Lec. 2 | Eye lid

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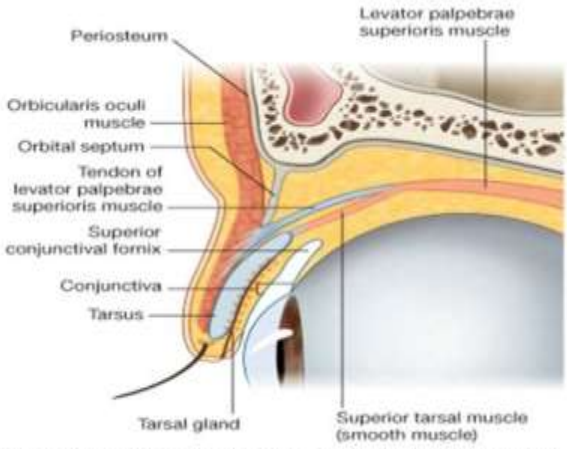
Anatomical Hint



Blepharitis (Eyelid Inflammation)

Definition: Blepharitis is a common eyelid condition that presents as a chronic and / or recurrent inflammation with scaling of the eyelid margins.

Etiology

- **Staphylococci (most common causative pathogen)**
- Other infective etiologies: viral (e.g., herpes simplex or varicella zoster) or parasitic (demodicosis or phthiriasis palpebrarum).
- Allergic reactions or anatomical obstruction of sebaceous glands

Classification

- **Anterior blepharitis:** inflammation of the anterior margin of the eyelids, involving the skin, eyelashes, and follicles.
- **Posterior blepharitis:** inflammation of the posterior margin of the eyelids; associated with meibomian gland dysfunction and/or obstruction (meibomitis) as well as abnormalities of the tarsal plate.

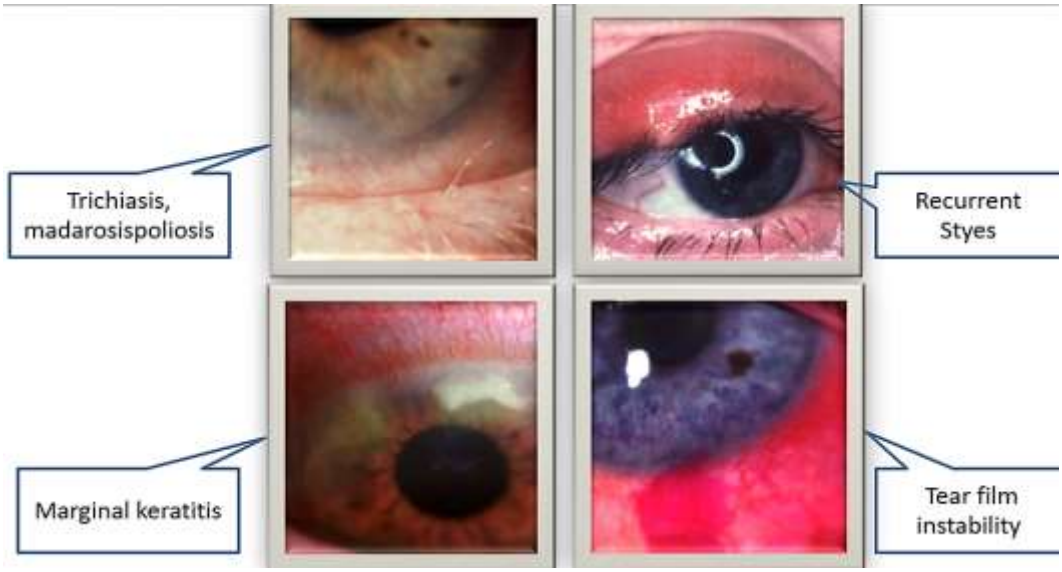
Classification of Blepharitis

1. **Anterior**
   - Staphylococcal
   - Seborrhoeic
2. **Posterior**
   - Meibomianitis
   - Meibomian gland dysfunction (MGD)
3. **Mixed**

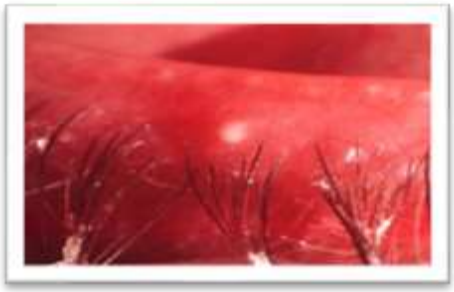
Staphylococcal blepharitis

- Chronic irritation worse in mornings.
- Scales around base of lashes (collarettes).
- Hyperaemia and telangiectasia of anterior lid margin.
- Scarring and hypertrophy if longstanding.

Complications of staphylococcal blepharitis

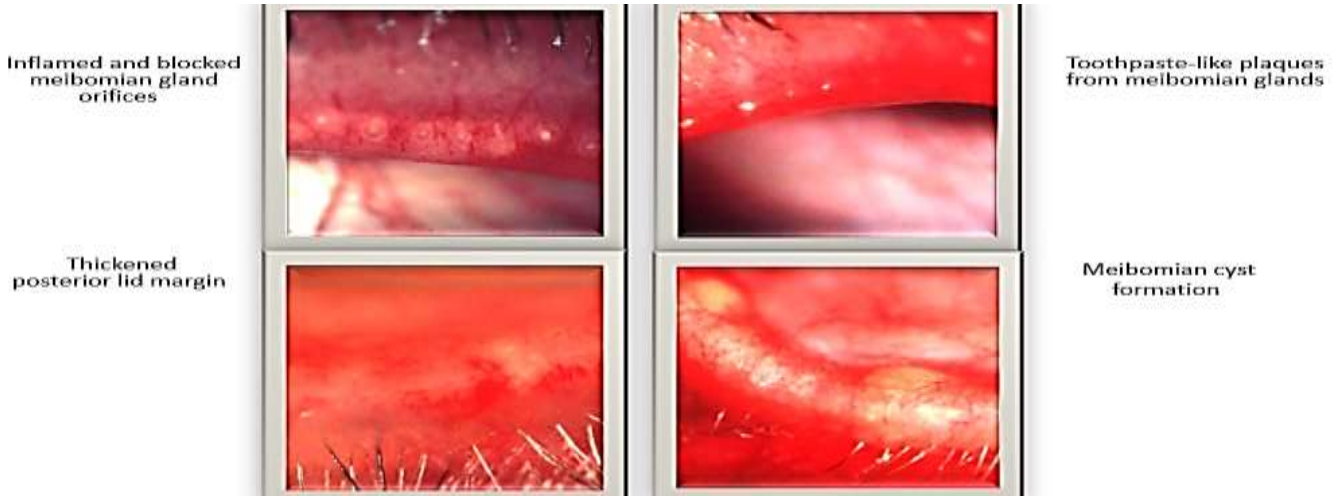


Seborrhoeic blepharitis



- Shiny anterior lid margin
- Hyperaemia of lid margin
- Greasy scales
- Lashes stuck together

Meibomianitis



Meibomian gland dysfunction

- Oil globules over meibomian gland orifices

- Oily and foamy tear film

Clinical features

- Chronic or recurrent red, swollen eyelids and irregular eyelid margins
- Crusty, scaly plaques, and/or oily deposits on the eyelid margin and eyelashes
  - Crusting usually represents seborrheic disease.
  - A ringlike collection around the eyelashes (collarette) with ulceration upon removal (ulcerative blepharitis) is typical of staphylococcal disease.
- Eye irritation and visual abnormalities
  - (Pain, Itchiness, Foreign body sensation, watering of the eye, Photophobia, blurred vision)

Diagnostics: clinical diagnosis

Complications

- Chalazion, conjunctivitis, ectropion, entropion, Trichiasis (abnormally directed lashes).

Treatment

- Eyelid margin hygiene
- Topical antibiotics / weak steroids.
- Oral Doxycycline in MGD

Chalazion (meibomian gland lipogranuloma)

Definition: focal granulomatous swelling of the sebaceous glands without necrosis, which is primarily caused by obstruction of the glands.

Etiology:

- Poor eyelid hygiene, stress, or immunodeficiency
- ***Systemic conditions:*** tuberculosis, rosacea, seborrheic dermatitis
- ***Local anatomical abnormalities***: complications of **chronic blepharitis**, malignancy, eyelid trauma, or post-surgery

Signs of chalazion (meibomian cyst)

- Painless, roundish, firm lesion within tarsal plate
- May rupture through conjunctiva and cause granuloma

Clinical features:

- **Chronic** (slow-growing), firm, painless **rubbery nodule** on the eyelid
- Heaviness of the eyelid
- Can cause visual disturbances, if large enough

Diagnostics

- Usually a clinical diagnosis
- Everting the eyelid may allow for better visualization of the lesion.
- **Biopsy:** for a persistent or recurrent chalazion (may indicate an underlying carcinoma of the eyelid)

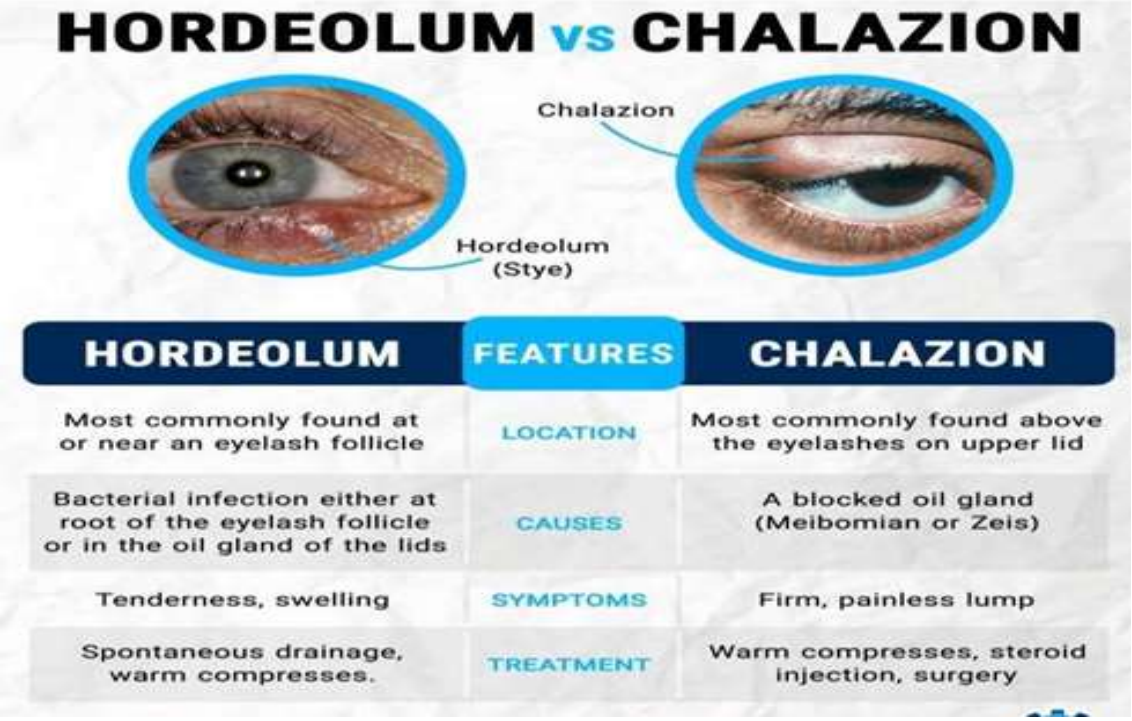
Treatment

- **Conservative**: wait and watch, warm compresses, and eyelid hygiene
- **In secondary infection:** local and systemic antibiotics, e.g., tetracycline, doxycycline, minocycline.
- **In case of persistent chalazion**
  - Incision and curettage
  - Intralesional steroids

Persistent or recurrent chalazion may be a sign of a sebaceous carcinoma (a carcinoma of the meibomian gland). Chalazion may also clinically resemble a basal cell carcinoma!

Injection of local anaesthetic | Insertion of clamp | Incision and curettage

Stye (Hordeolum) vs. Chalazion



Ptosis (Drooping of the upper eyelid)

Classification

A. Congenital

B. Acquired

1. Neurogenic
2. Myogenic
3. Aponeurotic
4. Mechanical

C. Pseudoptosis

TYPES

1.CONGENITAL PTOSIS

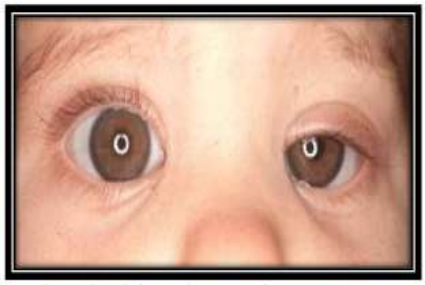
- Simple congenital ptosis
- Blepharophimosis syndrome
- Marcus Gunn jaw winking ptosis (congenital synkinetic ptosis)

Congenital ptosis

- **Myogenic**
  - Most common cause of congenital ptosis
  - Malformation of the levator palpebrae superioris muscle
- **Neurogenic**: defective innervation of the upper eyelid (e.g. congenital third cranial nerve palsy, congenital Horner syndrome)
- **Aponeurotic**: defective insertion of the aponeurosis into the anterior surface of the eyelids.

Simple congenital ptosis

- Developmental dystrophy of levator muscle
- Occasionally associated with weakness of superior rectus


Unilateral or bilateral ptosis of varying severity


In downgaze ptotic eyelid is slightly higher


Blepharophimosis syndrome


Frequent absence of upper lid crease


Usually poor levator function


Marcus Gunn jaw-winking

2.ACQUIRED PTOSIS

- Neurogenic- 3rd nerve palsy, horner syndrome.
- Myogenic- myasthenia gravis, Myotonic dystrophy.
- Aponeurotic- involutional, post-surgical
- Mechanical- tumour, swelling.

Left third nerve palsy

Horner syndrome

- Caused by oculosympathetic palsy
- Usually unilateral mild ptosis and miosis
- Normal pupillary reactions
- Slight elevation of lower lid
- Iris hypochromia if congenital or longstanding
- Anhydrosis if lesion is below superior cervical ganglion

Ocular myasthenia

- Insidious, bilateral but asymmetrical
- Worse with fatigue and in upgaze
- Ptotic lid may show 'twitch' and 'hop' signs
- Intermittent diplopia

Ptosis / Myasthenia Gravis

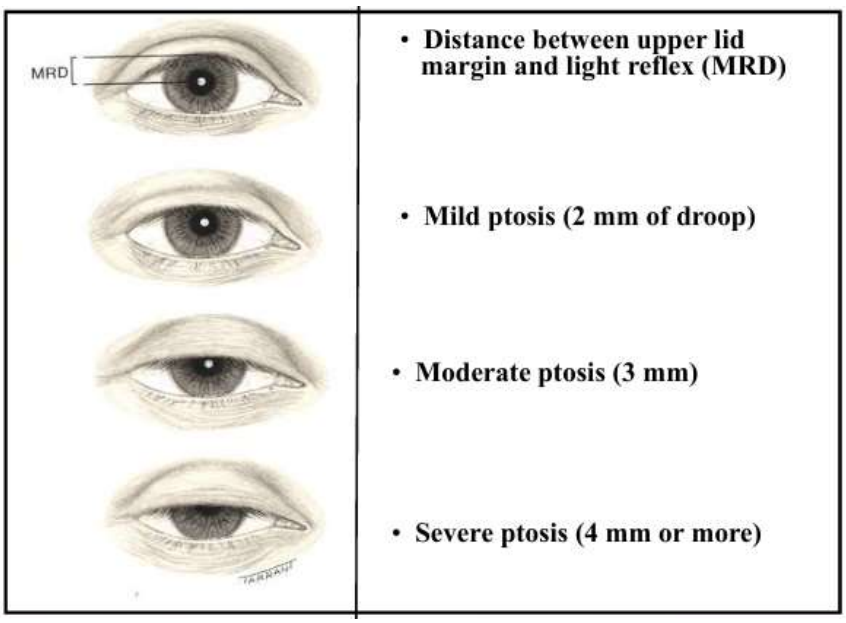
Aponeurotic ptosis

- Weakness of levator aponeurosis
- ***Causes***: involutional, postoperative and blepharochalasis

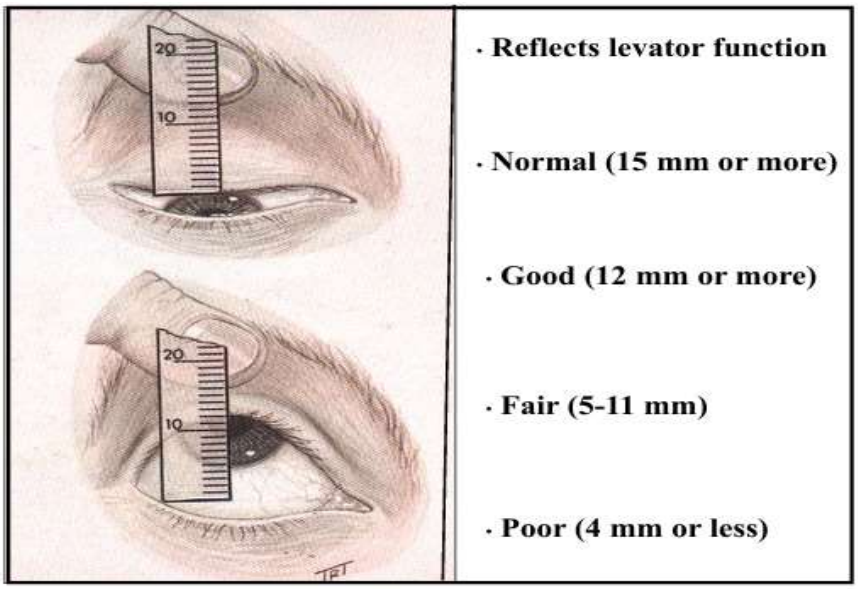
Mechanical ptosis

Causes

Marginal reflex distance



Levator function test



Important tests: (Extraocular motility + pupillary examination)

Complications:

» Congenital ptosis: Amblyopia if severe

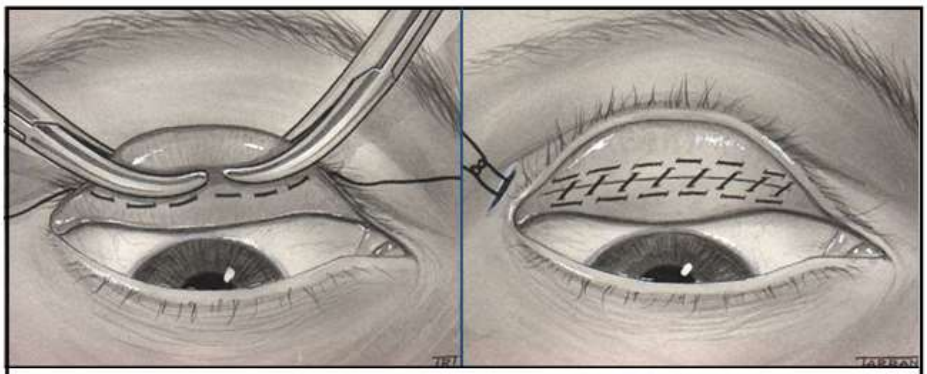
» Decreased visual field

Treatment

- **Treatment of the underlying condition**
- **Surgical, Indications:**
  - » Congenital ptosis esp. moderate & severe.
  - » Abnormal head alignment

Fasanella-Servat procedure

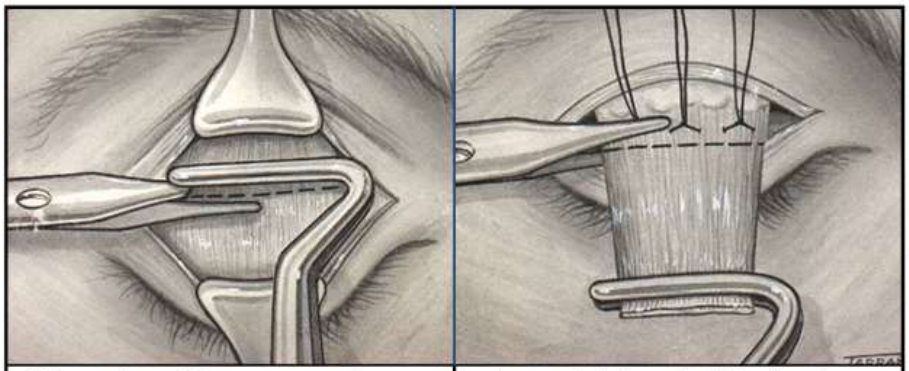
- Indicated for mild ptosis with good levator function



Excision of upper border of tarsus, lower border of Müller muscle and overlying conjunctiva

Levator resection

- Indicated for any ptosis provided levator function is at least 5 mm

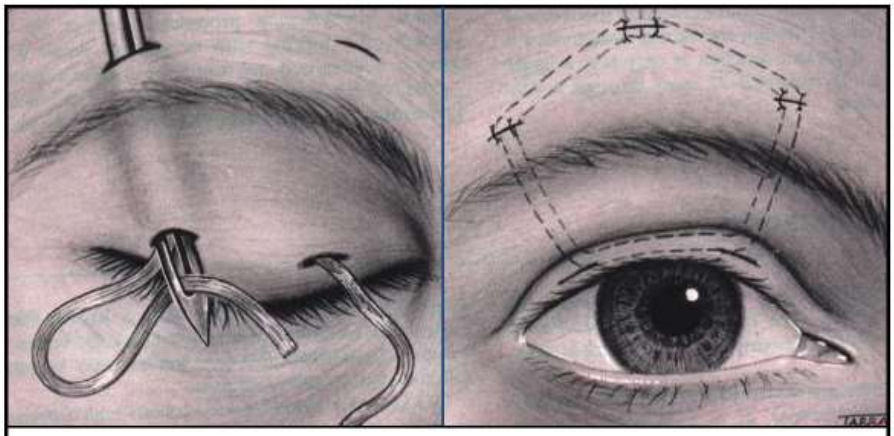


Shortening of levator complex

Amount determined by levator function and severity of ptosis

Frontalis-Brow suspension

- Severe ptosis with poor levator function (4 mm or less)
- Marcus Gunn jaw-winking syndrome



Attachment of tarsus to frontalis muscle with sling

Ectropion

Definition: Rolling-out (Outward folding) of the eyelid (usually the lower eyelid).

Etiology

- **Involutional**: due to age-related laxity of the tarsal plates and canthal tendons
- **Cicatricial ectropion**: due to trauma, inflammation, burns, surgery, cancer
- **Paralytic ectropion:** paresis of the orbicularis oculi muscle due to facial nerve palsy
- **Mechanical ectropion** (Mass, Conjunctival edema)

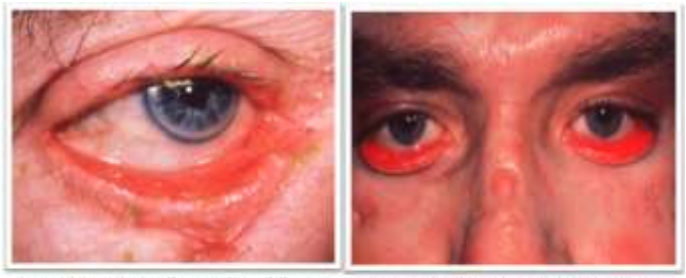
Involutional Ectropion

- Affects lower lid of elderly patients
- May cause chronic conjunctival inflammation and thickening

Cicatricial ectropion

Causes

- Contracture of skin pulling lid away from globe
- Unilateral or bilateral, depending on cause



Unilateral ectropion due to traumatic scarring

Bilateral ectropion due to severe dermatitis

Paralytic ectropion

Caused by facial nerve palsy which, if severe, may give rise to the following:

Exposure keratopathy caused by lagophthalmos

Epiphora caused by combination of:

- Failure of lacrimal pump mechanism
- Increase in tear production resulting from corneal exposure

Mechanical ectropion

Example: ***Mechanical lid eversion by tumour***

Treatment :

- Removal of the cause, if possible
- Correction of significant horizontal lid laxity

Presentation

- Conjunctival hyperemia, Blurred vision, Photophobia, Lagophthalmos and Epiphora.

Treatment

- ***Treatment of the underlying condition***
- ***Palliative***
  - Artificial tears and ointments
  - Eye patch
- ***Surgical***
  - ***Indications*** (Cosmetic reasons, Recurrent keratitis, and Chronic epiphora)
  - ***Operations:***
    - Horizontal lid shortening
    - Lateral tarsal strip (canthal sling)
    - Medial canthoplasty

Entropion

Definition: Rolling-in (inward folding) of the eyelid margin

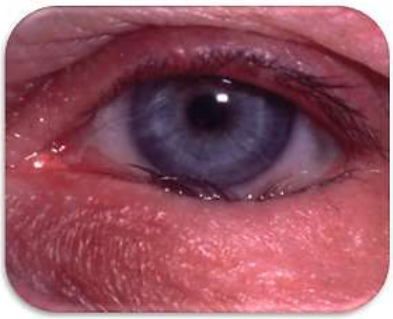
Etiology

- **Congenital entropion**
  - ✓ **Lower eyelid**
    - » Most common type of congenital entropion
  - ✓ **Upper eyelid**: due to horizontal laxity of the medial or lateral canthal tendons or facial nerve palsy
- **Involutional entropion**
  - » Most common type of entropion
  - » Frequency increases with age.
- **Spastic entropion**
  - » Usually accompanies involutional entropion
- **Cicatricial entropion**
  - » Due to conjunctival scarring (e.g., due to trachoma, ocular pemphigoid, infection, trauma)

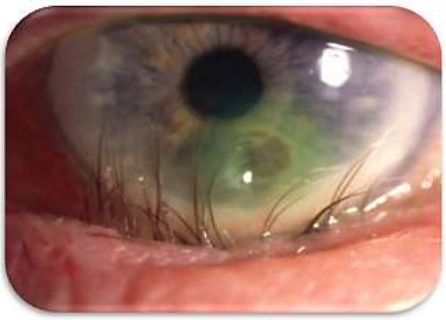
Congenital entropion

- Very rare - not to be confused with epiblepharon
- Inturning of entire lower eyelid and lashes
- Absence of lower lid crease
- When skin is pulled down lid also pulls away from globe
- Does not resolve spontaneously

Involutional entropion



Affects lower lid because upper lid has wider tarsus and is more stable



If longstanding may result in corneal ulceration

Cicatricial entropion

- Severe scarring of palpebral conjunctiva which pulls lid margin towards globe
- May affect lower or upper eyelid
- Causes include cicatrizing conjunctivitis, trachoma and chemical burns

Presentation

- **Congenital entropion:** (Asymptomatic / photosensitivity / Blepharospasm)
- **Acquired entropion**
  - Trichiasis
  - Ciliary injection
  - Foreign body sensation
  - Epiphora
  - blepharospasm

Complications

- Keratitis
- Trichiasis
- Visual loss
- corneal scarring

Treatment

- Treatment of the underlying condition
- Congenital entropion typically does not require treatment and often involutes spontaneously.
- **Conservative:**
  - ✓ Artificial tears and ointments
  - ✓ **Soft contact lenses**: protect the cornea from injury
  - ✓ **Skin tape:** used to hold the lid in place
  - ✓ **Botulinum toxin application on the orbicularis muscle:** in case of spastic entropion
  - ✓ **Removal of the eyelashes:** in case of trichiasis
- **Surgical treatment**
  - ✓ ***Indications***
    - » Recurrent erosions
    - » Recurrent infections
    - » Uncontrolled eye inflammation
  - ✓ ***Operations***:
    - » Involutional entropion: (Transverse everting sutures / Wies procedure)
    - » Cicatricial entropion: Tarsal fracture procedure (Transverse tarsotomy)

Short Essay

1) What is clinical features of MGD?
2) Classification of blepharitis?
3) Complications of staphylococcus blepharities?
4) Definition of chalazion & mention its etiology and signs?
5) Classification of Ptosis?
6) Define ectropion & mention its etiology?

MCQ

1) The most common causative pathogen of blepharitis is

a. Herpes simplex
b. varicella zoster
c. Staphylococci
d. Phthiriasis palpebrarum

2) the most common cause of congenital ptosis is:

a. myogenic
b. Neurogenic
c. Aponeurotic
d. All of the above

3) **Causes of acquired ptosis:**
   a. 3 rd nerve palsy
   b. myathinia gravis
   c. Aponeurotic
   d. Myotonic dystrophy
   e. All of the above
4) **Manifestation of third nerve palsy including the following except:**
   a. Sever unilateral ptosis &defective adduction
   b. Defective elevation
   c. Defective depression
   d. defective abduction
5) **Horner syndrome**
   a. Manifesting by iris hyperchromia if congenital or long standing
   b. caused by oculosympathatic palsy
   c. Manifesting by abnormal pupillary reactions
   d. manifesting by unilateral sever ptosis and mydriasis
6) **MRD in moderate ptosis is :**
   a. 1 mm
   b. 2 mm
   c. 3 mm
   d. 4 m
7) **Mechanical ptosis can be cauesed by**
   a. Dermatochalisis
   b. sever lid odema
   c. anterior orbital mass
   d. All of the above
8) **Congenital entropion is**
   a. Very common
   b. Resolve spontaneously
   c. There is absence of lower lid crease
   d. When the skin is pulled down ,lid also pulls away from globe
9) **Indications of surgical treatment of entropion include**
   a. Recurrent erosions
   b. Recurrent infection
   c. Uncontrolled eye inflammation
   d. All of the above
10) **Frontalis –Brow suspension is recommended in**
   a. Mild ptosis
   b. sever ptosis
   c. Marcus –Gun syndrome
   d. a & b

e. b & c