

# Eyelid Disorders

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BLEPHAROSPASM → see p. Mov21 >>	
EYELID RECONSTRUCTION → see p. 2215 >>	

- normal upper eyelid margin is located 1-1.5 mm below superior limbus.
- eyelid position is quantified by **margin-reflex distance (MRD)** - MRD<sub>1</sub> for upper lid, MRD<sub>2</sub> for lower lid. see p. D1eye >>

## LID EDEMA

### ETIOLOGY

#### 1. Allergies:

- a) **acute type** (*seasonal allergic lid edema*) - hypersensitivity to airborne pollens or direct hand-to-eyelid application of pollens.
- b) **chronic type** - *contact sensitivity* to topical drugs (e.g. atropine, neomycin), cosmetics, metals (e.g. nickel); *perennial allergic lid edema* - hypersensitivity to molds or to animal or dust mite dander.

2. **Trichinosis** - chronic bilateral lid edema (resembles allergic type); fever and other systemic symptoms may not be present initially; eosinophilia > 10% is characteristic.

3. **Hereditary angioedema** - acute lid edema.

### TREATMENT

For allergic lid edema:

- 1) removal of offending cause.
- 2) **cold compresses** over closed lids may speed resolution.
- 3) **corticosteroid** ointments (for not more than 7 days) if swelling persists > 24 h.

## BLEPHARITIS

- inflammation of **lid margins**.

### ETIOLOGY

**Ulcerative blepharitis** - acute bacterial infection (usually staphylococcal).

**Seborrheic blepharitis** - chronic blepharitis; associated with **seborrheic dermatitis** (*Pityrosporum ovale*).

**Meibomian gland dysfunction (meibomitis)** - chronic blepharitis caused by abnormal meibomian gland secretions; often associated with **acne rosacea**.

### CLINICAL FEATURES

- 1) on lid margins: itching, burning, redness (red-rimmed eyelids), thickening, scales & *crusts clinging to lashes*.
- 2) lid edema
- 3) conjunctival irritation (lacrimation, photophobia).



Source of picture: "Online Journal of Ophthalmology" >>

- **ulcerative blepharitis**: small pustules in lash follicles → break down → **shallow marginal ulcers** with **dry adherent crusts** (leave bleeding surface when removed; during sleep, lids become glued together by dried secretions); may result in loss of eyelashes and eyelid scarring.
- **seborrheic blepharitis**: **greasy, easily removable scales** on lid margins; secondary bacterial colonization occurs on scales.
- **meibomian gland dysfunction**: meibomian gland **orifice inspissated** (plugged) with hard waxy plug.

Patients with seborrheic blepharitis and meibomian gland dysfunction often have:

- secondary keratitis sicca.
- history of repeated styes and chalazia.
- exacerbations that are uncomfortable & unsightly but do not result in central corneal scarring or visual loss.

### TREATMENT

**Ulcerative blepharitis** - **antibiotic** ointment (e.g. bacitracin/polymyxin B or gentamicin or sulfacetamide for 7-10 d).

**Seborrheic blepharitis - eyelid hygiene** (scrubbing lid margin daily with cotton swab dipped in dilute baby shampoo); occasionally, antibiotic ointment is indicated.

**Meibomian gland dysfunction** - normalizing meibomian gland secretions:

- 1) **doxycycline** tapered over 3-4 mo.
- 2) **warm compresses** (melt waxy plugs and allow trapped secretions to flow out).

## HORDEOLUM

- **acute localized pyogenic infection** of eyelid gland:

- a) **ciliary (Moll) gland** (**EXTERNAL HORDEOLUM, STYE**) - modified apocrine *sudoriferous glands* that open into follicles of eyelashes.
- b) **Zeis gland** (**EXTERNAL HORDEOLUM, STYE**) - *sebaceous glands* that open into follicles of eyelashes.
- c) **tarsal (meibomian) gland** (**INTERNAL HORDEOLUM, MEIBOMIAN STYE, ACUTE CHALAZION**) - *sebaceous glands* embedded in tarsal plate, discharging at lid edge near posterior border.

- usually **staphylococcal**.
- *polymorphonuclear leucocytes* and necrosis with pustule formation.
- often secondary to blepharitis.
- recurrence is common.

### CLINICAL FEATURES

**EXTERNAL HORDEOLUM** – superficial, at eyelash base: begins with pain, redness, tenderness, foreign-body sensation → small, round, tender area of induration → small yellowish spot in center of induration (pointing) → abscess soon ruptures with pus discharge and pain relief.

**INTERNAL HORDEOLUM** (very rare) – deeper, more severe.

- conjunctival lid side shows small yellow elevation (site of affected gland).
- abscess points on conjunctival lid side (sometimes points through skin); *spontaneous rupture is rare!!!*
- recurrence is common.



Source of picture: "Online Journal of Ophthalmology" >>

### TREATMENT

- suppuration may be aborted in early stages by systemic antibiotics (e.g. dicloxacillin or erythromycin); however, because of minor nature and short natural history, *antibiotics are not indicated*.

*Topical antibiotics are ineffective!*

- pointing is hastened by **hot compresses** (applied for 10 min qid).
- hordeolum will rupture on its own; however, to speed resolution, hordeolum can be **incised** (as soon as pointing occurs) and its **contents expressed**.

Incision direction:

- in conjunctiva – vertical
- in skin – horizontal.

## CHALAZION (MEIBOMIAN CYST)

- **chronic granulomatous inflammation (lipogranuloma)** of meibomian gland.

- due to duct occlusion (often after internal hordeolum) - lipid breakdown products, possibly from bacterial enzymes, leak into surrounding tissue and incite granulomatous chronic inflammation (with *lymphocytes* and *lipid-laden macrophages* [Touton-type giant cells]).
- contrary to popular opinion, research has not shown that *eyelid cosmetic products* either cause or aggravate condition.
- hormonal influences on sebaceous secretion and viscosity (androgenic hormones increase sebum viscosity) may explain clustering at **puberty** and during **pregnancy**.

### CLINICAL FEATURES

- **onset** - indistinguishable from stye; more common on upper lid.
- **after few days** → **painless, slowly growing round mass in lid**; seen *subconjunctivally* as red-gray mass; overlying skin can be moved loosely.
- large lesions have been reported to cause astigmatism or hyperopia resulting from central corneal flattening.
- **acute inflammatory exacerbation** (internal hordeolum) can result in anterior rupture (beneath skin) or posteriorly (through conjunctiva); it never points to lid margin (unlike stye).
- sebaceous dysfunction and obstruction elsewhere (e.g. comedones, oily face) are the only associated features.



Source of picture: "Online Journal of Ophthalmology" >>

**TREATMENT**

- most disappear after few months (**hot\* compresses** for 10-15 min qid may hasten resolution);  
\*as hot as can be tolerated – melting lipid secretions.
- early in condition, blocked glandular orifices may be opened by vigorous **lid massage** between 2 cotton wool buds at slit lamp (local anesthesia may be beneficial);  
self-administered technique is also available - called "**4 fingers times 10 massage**"  
(at conclusion of bath / shower, patient warms hands under hot water; using 1 drop of baby shampoo, patient works up lather, and then places index finger over closed lids at lid margin and vigorously massages lid back and forth 10 times; then repeats procedure with middle, ring, and little fingers).
- if there is no resolution after 6 wk:
  - a) **incision & curettage**; after procedure, cauterization with *phenol* or *trichloroacetic acid* may prevent recurrence of small chalazia.
  - b) **intralesional corticosteroid** (e.g. triamcinolone diacetate).
    - if associated with *ACNE ROSACEA*, 6 month course of low dose **TETRACYCLINES** may help sebaceous glands to produce shorter-chain fatty acids that are less likely to block gland orifices.

N.B. recurrent chalazia, especially if recur despite previous successful drainage in the same location, must be considered *sebaceous cell carcinoma!*

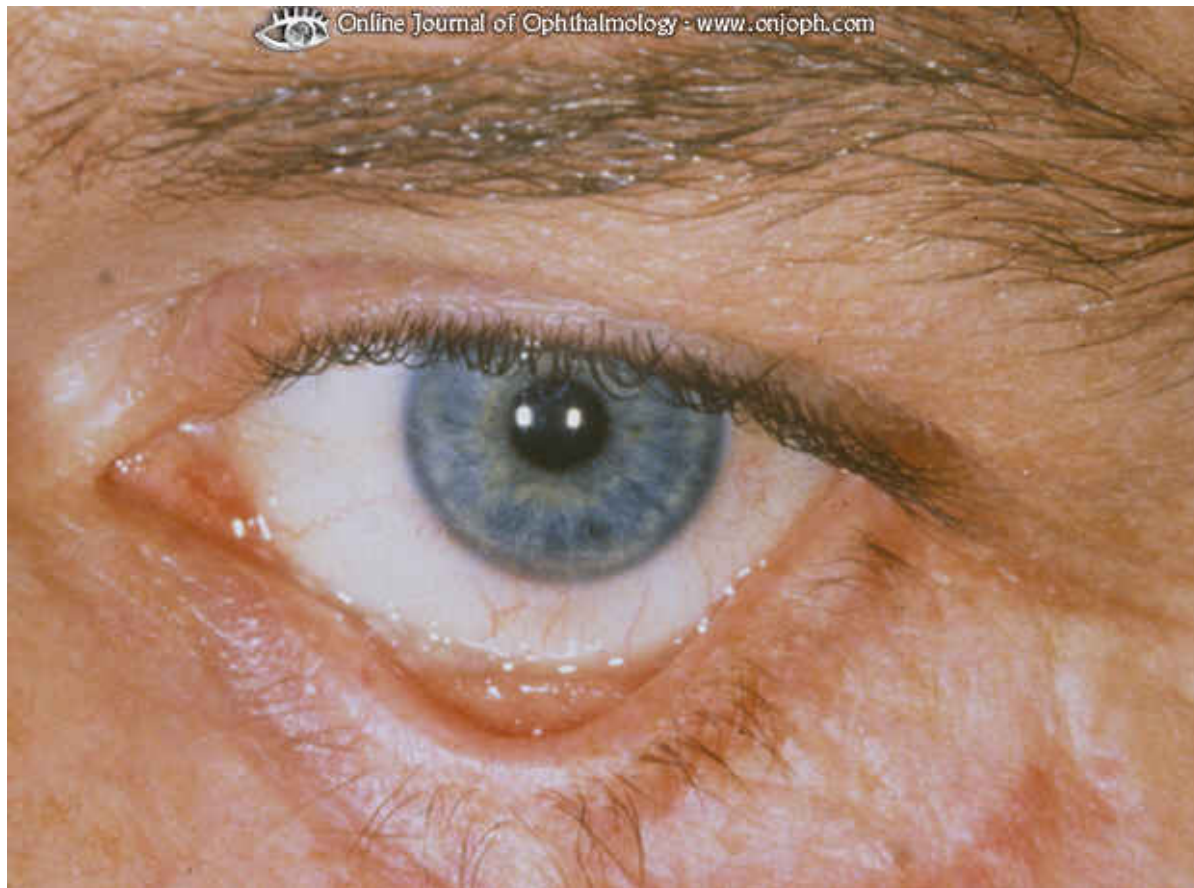
**ENTROPION AND ECTROPION**

Both conditions, if persistent and bothersome, are **best treated surgically!**

**ECTROPION** - eyelid *eversion*

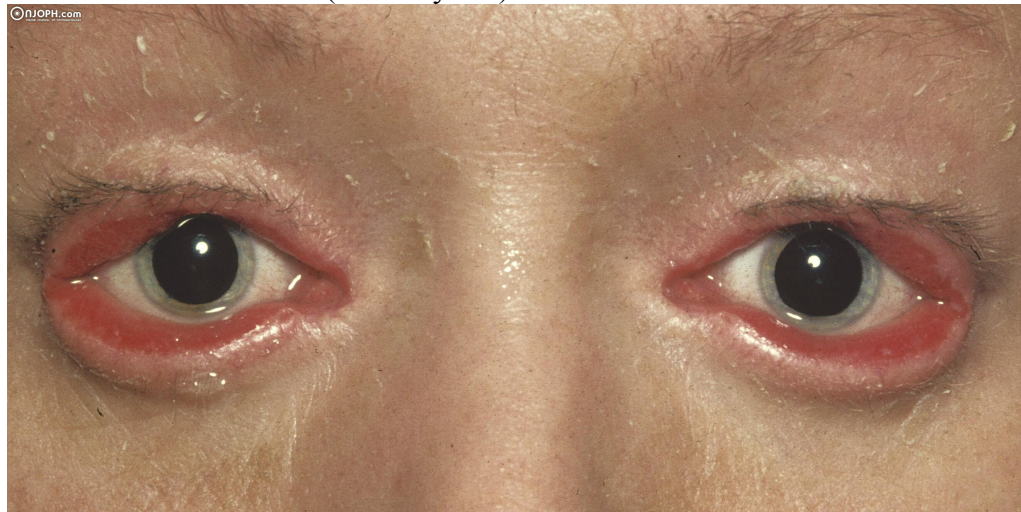
- results from:
  - 1) tissue relaxation with aging (LID-LAXITY ECTROPION)
  - 2) scar (CICATRICAL ECTROPION)
  - 3) CN7 palsy (PARALYTIC ECTROPION)
  - 4) ichthyosis (CONGENITAL ECTROPION).
- usually involves lower lid.
- **poor tear drainage** through nasolacrimal system → epiphora.
- **conjunctival / corneal exposure** → redness, irritation, keratinization of palpebral conjunctiva, corneal ulceration.

## CICATRICAL ECTROPION:



Source of picture: "Online Journal of Ophthalmology" >>

## CONGENITAL ECTROPION (in ichthyosis):



Source of picture: "Online Journal of Ophthalmology" >>

**TREATMENT**

- lubrication, moisture shields.
- cicatricial ectropion - digital massage to stretch scar, steroid injection into scar.
- paralytic ectropion - taping lateral canthal skin supertemporally provides temporary relief; external paste-on upper lid weights.

**Entropion** - eyelid *inversion*

1. **Acute spastic entropion** - orbicularis oculi spasm due to ocular irritation.
  2. **Involucional entropion** - horizontal laxity of medial and/or lateral canthal tendons, involution of orbital fat (involucional enophthalmos with unstable eyelid position).
  3. **Cicatricial entropion** - scar tissue of conjunctiva; digital eversion of eyelid margin is difficult!
  4. **Congenital entropion** (very rare) - dysgenesis of lower eyelid retractors, structural defects in tarsal plate also (tarsal kink syndrome).
- causes irritation (lashes rub against globe) → corneal ulceration and scarring.



Source of picture: "Online Journal of Ophthalmology" >>

#### TREATMENT

- ocular lubrication (tear preparations).
- spastic entropion - eyelid hygiene, antibiotics, corticosteroids, botulinum toxin.

### TUMORS

**XANTHELASMA** - common, benign subcutaneous deposit, with yellow-white, flat plaques of lipid material; associated with hypercholesterolemia; do not need be removed (except for cosmetic reasons).

**BASAL CELL CARCINOMA** frequently occurs at lid margins, at inner canthus, and on upper cheek.

- other malignant tumors are less common; tumors simulating chronic blepharitis or chronic chalazion should be biopsied rather than treated for a long time.

### LID RETRACTION, LAGOPHTHALMOS

Whenever lid retraction is suspected, *exclude contralateral ptosis!*

- etiology:
  - 1) **thyroid-associated** ophthalmopathy see p. 2744 >>
  - 2) **PARINAUD** (dorsal midbrain) syndrome see p. Eye64 >>
  - 3) prior lid **surgery / trauma**.
- differentiate from CN7 palsy.

**LAGOPHTHALMOS** - condition in which complete closure of eyelids over eyeball is difficult or impossible.

- etiology: exophthalmos, mechanical obstacles, CN7 palsy.
- lubricate eyes with liquid paraffin ointment.
- **corneal ulceration** may develop; H: temporary tarsorrhaphy.

### (BLEPHARO)PTOSIS

Etiology:

- 1) weakening of levator aponeurosis due to **age / trauma**.
- 2) **hypotropia** (causes *PSEUDOPTOSIS*).
- 3) **Horner syndrome** – both  $MRD_1$  &  $MRD_2$  ↓
- 4) **CN3 palsy** –  $MRD_1$  ↓ with unchanged  $MRD_2$
- 5) **myasthenia gravis**; ptosis is transient;
  - **curtain sign** (not specific for myasthenia gravis) - elevation of one lid causes contralateral lid to droop (explained by Hering law);
  - **COGAN lid twitch** - patient is asked to quickly look upward from downward position → lid overelevates and then droops.

BIBLIOGRAPHY for ch. "Ophthalmology" → follow this [LINK](#) >>