Eyelid Abnormalities

ENTROPION

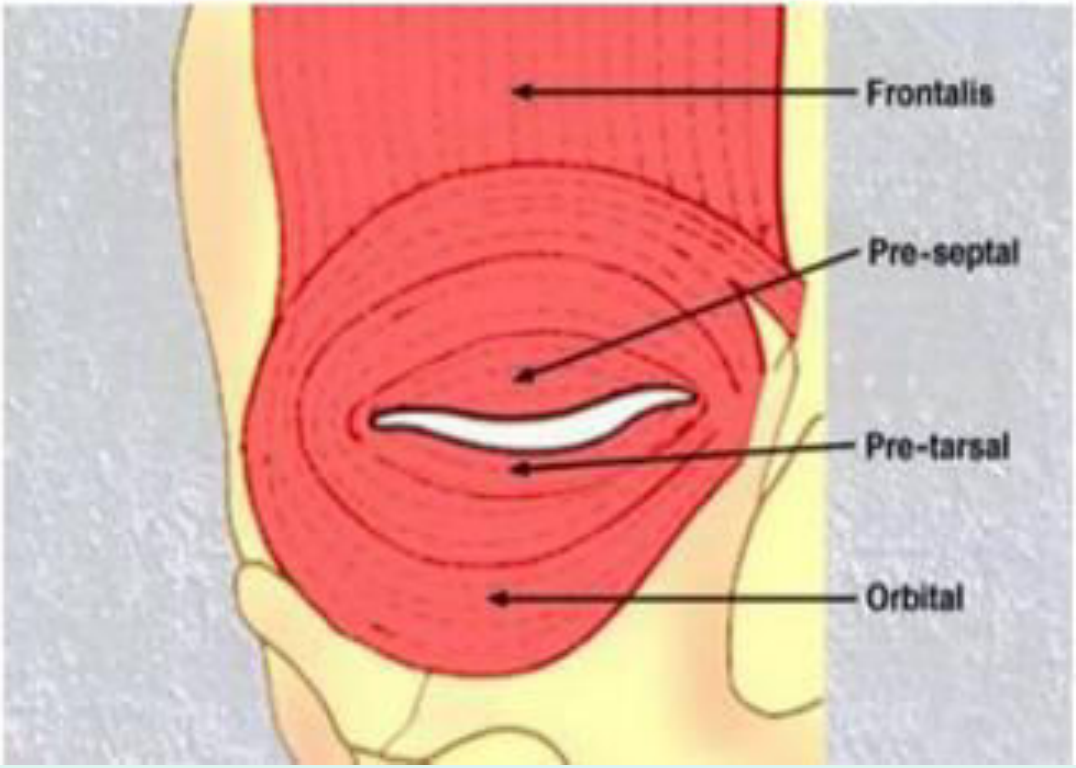
ECTROPION

Presentation lay out

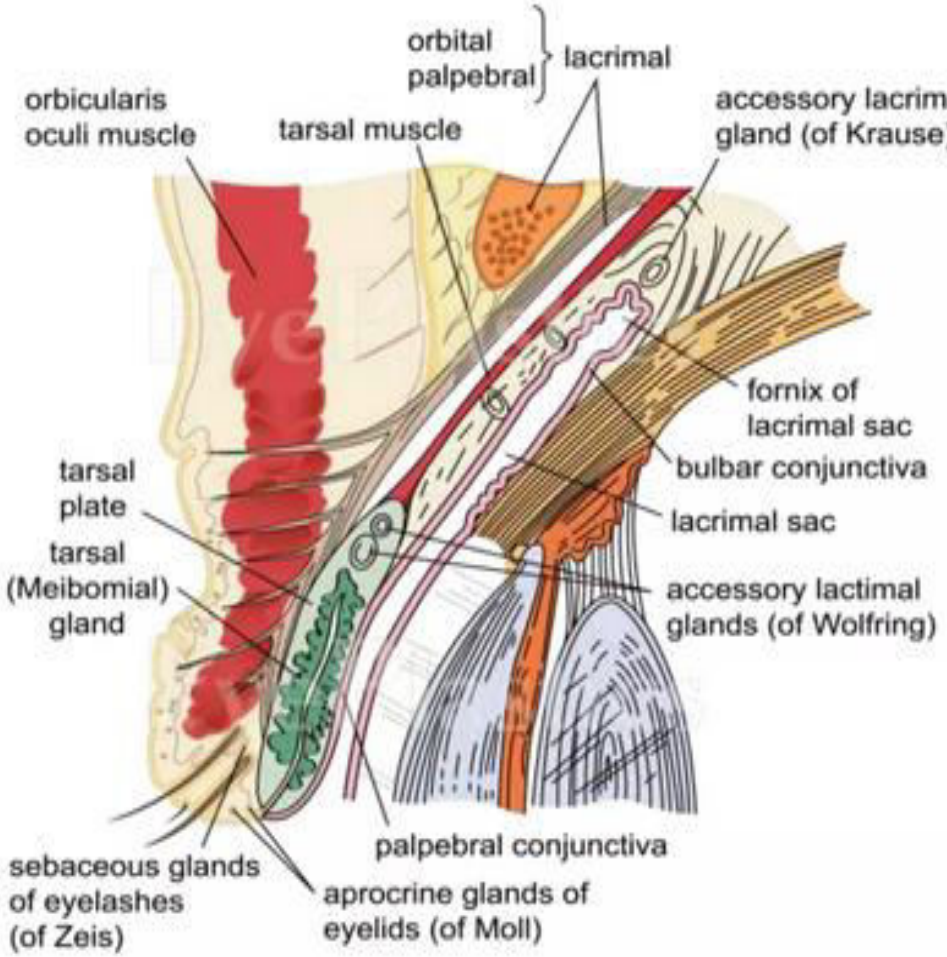
- ***Anatomy of eyelids***
- ***Factors responsible for maintaining lower eyelid position***
- ***Definition***
- ***Classification***
- ***Etiology***
- ***Clinical features***
- ***Management***
- ***References***

ANATOMY OF EYELIDS:-

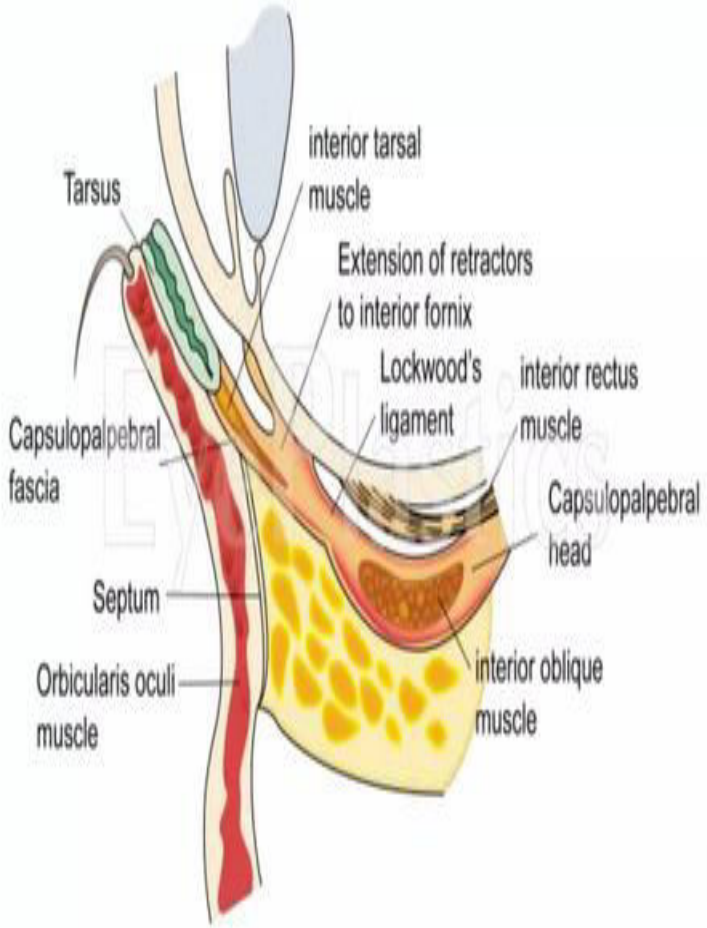
- SKIN- thin,stretches with age & there is usually excess available for a full thickness skin graft.
- ORBICULARIS MUSCLE:-



- ***UPPER EYELID ANATOMY:-***



LOWER EYLID ANATOMY:-



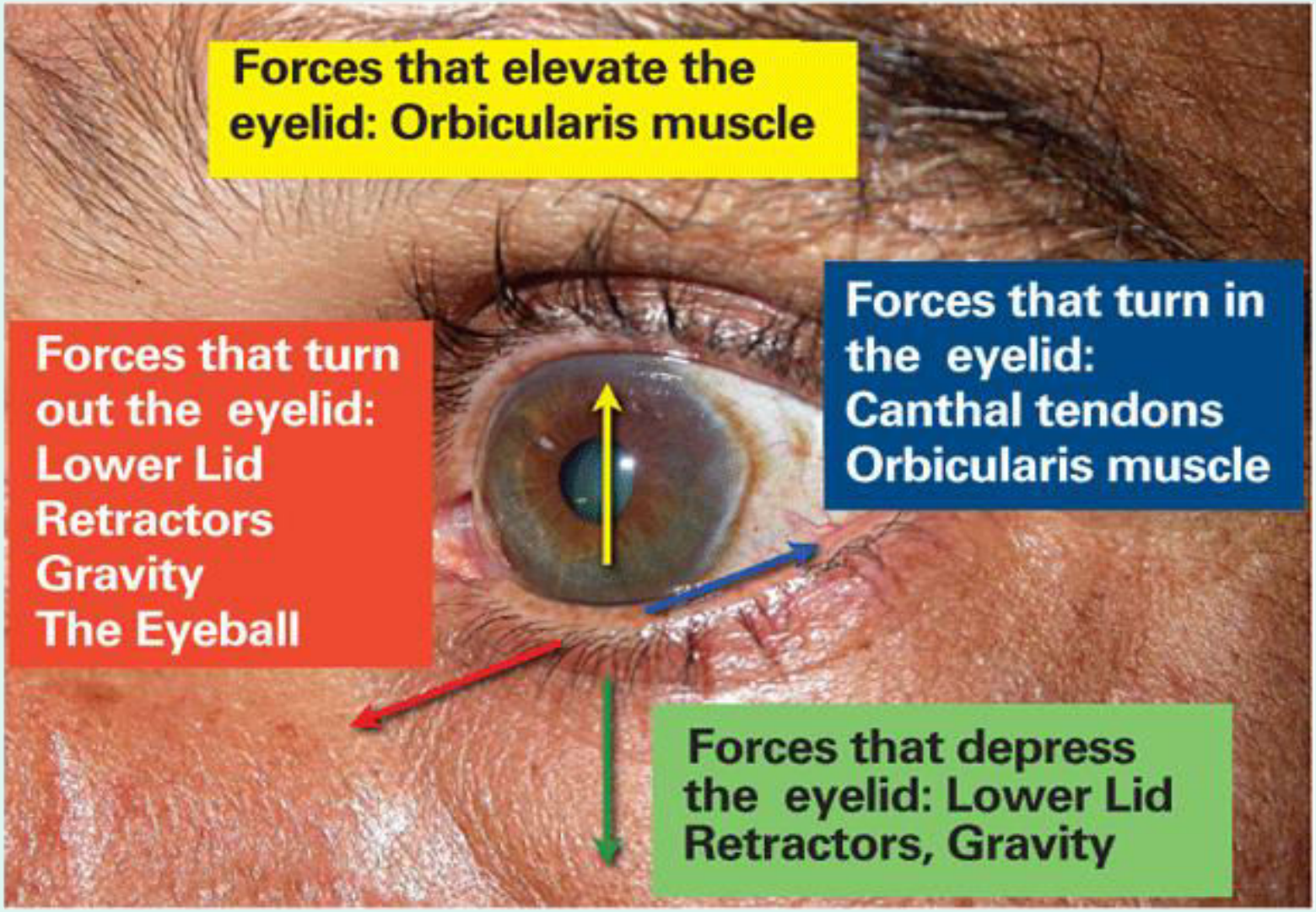
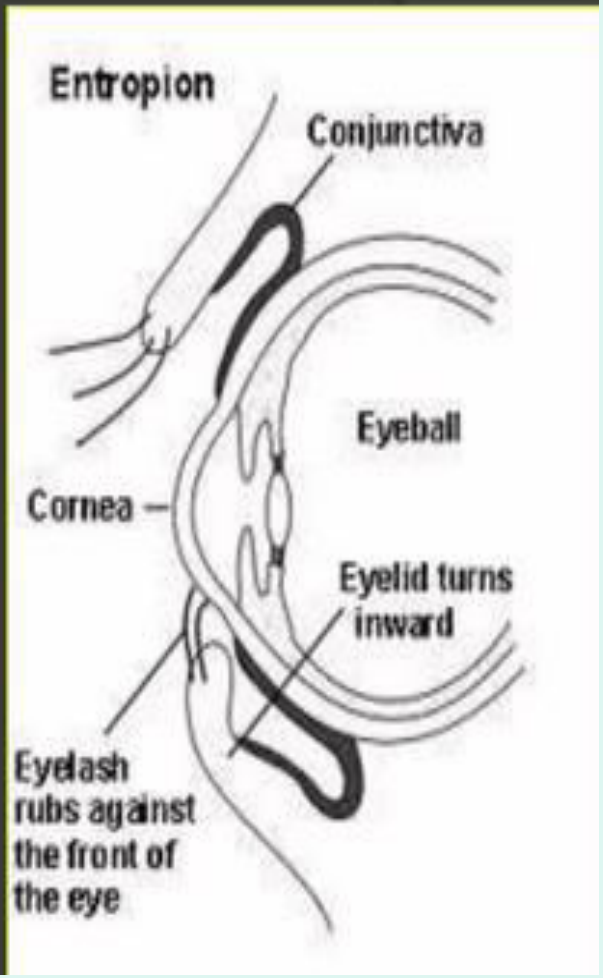


Figure 1. Forces acting on the lower eyelid to maintain normal position.


entropion

Definition

- Rolling inwards of lid margin is called entropion
- Produced by disparity in length and tone between anterior skin muscle,and posterior tarsoconjunctival laminae of eyelid.



Classification

- INVOLUTIONAL
- CICATRICIAL
- SPASTIC
- CONGENITAL

Clinical picture

SYMPTOMS

- Foreign body sensation
- Photophobia
- Irritation
- Pain
- Lacrimation

Clinical picture

SIGNS

- Lid margin is **inturned**
- Depending on degree of in turning,dividing into three grades.
- **Grade 1** only posterior lid border is inrolled.
- **Grade 2** inturning of intermarginal strip.
- **Grade 3** whole lid margin including anterior border inturned

Clinical picture

- **COMPLICATIONS**
- Recurrent corneal abrasions
- Superficial corneal opacities
- Corneal vascularisation
- Non healing corneal ulcer

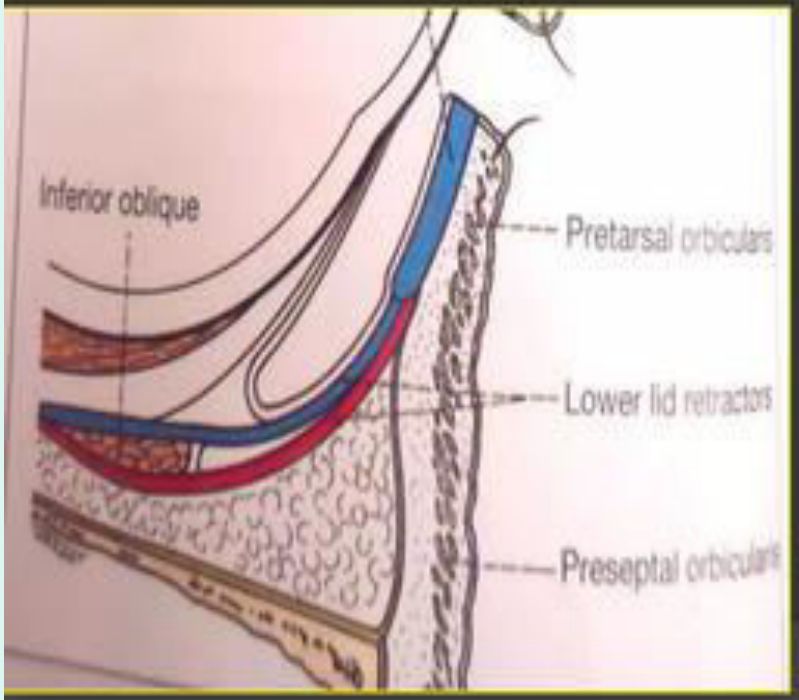
Involutional entropion

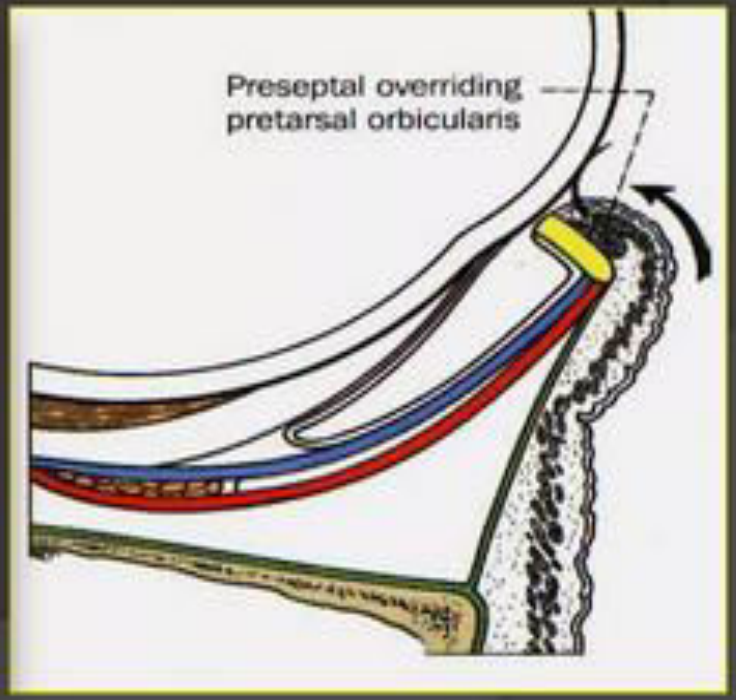
- Age related entropion.
- Affects mainly the lower eye lid.

Pathogenesis

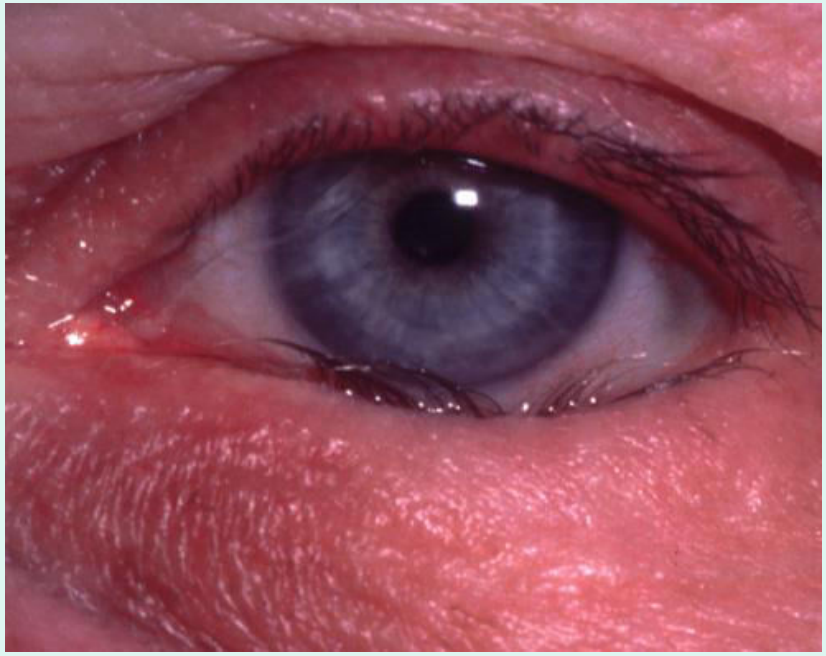
- Age related degeneration of elastic fibrous tissue within the eyelid results in following
- **HORIZONTAL LID LAXITY** caused by stretching of canthal tendons and tarsal plate.

- **VERTICAL LID INSTABILITY** caused by disinsertion of lower eyelid retractors.
- **OVERRIDING** of the pretarsal by the preseptal orbicularis





Involutional entropion



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

If longstanding may result in corneal ulceration

Treatment

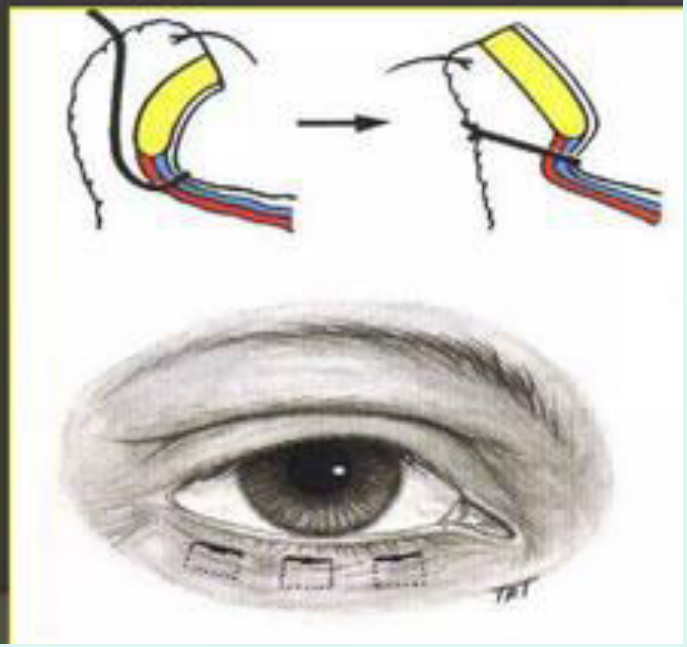
MEDICAL

- Lubricants
- Taping
- Soft bandage contact lenses
- Adhesive tape-pulling the skin outward with strip of adhesive tape
- injection of botulinum toxin

SURGERY

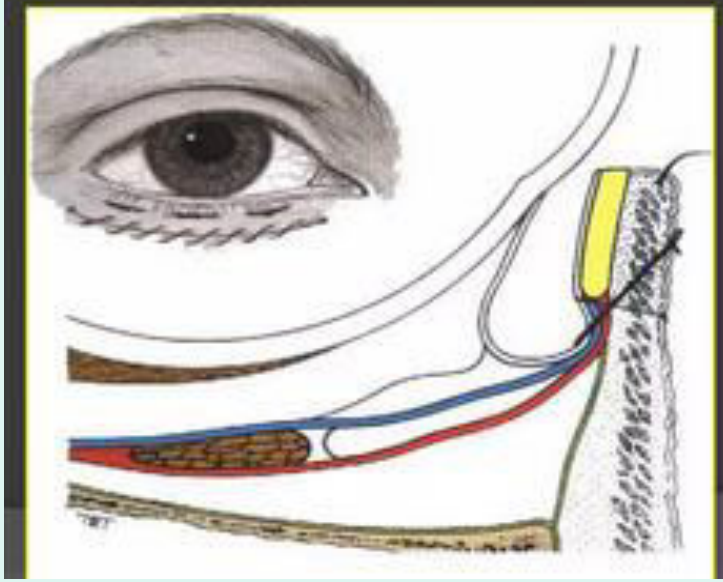
TRANSVERSE EVERTING SUTURES

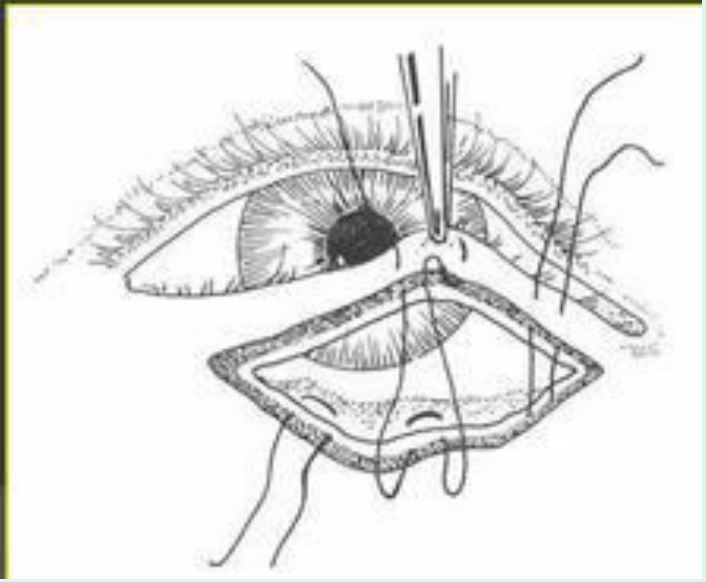
- Prevents overriding and provide temporary corrrection lasting several months.



WEIS PROCEDURE

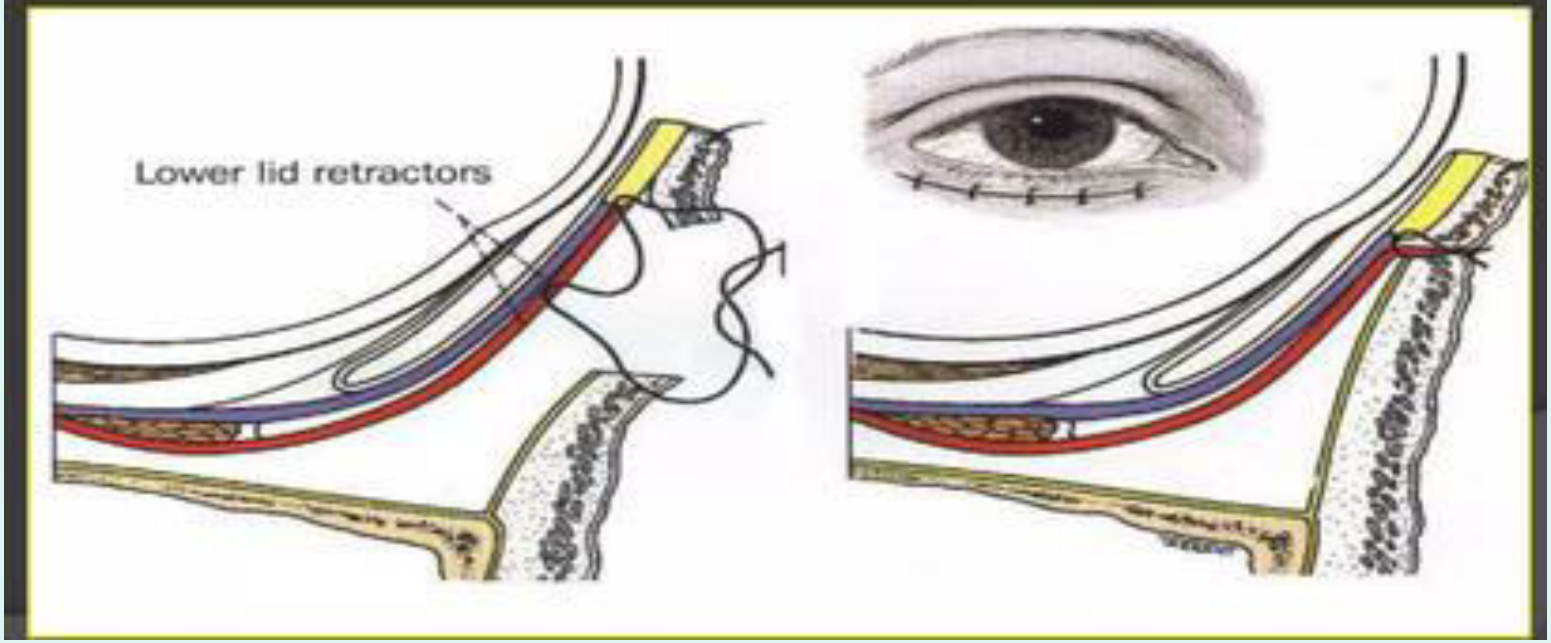
- Full thickness horizontal lid spliting and insertion of everting sutures .
- Scarring prevents overriding of preseptal and pretarsal parts of orbicularis.





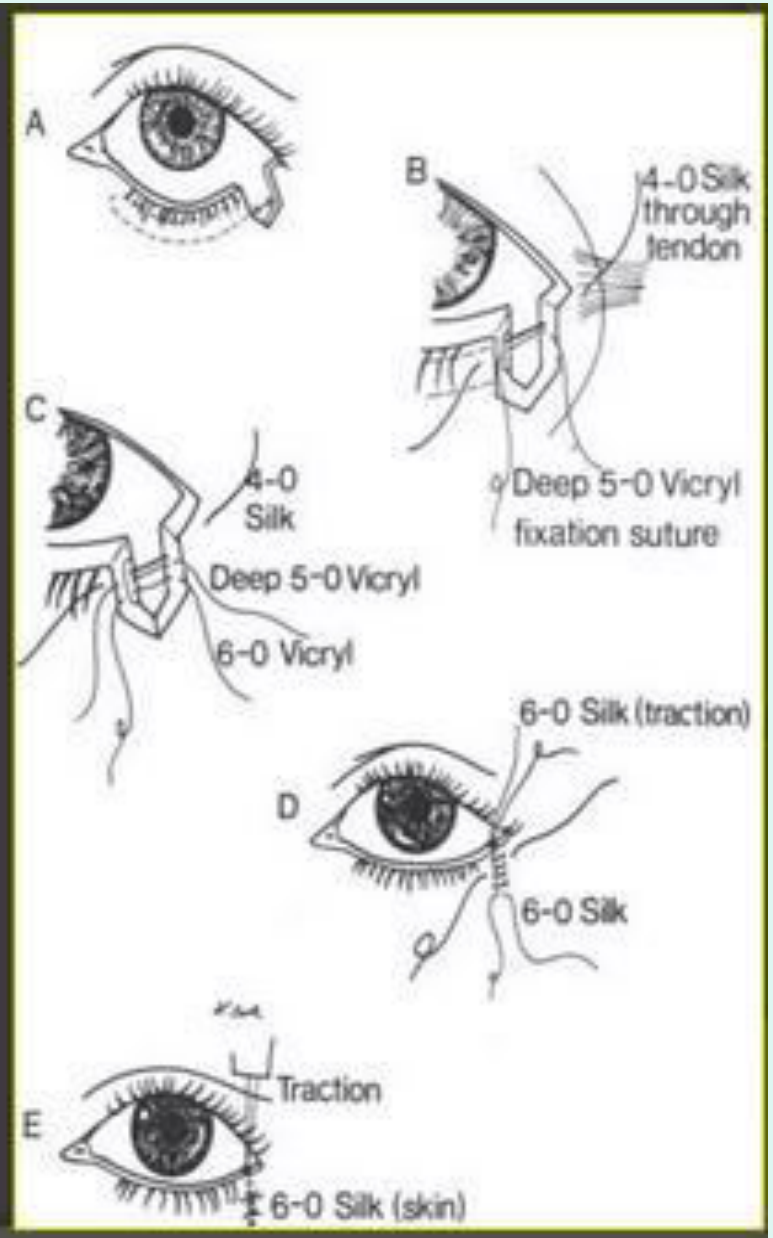
JONES PROCEDURE

- Plication of lower eyelid retractors thus increasing their pull and creating the barrier between preseptal and pretarsal portions of orbicularis
- Performed in recurrent cases.



BICKS PROCEDURE WITH REEH'S MODIFICATION

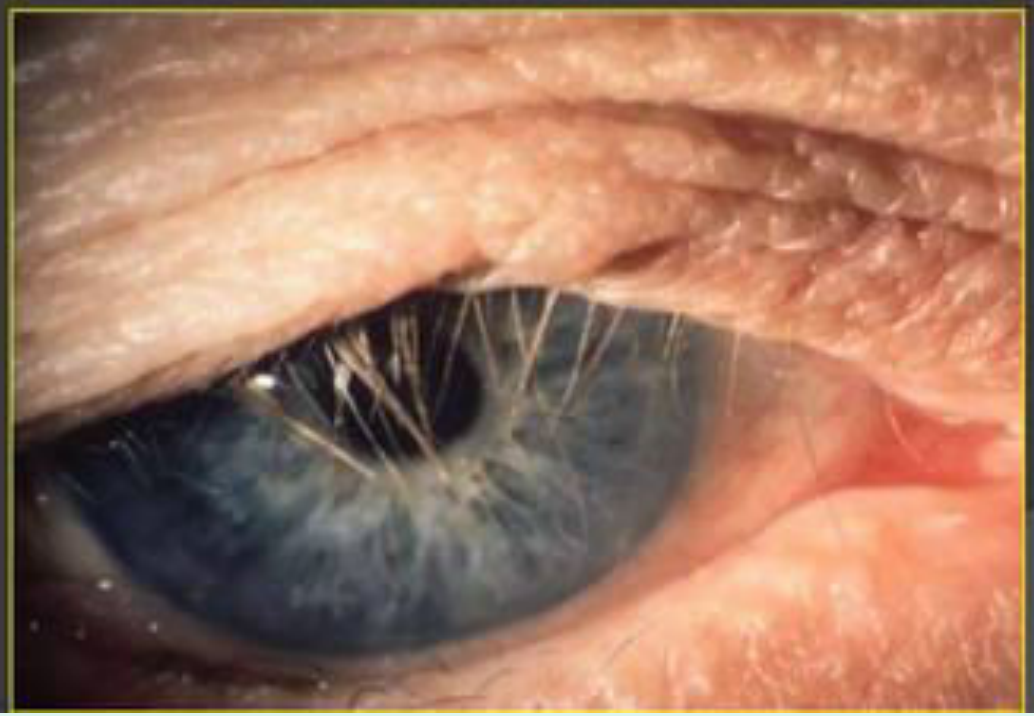
- Useful in patient with horizontal laxity.



Cicatricial entropion

PATHOGENESIS

- It is caused by severe scarring of the palpebral conjunctiva which pulls the upper or lower lid margin towards the globe.



CAUSES

- Cicatrizing conjunctivitis
- Trachoma
- Trauma
- Chemical injuries

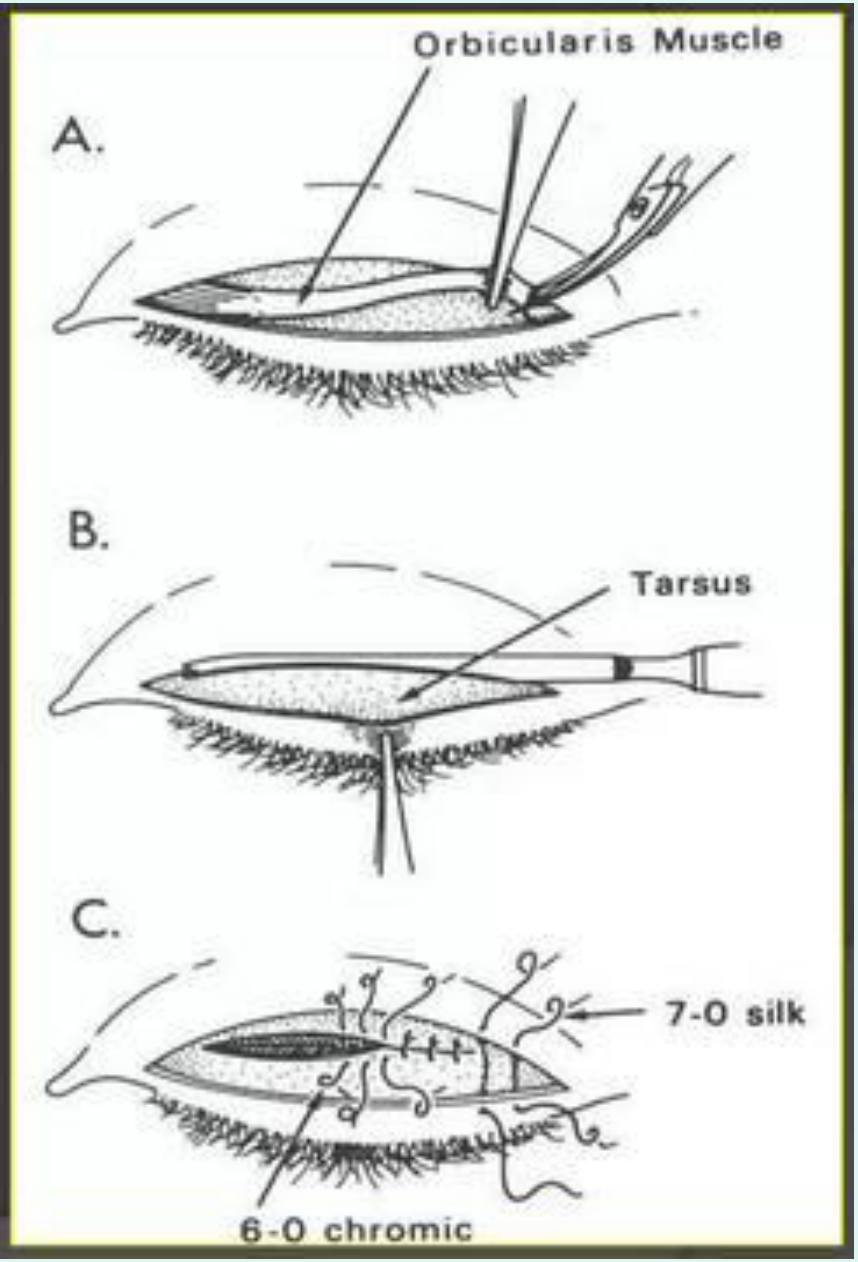
Cicatricial entropion of upper lid.

scar tissue involving tarsal conjunctiva

Treatment

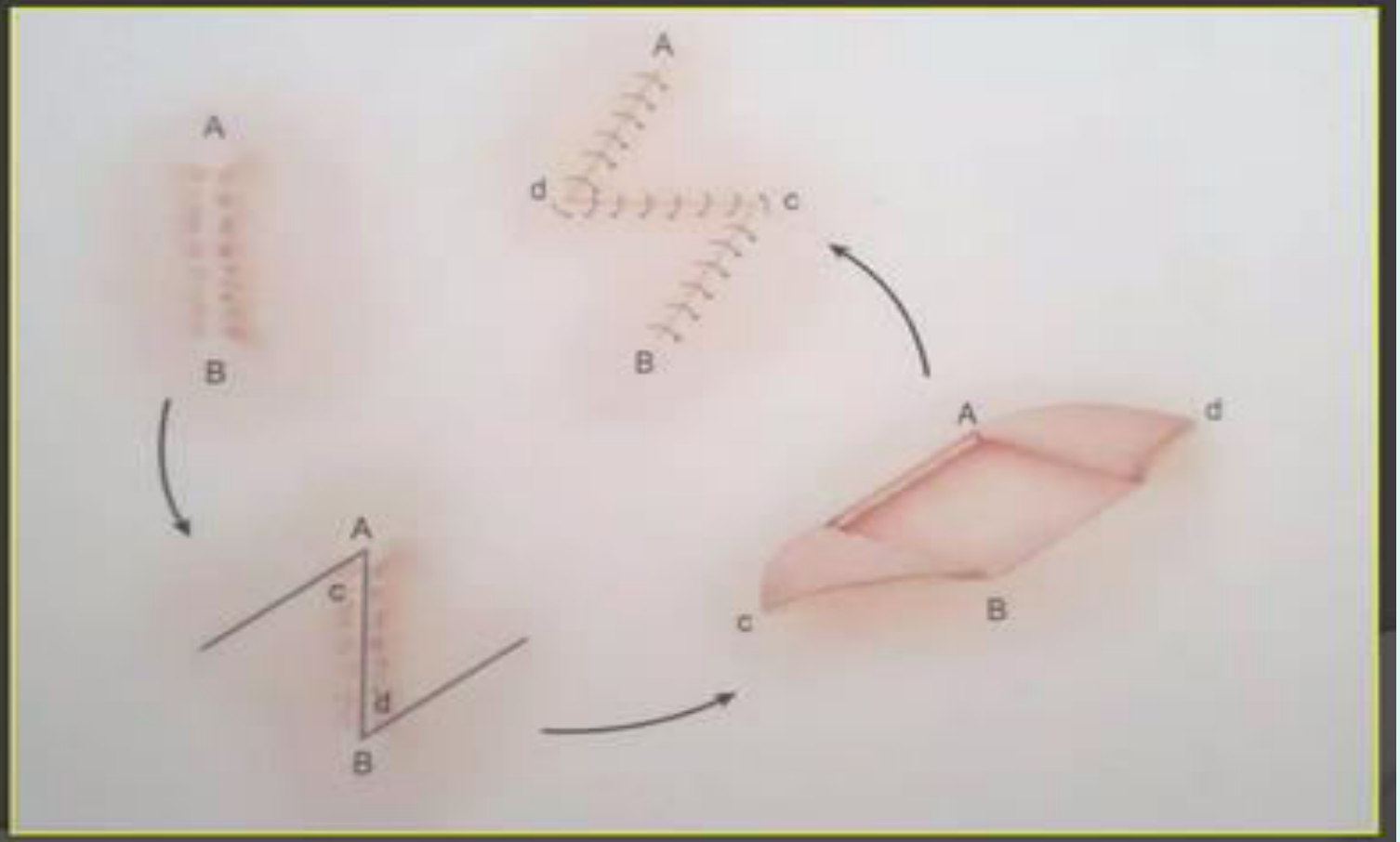
SURGERY

- Mild to moderate cases
- Wedge resection of tarsus



Linear Scar

Z PLASTY



Spastic entropion

- Spasm of orbicularis muscle in presence of degeneration of palpebral connective tissue separating orbicularis muscle fibres.
- Degeneration of aponeurosis of orbicularis muscle tends to approximate lid margins and turns them inwards on contraction.
- Horizontal lid laxity

CAUSES

- Ocular irritations causing inflammation and trauma

  Chronic conjunctivitis

  Keratitis

- Tight bandage post operatively
- Blepharophimosis

Treatment

MEDICAL

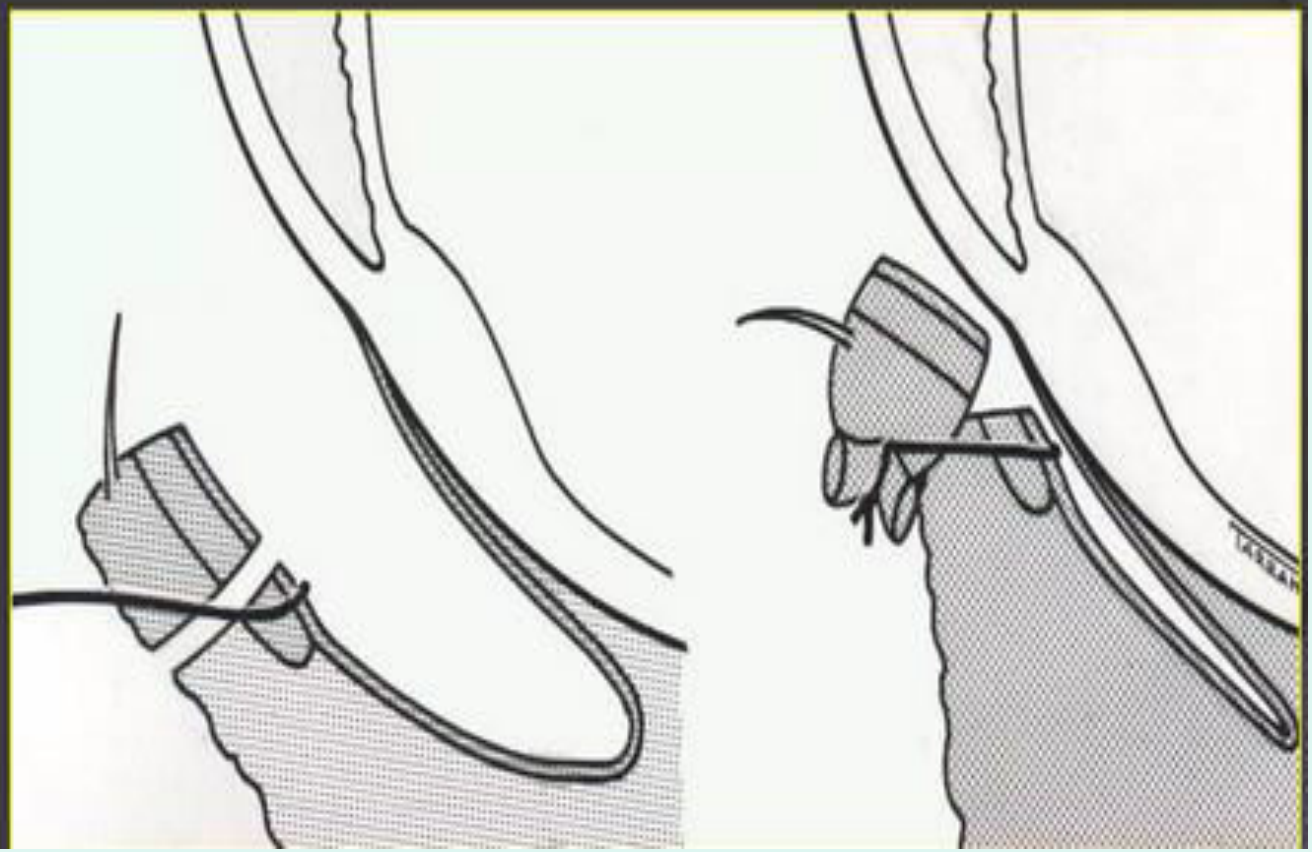
- Lubricants for surface disorders
- Antibiotics for conjunctival or lid inflammation.
- Removal of bandage.
- Injection of botulinum toxin.
- In elderly ,eversion of lid margin with adhesive plaster.

SURGERY

- A ridge of fibrous tissue in orbicularis muscle is made for preventing the sliding of fibres vertically.
- If the spasm is not relieved then the following procedures can be done.

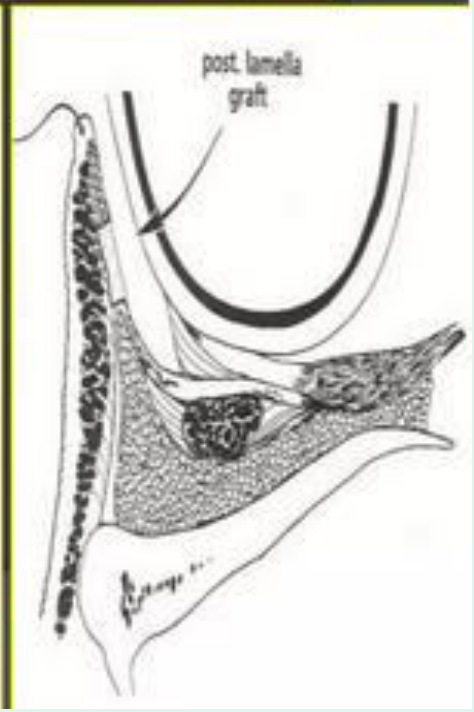
- **Weis procedure**
- **Jones procedure**
- **Bicks procedure**

- Severe case
- Burrow operation or tarsal fracture



Extensive scarring

- Needs replacement of conjunctiva. Posterior lamella grafting
  - Conchal cartilage
  - Nasal chondromucosa
  - Palatal mucoperichondrium
  - Buccal mucosa



Congenital entropion

- Rare condition due to the dysgenesis of lower eyelid retractors or developmental abnormality of tarsal plate.
- Associated with microophthalmos.

Epiblepharon

- Extra horizontal row of skin across lid margin
- When fold of skin is pulled down lashes turn out but lid remains in apposition to the globe.

Congenital entropion

- Rare
- 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

Epiblepharon

- Common
- Extra horizontal row of skin across lid margin
- Presence of lowerlid crease
- Skin remains in apposition with the globe
- Resolve spontaneously

Treatment

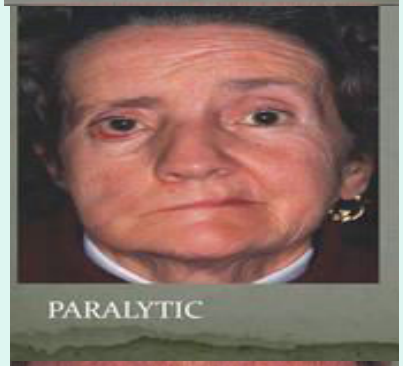
- Resection of abnormal portion of tarsus
- Plastic reconstruction of lid crease

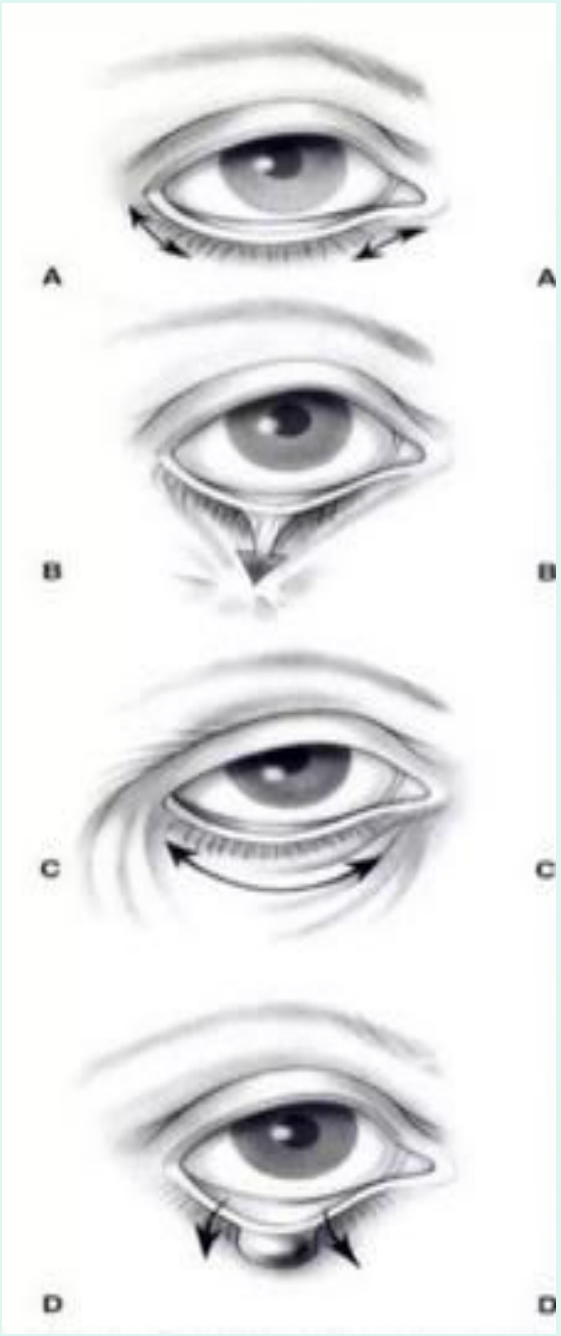
ECTROPION

- *It is turning outward of the eyelid margin*
- *More common in the lower eyelid*
- *Congenital ectropion is rare*
- *Involutional ectropion is common among other types*

- ***TYPES***

- ***Involutional***
- ***Cicatricial***
- ***Paralytic***
- ***Mechanical***





Clinical Features

- Epiphora
- Photophobia
- Keratinization of the conjunctival epithelium
- **Corneal exposure**

Corneal dryness, FB sensation corneal ulceration, exposure

PATHOGENESIS

- ***Senile or involutional***
- *lid laxity is responsible caused by a horizontal lid laxity*
- *Lengthening of the MCT and LCT*
- *Most common type*
- *There is chronic epiphora and conjunctivitis*

Classification of Involutional Ectropion

- *Punctal ectropion*
- *Medial ectropion without horizontal lid laxity*
- *Medial ectropion with horizontal lid laxity*
- *Medial ectropion with MCT laxity*
- *Ectropion of the whole length of the eyelid*
- *Complete tarsal ectropion*

- ***Cicatricial ectropion***

Shortening of the anterior lamella is either postoperatively, trauma(burns or injuries)

- ***Paralytic ectropion***

Support of the lower eyelid depends on the tone of the orbicularis and loss of this support lead to paralytic ectropion-----facial nerve palsy

Causes of cicatricial ectropion

- 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
- Lagophthalmos leads to exposure keratopathy
- Epiphora is caused by

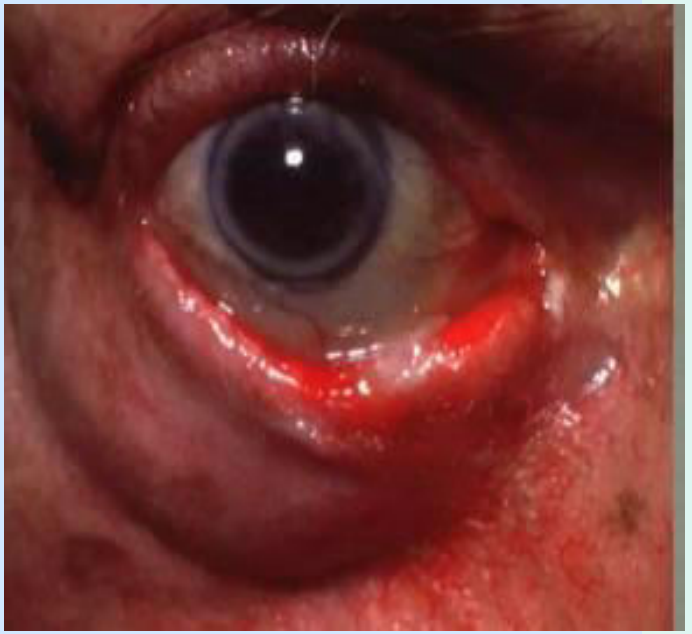
  Failure of lacrimal pump

  increased tear production resulting from exposure

MECHANICAL ECTROPION

- **Mechanical lid eversion by tumor**

- **Treatment**
  removal of the cause
  correction of lid laxity



CONGENITAL ECTROPION

- Rare
- Associated with other anomalies…..Euryblepheron, Blepherophimosis

  Congenital icthyosis

  Down syndrome
- It is caused by shortage of skin

PATHOGENESIS

- The initial sign of a lower lid ectropion is inferior punctal eversion
- lead to a vicious cycle of secondary events
- Eversion of the inferior punctum → exposure and drying of the punctum → stenosis → Epiphora → excoriation and contracture of the skin of the lower eyelid that further exacerbates the ectropion.
- patient tends to continually wipe the tears

↓

eyelid and medial canthal tendon laxity that further exacerbates the lower eyelid ectropion.

- If the condition is neglected, the tarsal conjunctiva becomes exposed and eventually thickened and keratinized.
- Lower lid ectropion often results in a corneal epitheliopathy, especially in the inferior third of the cornea

Patient evaluation

It should be directed towards recognition of the ectropion and its severity .

1. Severity of ectropion:
    - *Mild : The lower punctum is everted*
    - *Moderate : The tarsal conjunctiva is exposed*
    - *Severe : The lower fornix is exposed*

2. Extent of ectropion: Medial or lateral or involving the entire lower eyelid.

3. Presence of any traumatic or surgical scar tissue.

4. Presence of a horizontal lid laxity. Which is demonstrated by:

a. Eyelid snap test: Pull the eyelid inferiorly.

- If the eyelid springs to its normal position without a blink it means no lid laxity.
- If it remains away from the eye for a time; it means a lax lid. Then the degree of lid laxity will be determined by the Number of blink required to bring the lid on contact to the eye.

b. Lateral distraction test: By pulling the eyelid laterally from the eye, the punctum can be drawn lateral to medial limbus, suggest medial canthal tendon laxity

SNAP TEST

- **Positive when the eyelid fails to return to the globe without a blink**

- ***Medial tendon laxity***

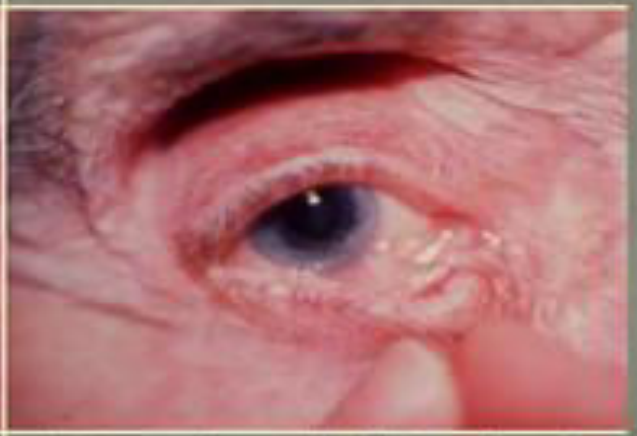
- 5. Signs of lower facial nerve palsy as brow ptosis, lid retraction with incomplete blink, lagophthalmos and absence of nasolabial fold.
- 6. Weakness of the preseptal orbicularis oculi is tested by closure of eyelids.
- 7. Examination of corneal sensation is a must

Preoperative assessment

Postition of maximal ectropion

Horizontal lid laxity

Medial canthal tendon laxity



Lateral canthal tendon laxity

Retropunctal cautery

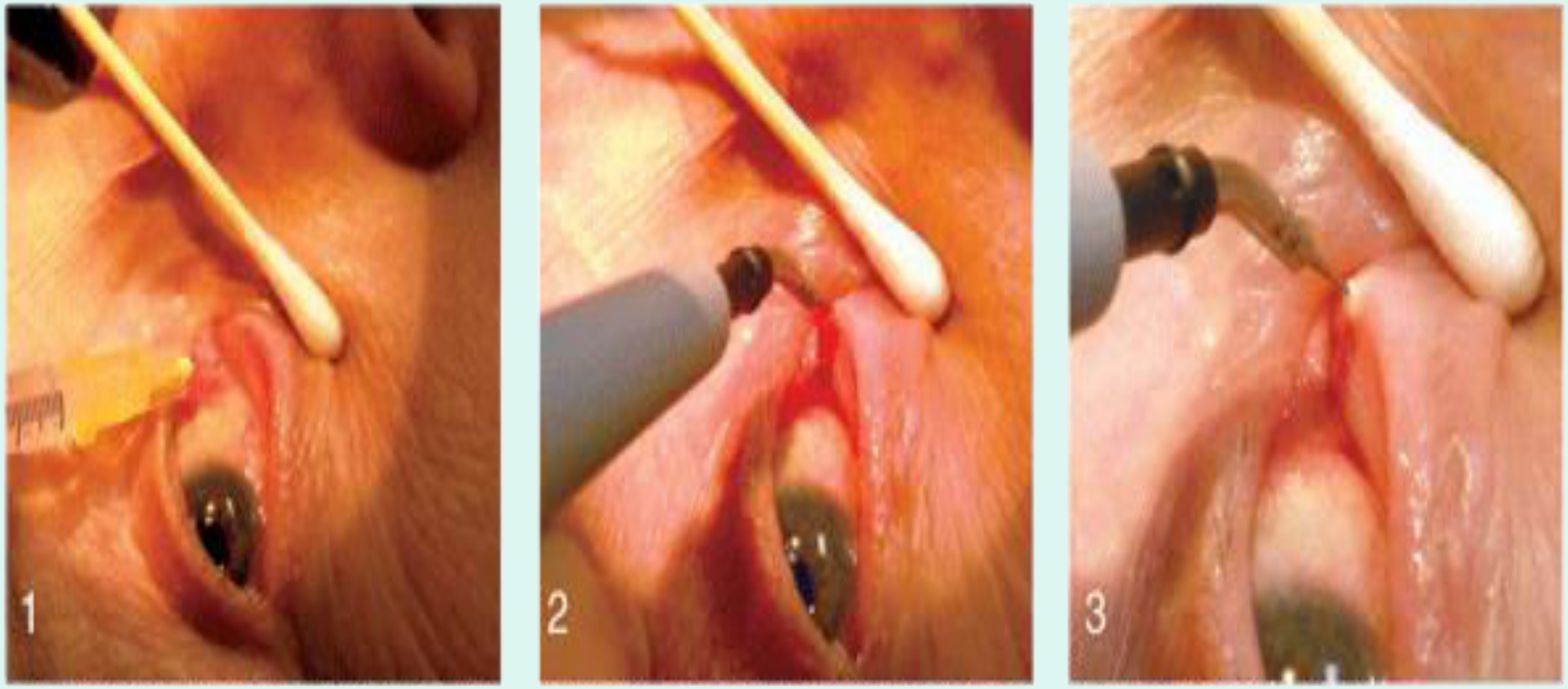


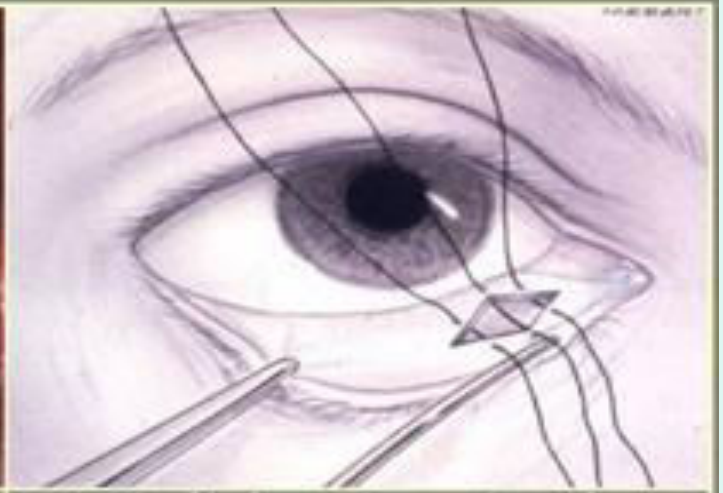
Figure 1. A 30-ga. needle with 0.4 mL of 2% lidocaine is placed 2 mm posterior to the punctum to anesthetize the plug.

Figure 2. Insert the hyfrecator tip of the cautery device deep into the punctum and horizontal canaliculus.

Figure 3. The endpoint of the cautery tip should produce a brisk white bubble at the punctum.

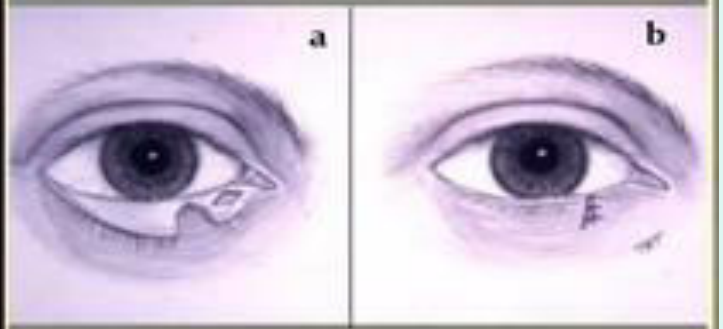
Treatment of medial ectropion

Mild



Medial conjunctivoplasty

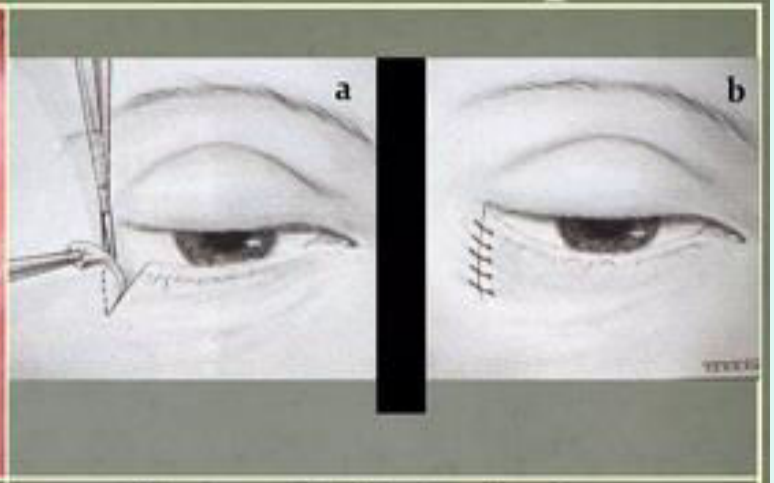
Severe



Lazy-T procedure

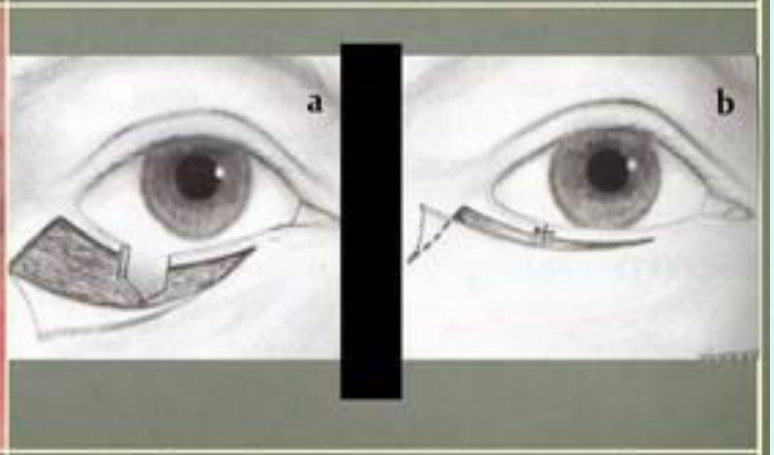
Treatment of extensive ectropion

Without marked excess skin



Horizontal lid shortening

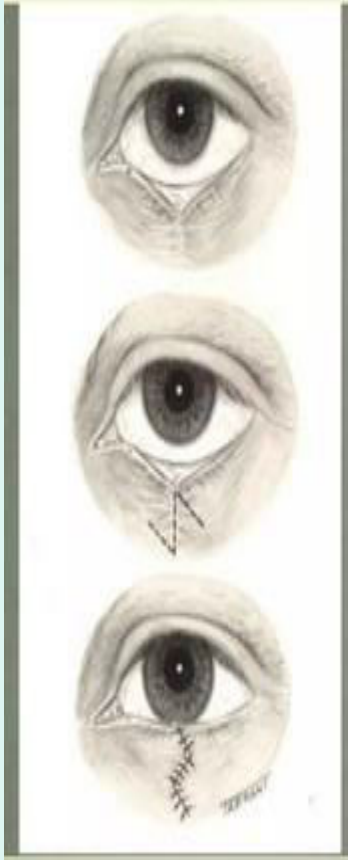
With marked excess skin



Kuhnt-Szymanowski procedure

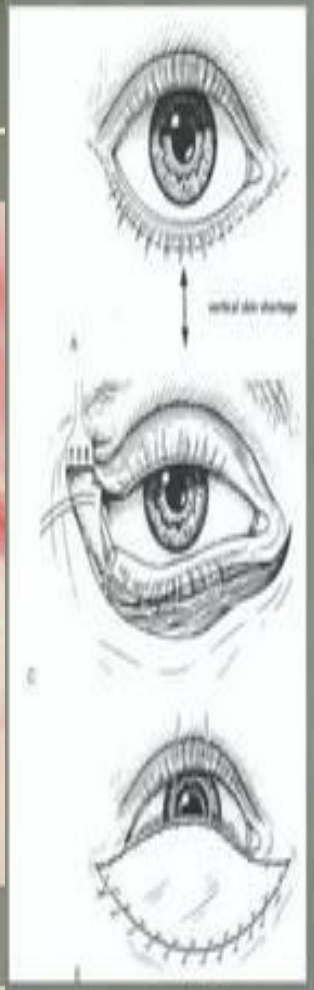
Treatment of cicatricial ectropion

Method depends on severity

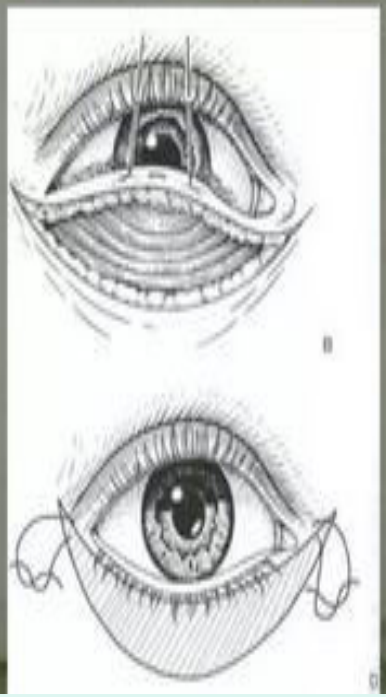


Mild localized cases are treated by excision of scar tissue combined with 'Z'-plasty

Severe cases require transposition flaps or free skin grafts



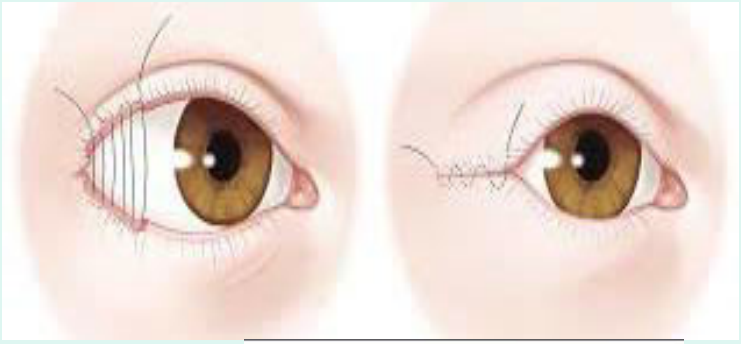
- Correction of cicatricial ectropion
  - Horizontal tightening
  - Fascial sling
  - Full thickness skin graft



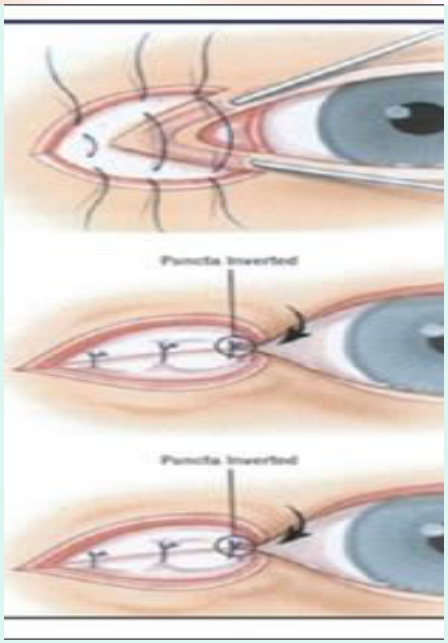
Treatment options for Paralytic Ectropion

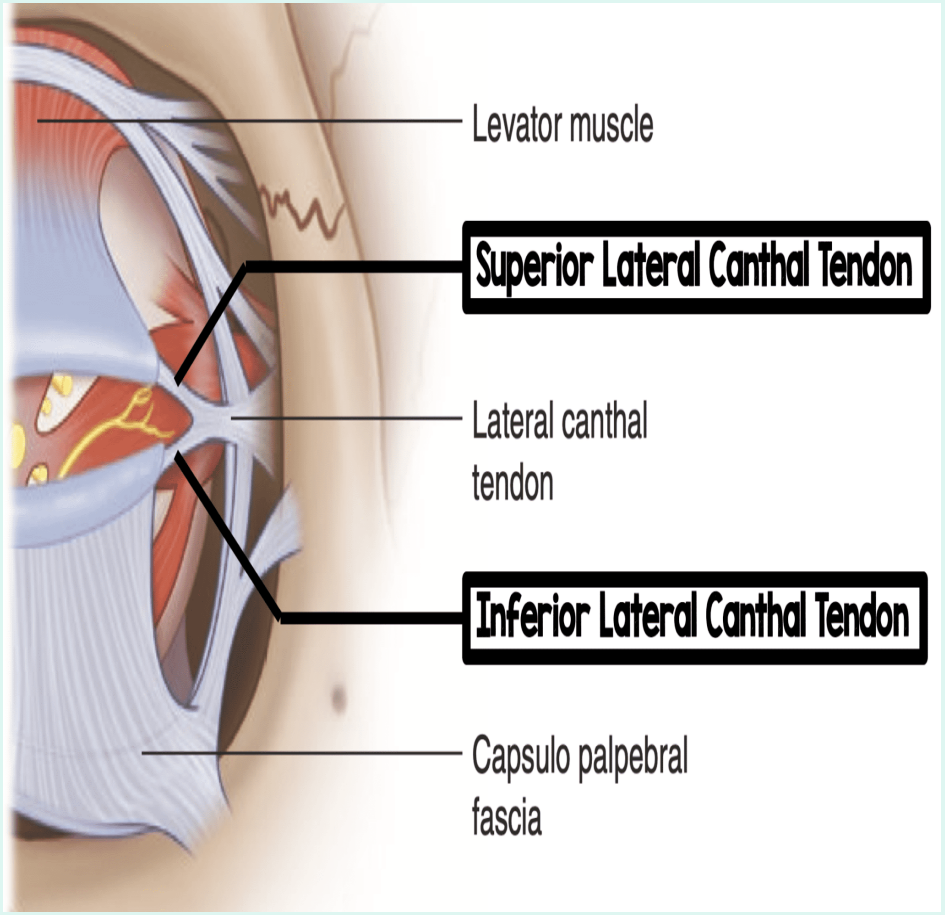
- **TEMPRORAY**
- Lubricants
- Botulinum toxin injection
- Temporary tarsorraphy in patients with poor bells phenomena
- **PERMANENT**
- Medial canthoplasty
- Medial wedge resection to treat MCT Laxity
- Lateral canthal sling to control residual ectropion

Tarsorrhaphy *is a safe and relatively simple procedure in which part, or all the upper and lower eyelids are joined together to cover the eye partially or completely*

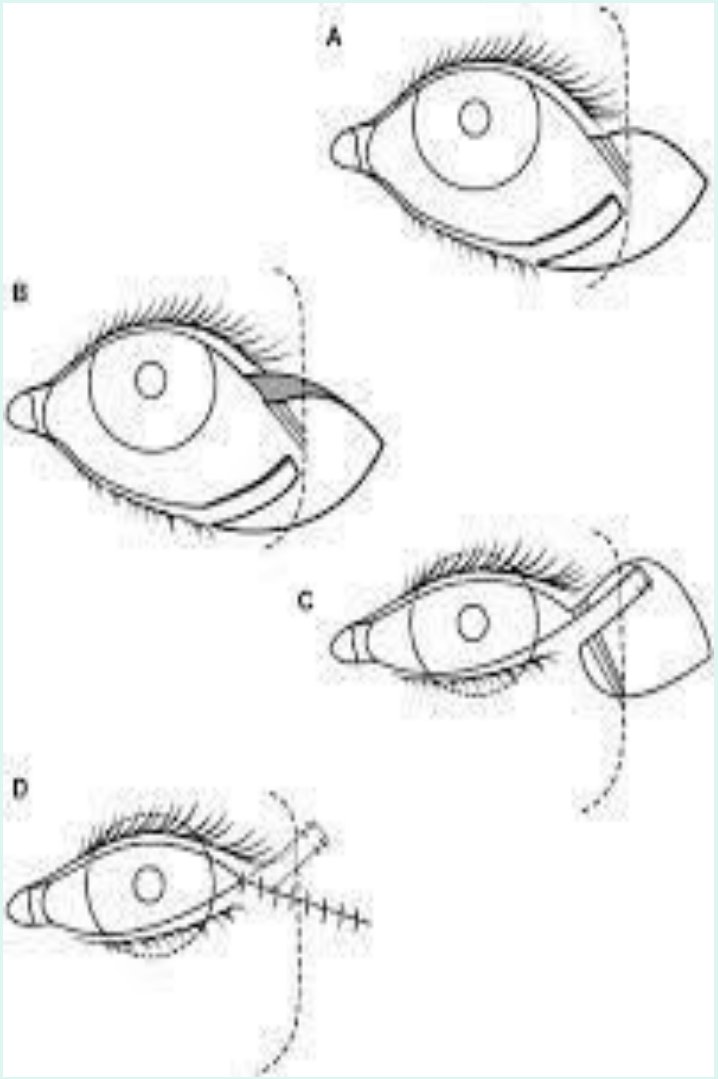


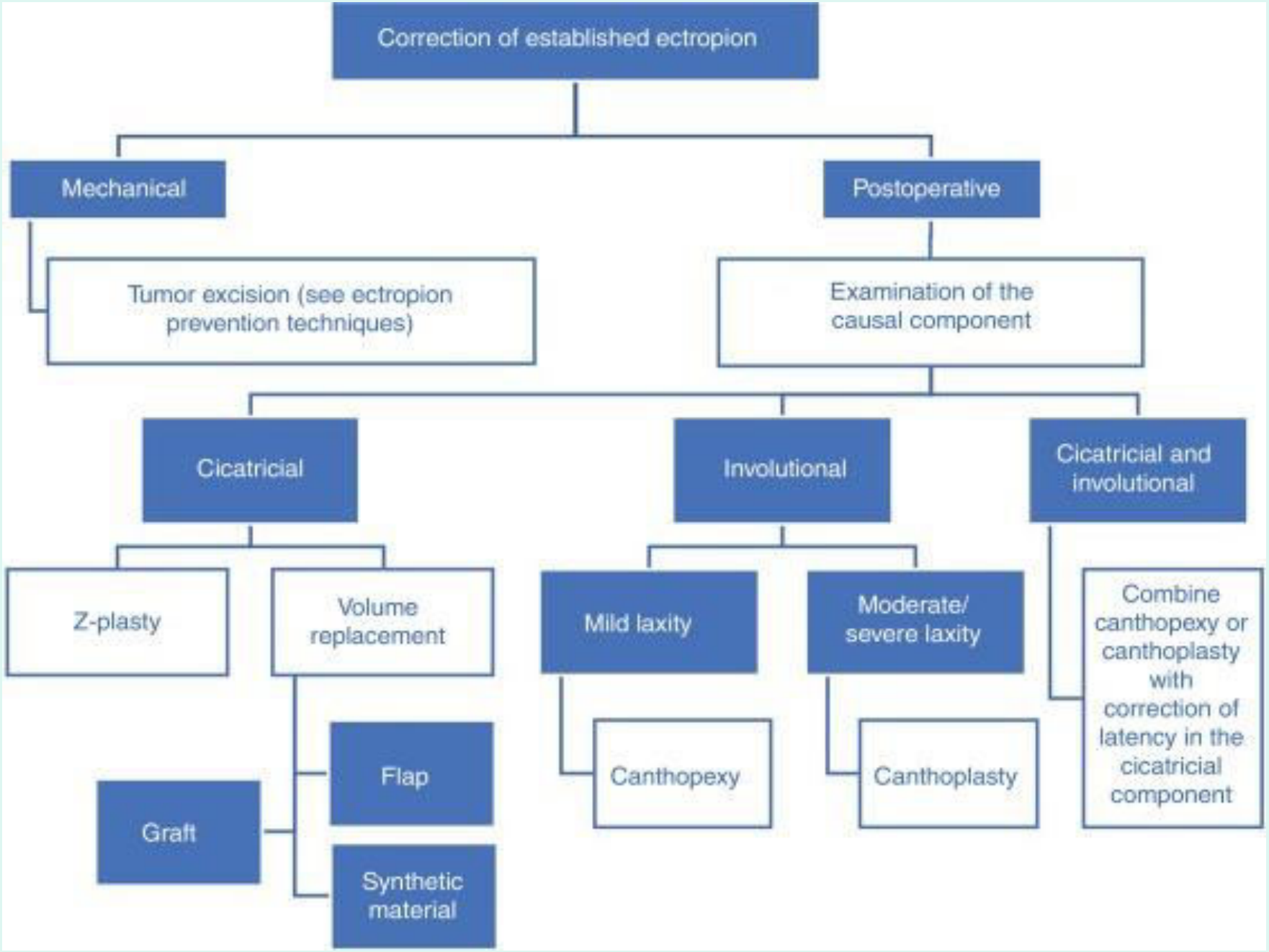
Medial canthoplasty





Lateral canthal sling




Correction of established ectropion
Mechanical
Postoperative
Tumor excision (see ectropion prevention techniques)
Examination of the causal component
Cicatricial
Involutional
Cicatricial and involutional
Z-plasty
Volume replacement
Mild laxity
Moderate/ severe laxity
Combine canthopexy or canthoplasty with correction of latency in the cicatricial component
Flap
Graft
Synthetic material
Canthopexy
Canthoplasty

Bibilography

- Kanski clinical opthalmology 6th edition
- Parsons diseases of eye 21st edition
- A K Khurana opthalmology 4th edition
- Collins occuloplasty


Thank
you!