypertrophic changes in the skin and underlying orbicularis muscle in the medial part of the child's eyelid are common. An excessive fold of skin and underlying tissue is called an epiblepharon, but if the lid margin inverts, the condition is a true congenital entropion.

Involutional entropion is by far the most common eyelid malposition and not surprisingly is seen in elderly patients. Aging changes (2) affect all the lid structures, and entropion results from a number of anatomic factors, including increased horizontal lid

laxity, attenuation or disinsertion of lower lid retractor, overaction of the orbicularis muscle, and smaller than age average tarsal plate (3). The entropion may be constant or may only appear intermittently, especially when patient is in downgaze or squeezes the eyelids tightly (Fig. 1).

Anything that causes a shortening or loss of the conjunctiva and posterior lamella of the eyelid can cause inward rotation of the eyelid margin and create a cicatricial entropion. It is often associated with trichiasis (misdirected eyelashes from anterior lamella), distichiasis (abnormal lashes originating from the meibomian gland orifices in the posterior lamella). In the more severe cases, it may also be associated with symblepharon (adhesion between conjunctival surfaces), ankyloblepharon (fusion of the eyelids by skin webs), and epidermalization (keratinization of the lid margin). Common conditions that may contribute to cicatricial entropion include previous eyelid surgery, chronic allergy, trauma, chemical burns, infection, trachoma, Stevens-Johnson syndrome, ocular cicatricial pemphigoid, radiation, Sjögren's syndrome, anophthalmia, etc. (4–7).

Ectropion is a malposition of the eyelid in which the lid falls away or is pulled away from its normal



Fig. 1. Involutional entropion (4)

apposition to the globe (1, 5, 8).

The condition may be unilateral, bilateral and classified as:

Congenital;

Acquired:

- involutional,
- cicatricial,
- paralytic,
- mechanical (9).

Congenital ectropion rarely occurs as an isolated anomaly and usually is associated with the congenital eyelid syndrome. It is caused by a vertical shortage of skin and, if severe, may give rise to chronic epiphora and exposure keratitis (10).

Involutional ectropion is caused by laxity of all the lid tissues. When the lid margin begins to evert,

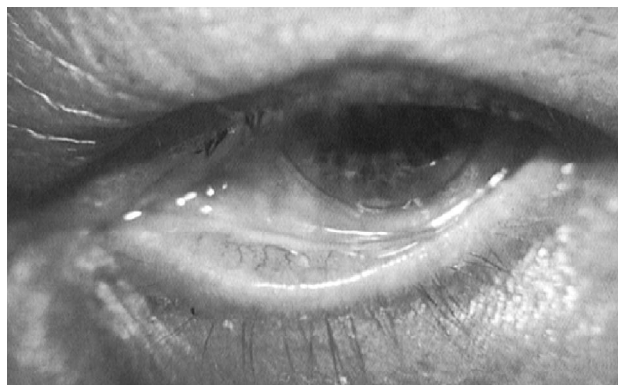


Fig. 2. Involutional ectropion (12)

the conjunctiva becomes exposed, leading to secondary inflammatory changes and thickening of the tarsus which mechanically increases the ectropion (2, 3, 11) (Fig. 2).

The most common etiologic factor in cicatricial ectropion is shortening of the anterior lamella. Causes include mechanical, chemical, or thermal injury, skin diseases, excessive skin removal during lower lid blepharoplasty (4, 13) (Fig. 3).

Paralytic ectropion occurs as a result of facial nerve palsy (e.g., Bell's palsy, status post acoustic neuroma resection) (4). Shortly after the onset of paralysis of the orbicularis muscle, the patient will complain of epiphora. Exposure keratitis with reflex tearing secondary to lagophthalmos and failure of the lacrimal pump mechanism are responsible for this early symptom. Lower motor neuron lesions of the facial nerve may produce paralysis of the musculature of the forehead with resultant ptosis of the brow on the affected side. Eventually, the patient may develop an unsightly appearance from marked elongation of

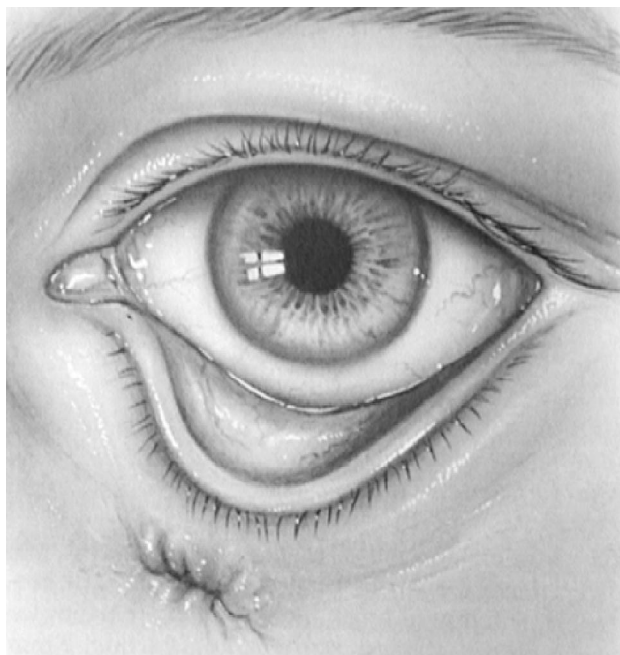


Fig. 3. Cicatricial ectropion (14)



Fig. 4. Mechanical ectropion (12)

the lid and sagging of facial tissues with associated functional problems such as incomplete ocular closure, tearing, sagging, and poor control of the mouth (5).

Large tumors or cysts near the lid margin, which causes the lid margin to roll out because of its mass, acute proptosis of the globe with chemosis of the conjunctiva, eyelid and periocular edema, which mechanically push the lid margin away from the surface of the globe, significant herniated orbital fat, traction on the lower eyelid skinned from spectacles can mechanically cause an ectropion (4, 11) (Fig. 4).

Correcting entropion and ectropion successfully requires knowledge of the abnormalities that cause these types of eyelid problems. Typically, instability of the eyelid is caused by either horizontal laxity at the lateral canthus (or occasionally the medial canthus)

or disinsertion or attenuation of the lower eyelid retractors to the inferior tarsal border. Surgery to correct these malpositions of the lower lid must address the underlying anatomic factors responsible for the malposition (15). So surgical procedures should be directed at correcting the horizontal and vertical instability of the lid by medial and lateral canthal tendon stabilization (16, 17), tarsal strip procedure or other horizontal lid shortening procedures, everting or inverting sutures, plication or reinsertion of the lower lid retractors, hard palate or skin grafting, tumor excision, or combined techniques (8, 9, 15, 18–25). Learning and understanding these conditions and factors which cause lid instability and their management will lead to selecting the proper procedure and most importantly, a successful outcome for the patient (4).

Netaisyklinga vokų padėtis: apatinio voko įvirtimas ir išvirtimas

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Raktažodžiai: įvirtimas, išvirtimas, voko laisvumas, retractorų atsidalijimas.

Santrauka. Norint sėkmingai atlikti netaisyklingos vokų padėties korekciją, reikia žinoti priežastis, sukeliančias tuos pokyčius. Nustačius priežastis, galima parinkti tinkamą chirurginio gydymo metodą.

Voko krašto įvirtimas gali būti įgimtas ir įgytas, pastarasis dar skirstomas į involiucinį ir randinį.

Išvirtimas – tai anomalija, kai vokas nepriglunda prie akies obuolio arba išvirsta į išorę. Priežastys – įgimtos ir įgytos. Be involiucinio ir randinio įgytam išvirtimui dar priskiriamas paralyžinis ir mechaninis voko išvirtimas. Taigi yra kai kurie bendrieji anatomiciniai pokyčiai, dėl kurių pakinta voko padėtis, vokas įvirsta arba išvirsta, tačiau egzistuoja ir specifinės priežastys, sukeliančios tik kurią nors vieną anomaliją.

Voko nestabilumą sukelia arba horizontalus voko laisvumas, arba apatinio voko retractorų atsidalijimas nuo voko kremzlės apatinio krašto. Horizontalus ar vertikalus voko nestabilumas koreguojamas chirurgiškai. Teisingai įvertinus šio nestabilumo priežastis, galima parinkti tinkamą chirurginio gydymo metodiką.

Straipsnyje apžvelgiama voko įvirtimo ir išvirtimo klasifikacija, etiologija, voko anatomijos pokyčiai, sukeliantys padėties pokyčius, bei chirurginio gydymo būdai.

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