EYELIDS
Lecture two

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Acquired ptosis:

- **Involutional ptosis** is the most common ptosis encountered, often involves both upper lids of older patients, and may occur following cataract extraction. This is the most common form of acquired ptosis and is **caused by stretching of the levator aponeurosis or disinsertion of the levator muscle from its insertion onto the tarsus.**

- ***Paralytic ptosis*** **in oculomotor palsy** is usually **unilateral** with the drooping eyelid covering the whole eye. Often there will be other signs of palsy in the area supplied by the oculomotor nerve.
- In ***external oculomotor palsy***, only the extraocular muscles are affected (mydriasis will not be present), whereas in ***complete oculomotor palsy***, the inner ciliary muscle and the sphincter pupillae muscle are also affected (internal ophthalmoplegia with loss of accommodation, mydriasis, and complete loss of pupillary light reflexes).

- ***Myasthenia gravis*** (myogenic ptosis that is often **bilateral** and may be asymmetrical) is associated with abnormal fatigue of the striated extraocular muscles. Ptosis typically becomes more severe as the day goes on.
- **Sympathetic ptosis** occurs in Horner's palsy (ptosis, miosis, and enophthalmos).
- **Traumatic ptosis** can occur after injuries.
- **Mechanical ptosis** may be associated with lid tumors such as neurofibromas and may result from scars or foreign bodies.

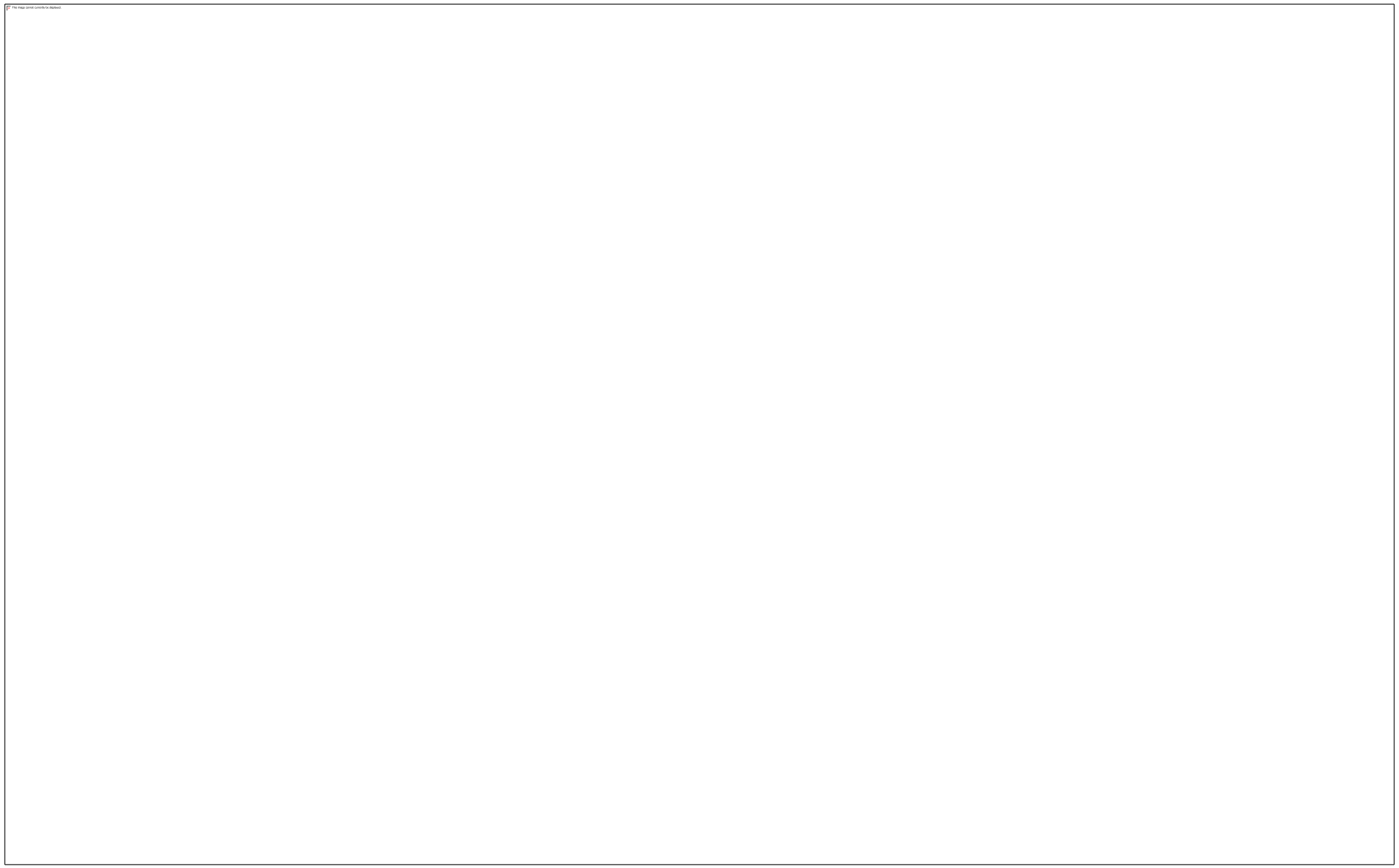
Note: Rapidly opening and closing the eyelids provokes ptosis in myasthenia gravis and simplifies the diagnosis.

Treatment of acquired ptosis:

- Depends on the cause.
- As palsies often resolve spontaneously, the patient should be observed before resorting to surgical intervention.
- Conservative treatment with special eyeglasses may be sufficient even in irreversible cases.
- Because of the risk of overcorrecting or undercorrecting the disorder, several operations may be necessary.
- **Repair of the levator aponeurosis** (tendon) if possible.
- In more severe cases, **the levator aponeurosis may be suspended from the frontalis muscle** if levator function is poor.

Colobomas

Colobomas are usually full-thickness defects in the medial portions of the upper lids. Colobomas are often associated with other congenital defects such as **facial dermoids**. Unless **exposure keratopathy** occurs, surgical repair of most colobomas can be delayed until the child is several years old.



Colobomas

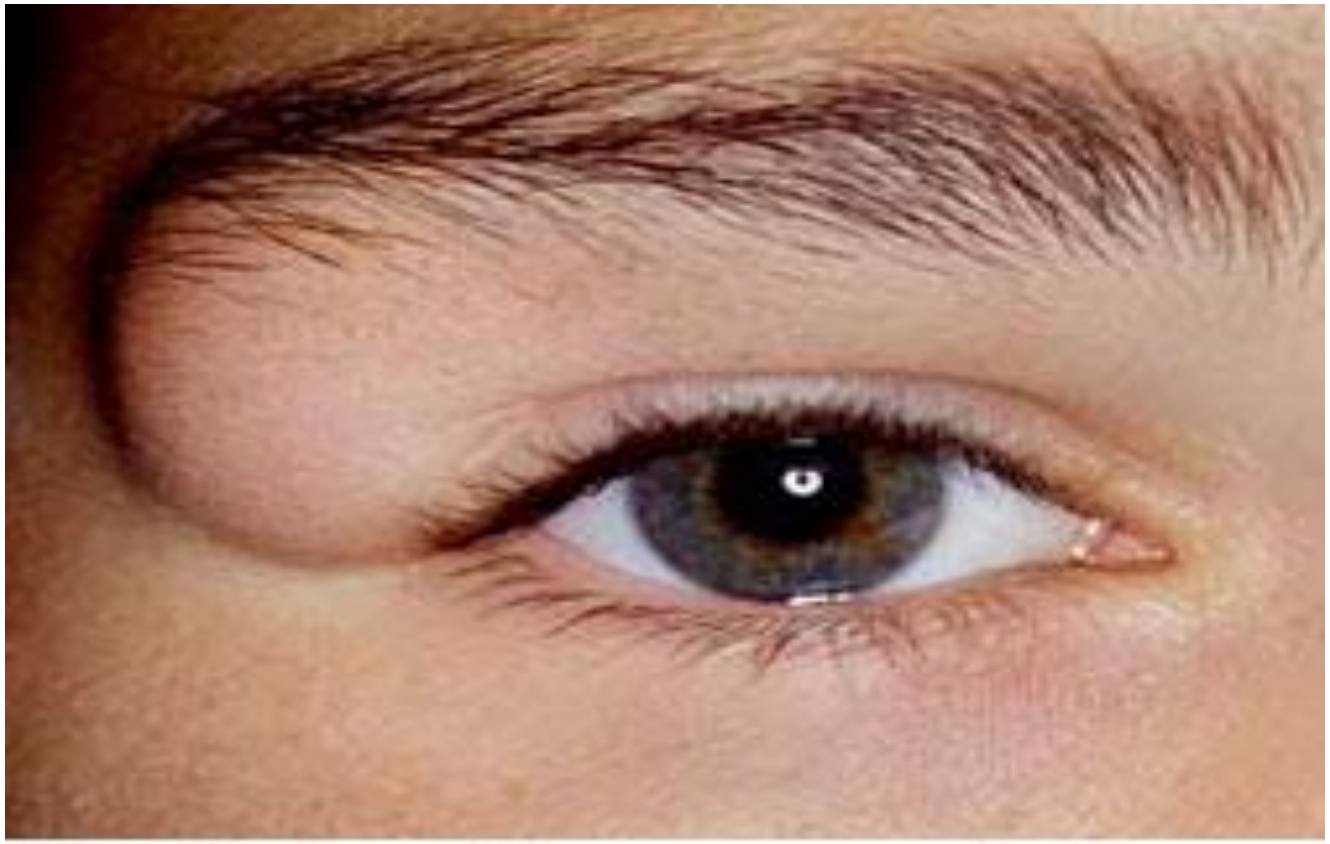


Fig. 1 A dermoid is an overgrowth of normal, non-cancerous tissue in an abnormal location.

Facial dermoids

Exposure keratopathy

Ankyloblepharon

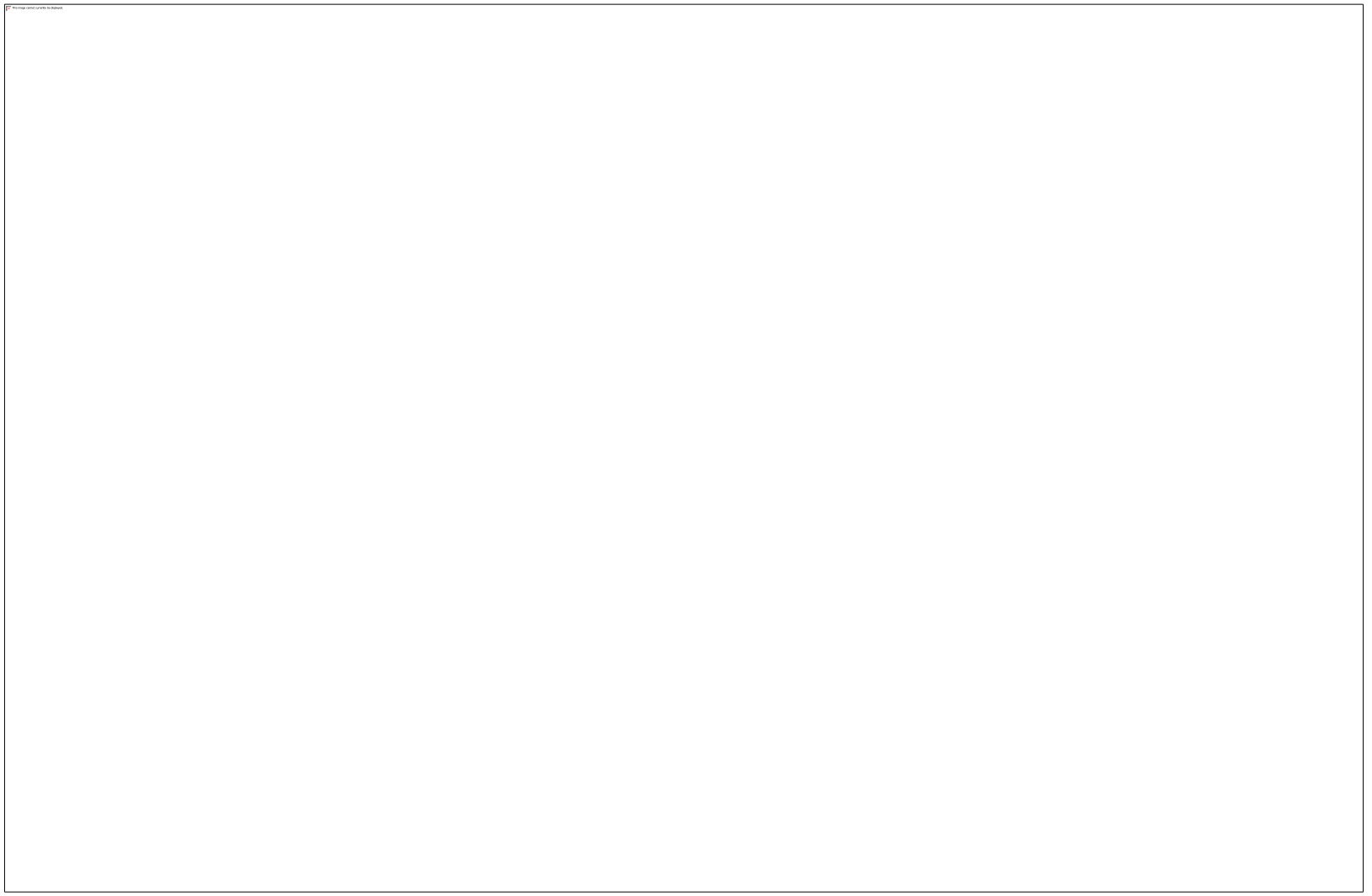
Ankyloblepharon is an abnormal fusion of the upper and lower eyelid margins, usually near the lateral canthus. The fused lids may be surgically divided if the attachment is cosmetically disfiguring.

Ankyloblepharon

Ectropion

- **Ectropion** is a malposition of the eyelid in which the lid margin is rotated away from the globe (Everted). The lower lid is involved much more commonly than the upper lid. Ectropion sometimes leads to ***exposure keratopathy*** and ***conjunctival hypertrophy***. **Tearing** may result from eversion of the lacrimal punctum if the ectropion involves the medial lid.

Ectropion



Conjunctival hypertrophy

Congenital ectropion is quite uncommon, although it may be found with blepharophimosis.

Treatment is rarely required because the eversion is usually minimal.

4 day child born with bilateral complete eversion of both upper eylids (Bilateral ectropion)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Blepharophimos

Acquired ectropion is categorized on the basis of etiology:-

A. Involutional ectropion is relatively common and is a frequent cause of tearing (**epiphora**). This abnormality is

caused by:

1. **Attenuation of the lower eyelid retractors,**
2. **Attenuation of the orbicularis muscle,**
3. **Attenuation of the canthal tendons**.

Treatment involves horizontal eyelid shortening and canthal suspension. If punctal eversion is the most significant feature, conjunctival shortening and a punctoplasty may reduce tearing.


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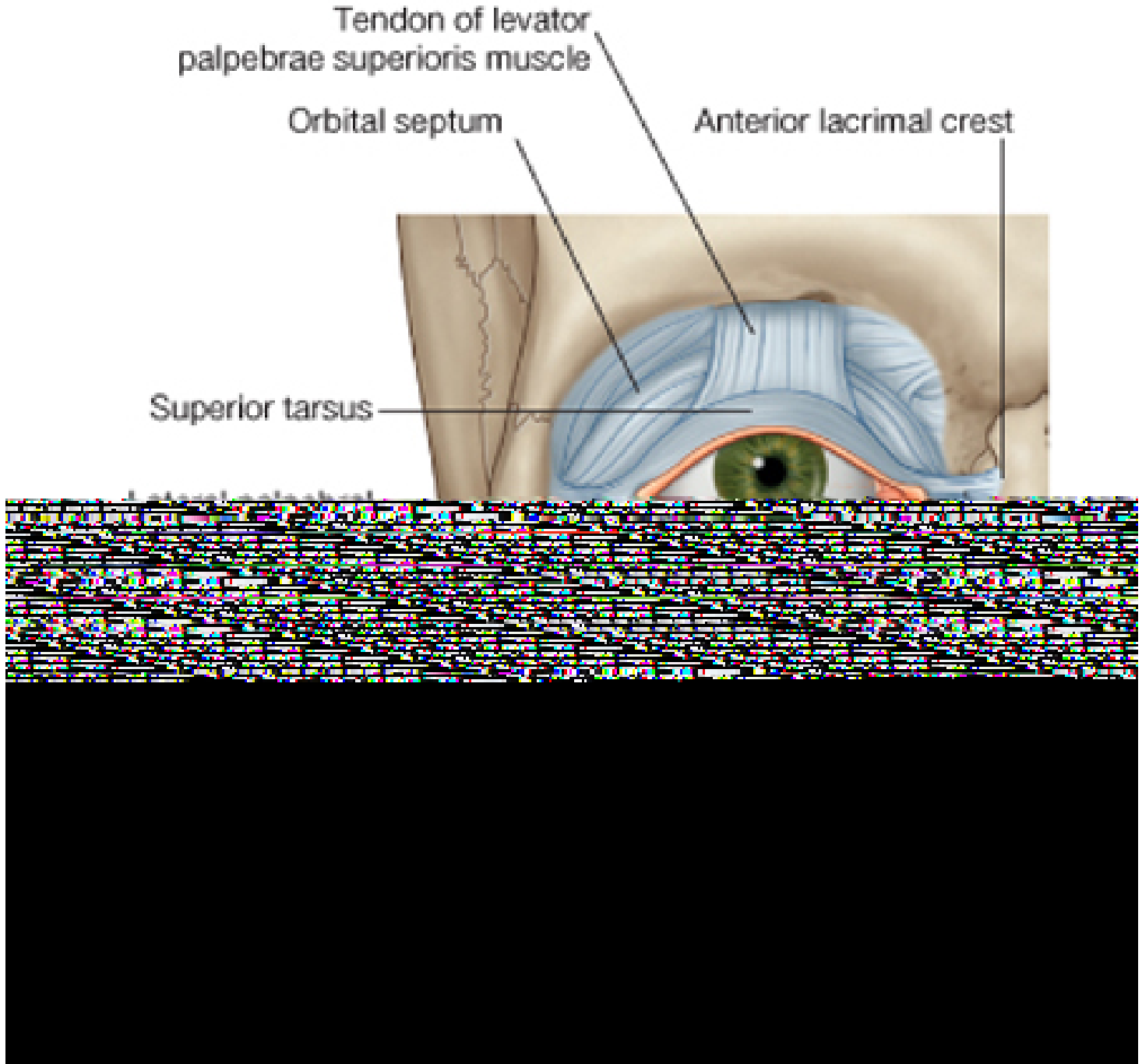
Tendon of levator
palpebrae superioris muscle
Orbital septum
Anterior lacrimal crest
Superior tarsus

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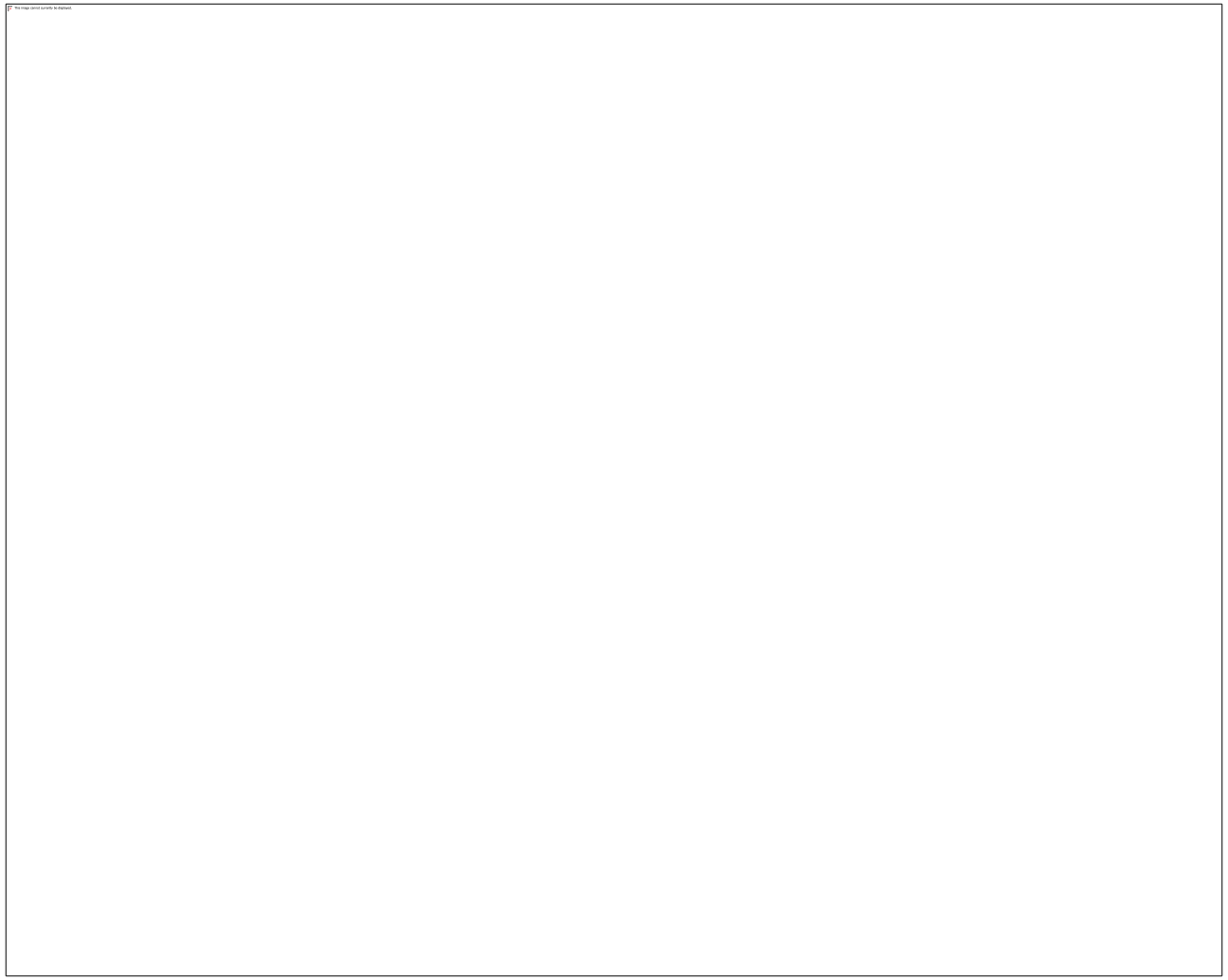
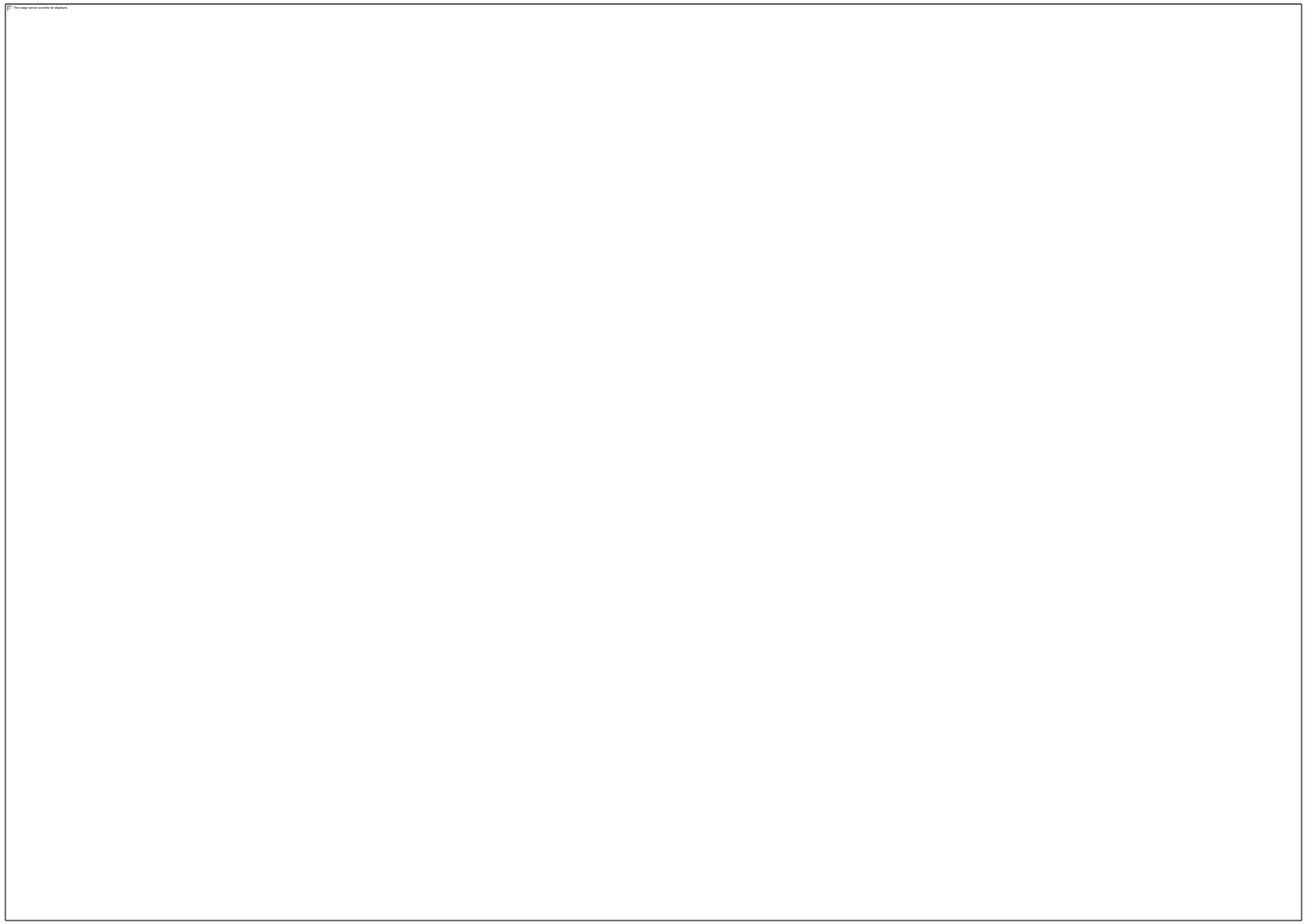
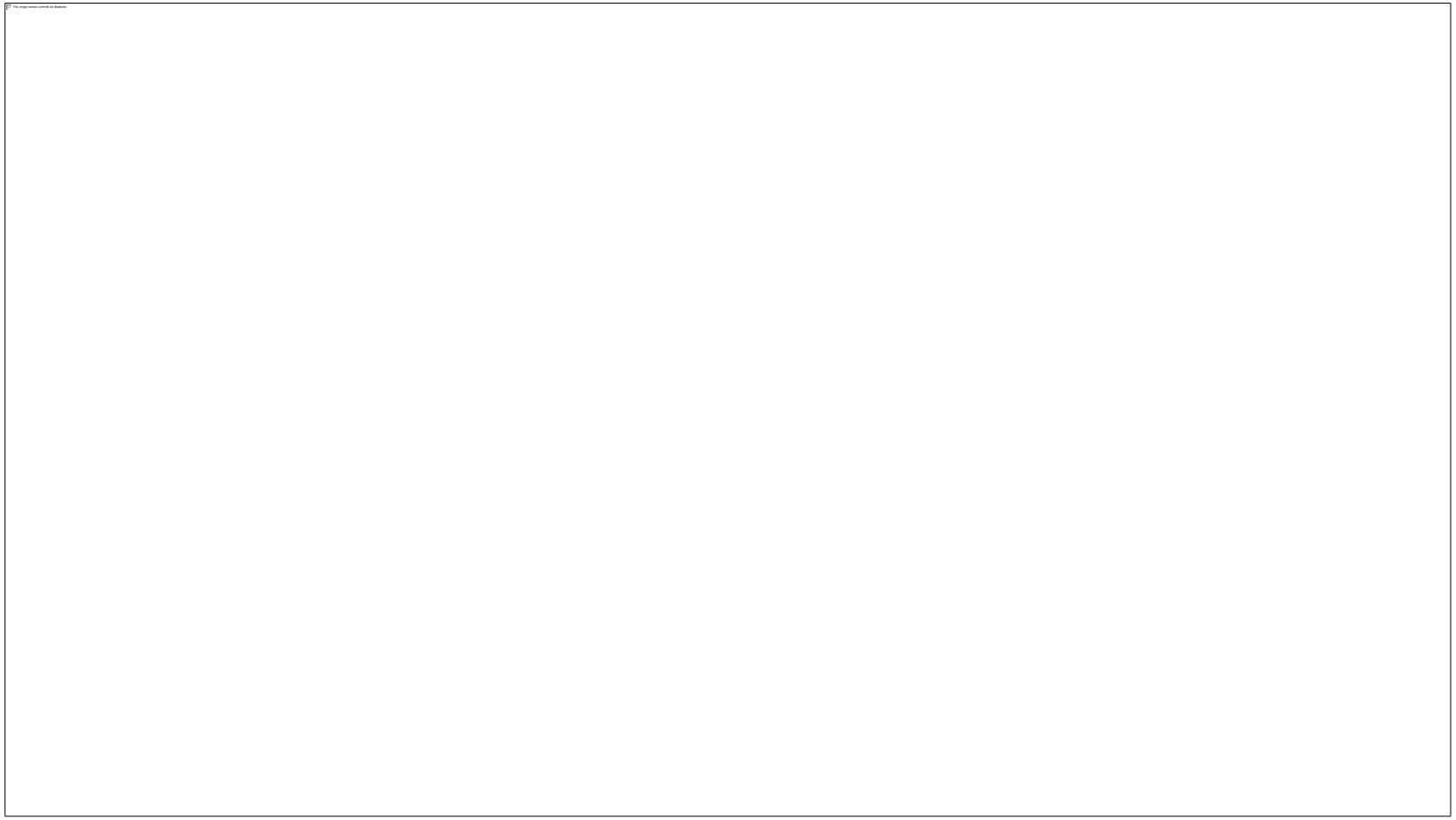


Punctal eversion (ectropion)

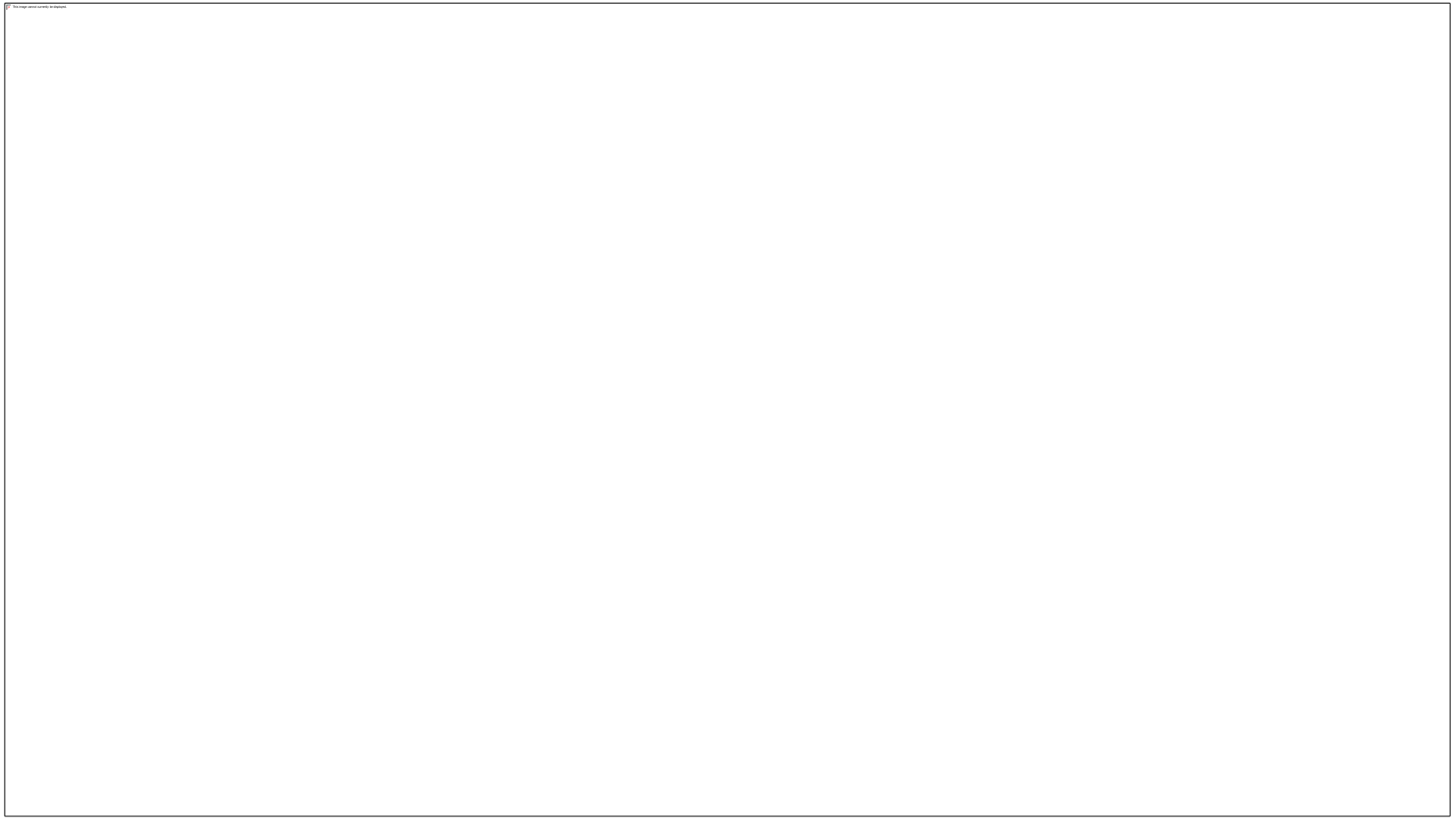


Conjunctival shortening

Canthoplasty, lower eyelid tightening procedure



Lateral tarsal strip

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Note

- **Epiphora, or excessive tearing**, is defined as the overflow of tears from one or both eyes. Epiphora can occur continuously (be present all the time), or it can occur intermittently (be present only sometimes). Epiphora is subdivided into two main categories: overproduction of tears or inadequate drainage of tears.

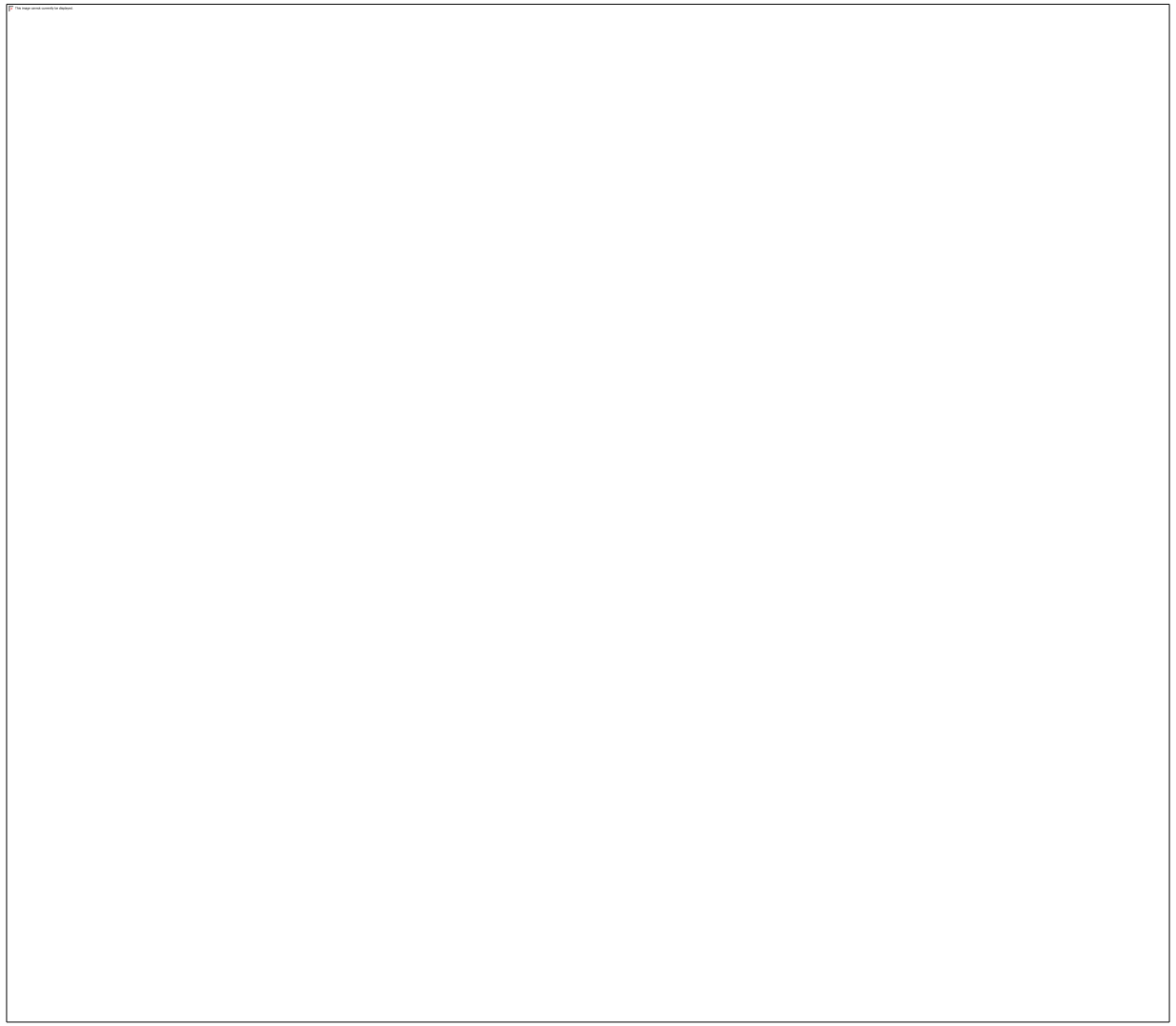
B. Paralytic ectropion usually results from seventh nerve injury, with resulting drooping of the lower lid and widening of the palpebral fissure.

Treatment may require:

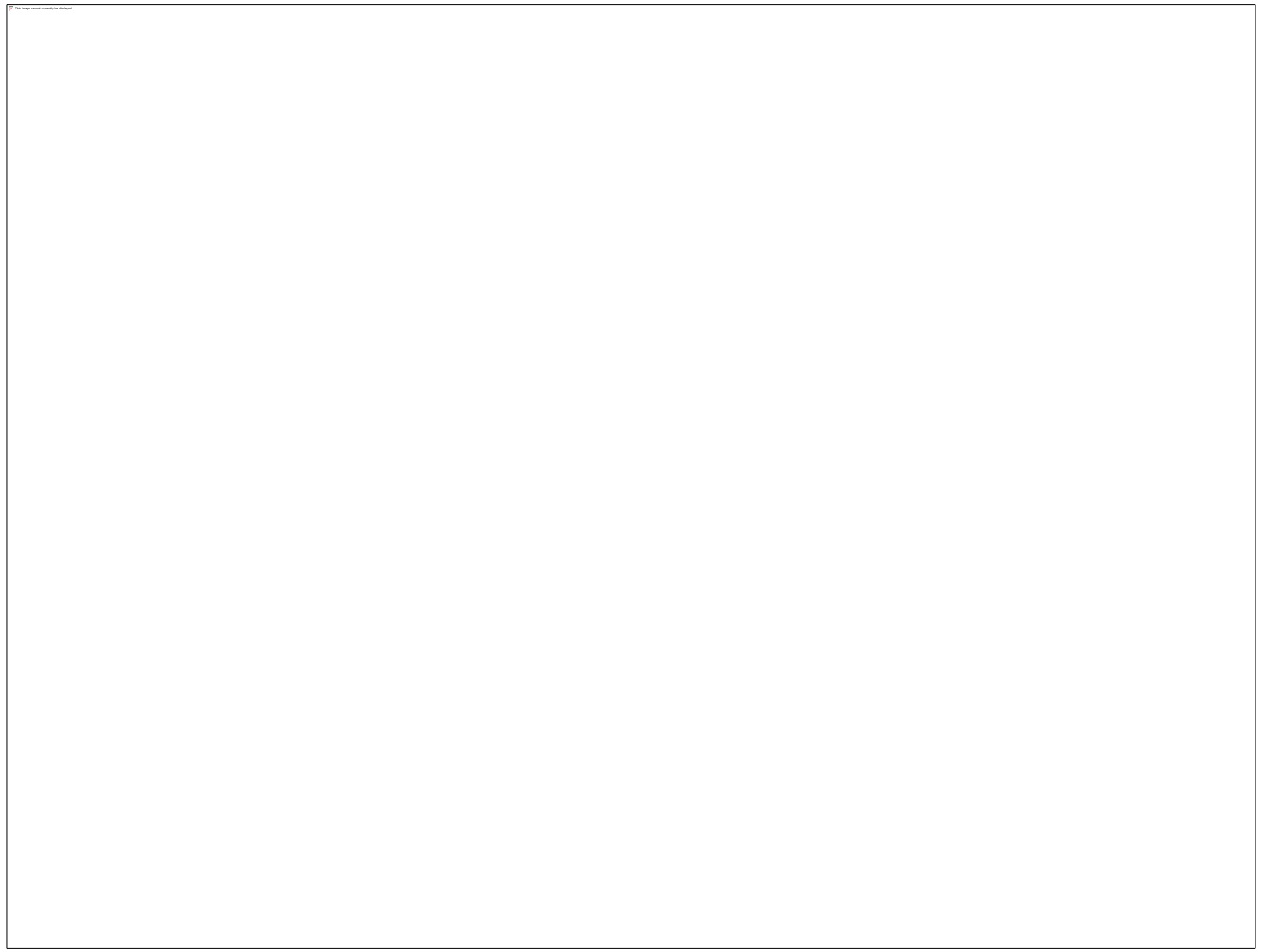
1. Tarsorrhaphy,
2. Horizontal lid shortening,
3. Canthoplasty, or
4. Suspension of the upper cheek.
5. A flaccid brow and upper lid may be surgically elevated if they partially cover the palpebral fissure.

Notes

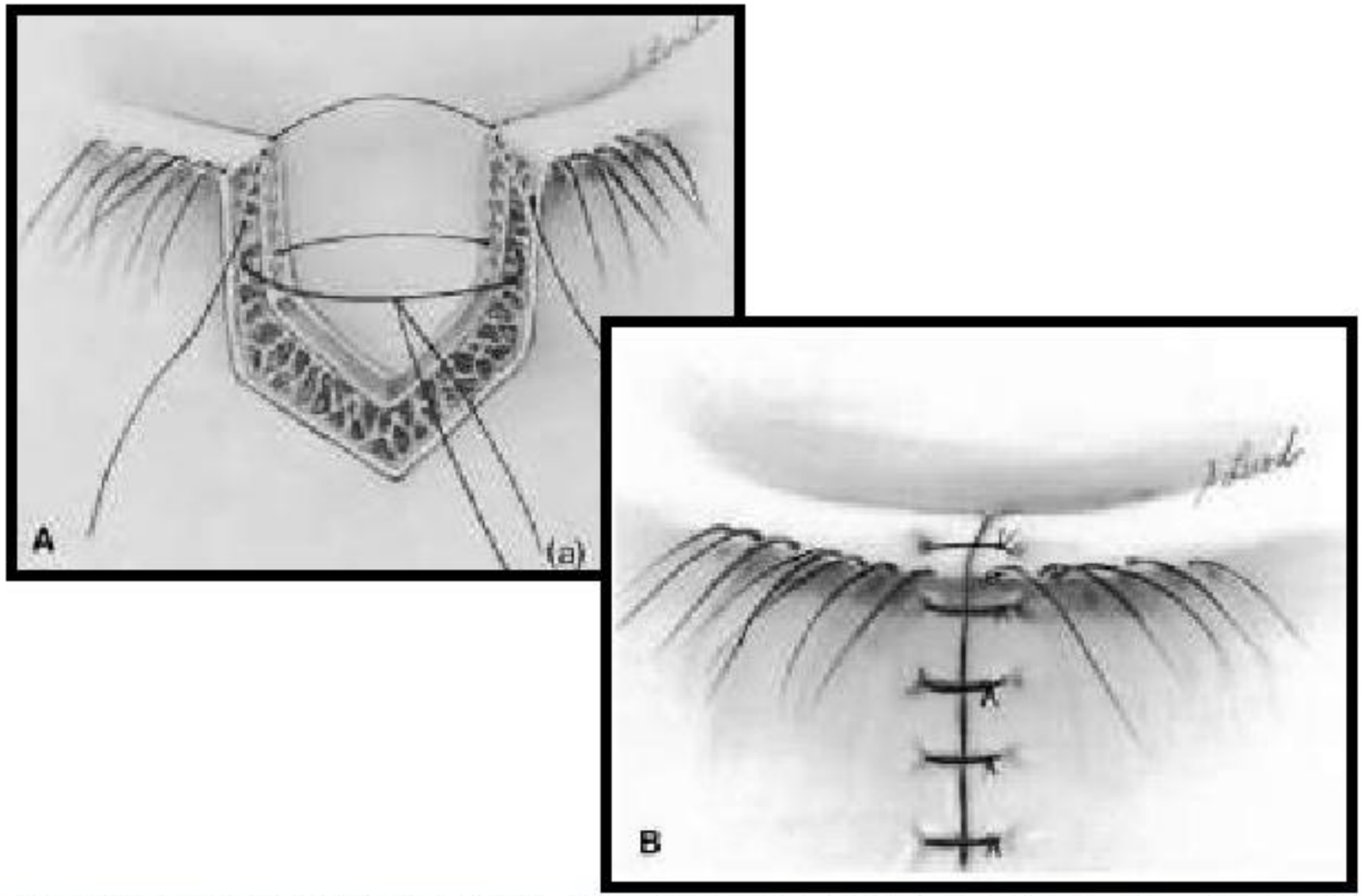
1. **Tarsorrhaphy** is a surgical procedure in which the eyelids are partially sewn together to narrow the eyelid opening
2. **Canthoplasty** is a surgical procedure that involves tightening the muscles or ligaments that provide support to the outer corner of a patient's eyelid.



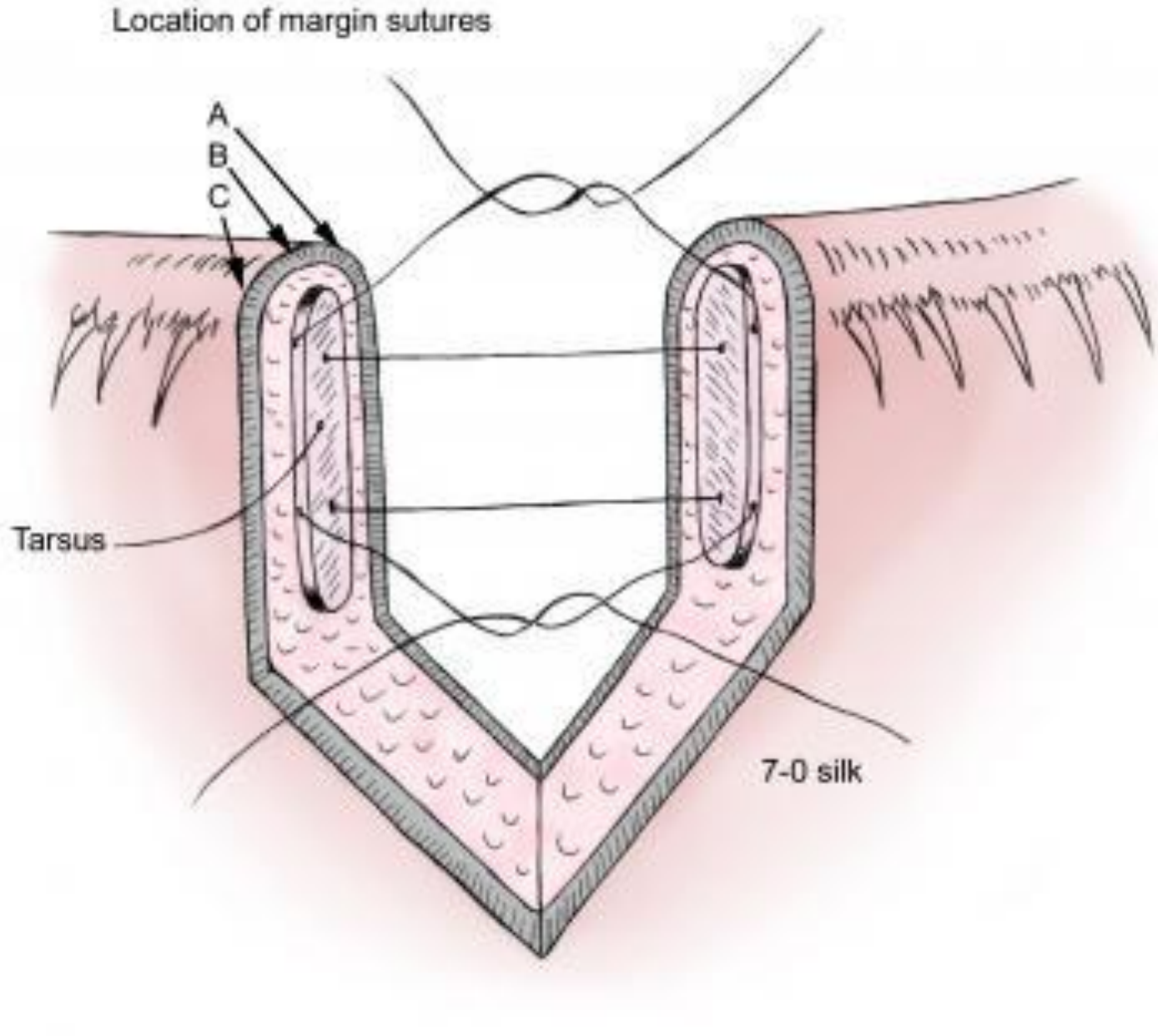
Paralytic ectropion (in patient with facial paralysis)

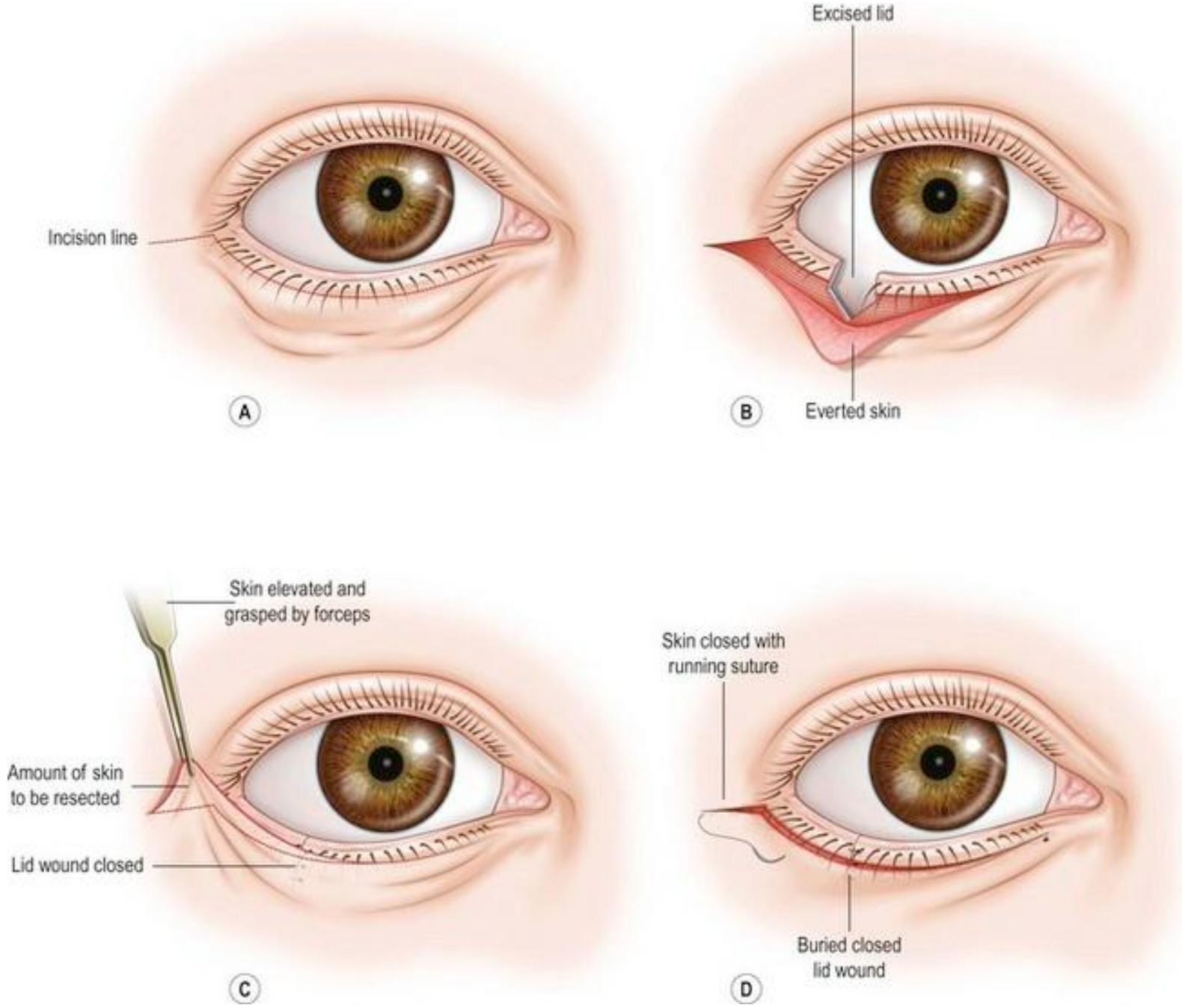


Tarsorrhaphy



Horizontal lid shortening


Location of margin sutures
A
B
C
Tarsus
7-0 silk


Incision line
A
Excised lid
B
Everted skin
Skin elevated and
grasped by forceps
Amount of skin
to be resected
Lid wound closed
C
Skin closed with
running suture
Buried closed
lid wound
D

C. Mechanical ectropion may be caused by abnormalities that push or pull the lid away from the eye. Treatment usually involves treatment of the underlying abnormality.

D. Cicatricial ectropion occurs when the anterior lamella of the eyelid (skin and orbicularis muscle) is contracted by a variety of possible causes (e.g., burns, tissue loss, traumatic scars, or inflammation). Linear and circumscribed scars may respond to massage or relaxing operations. More extensive cicatricial ectropion usually requires a skin graft.

Anterior Lamella

The anterior lamella consists of the lower eyelid skin and the orbicularis muscle.

Middle Lamella

The middle lamella consists of the orbital septum, orbital fat, and suborbicularis fibroadipose tissue.

Posterior Lamella

The posterior lamella consists of the eyelid retractor, tarsus, and conjunctiva.

Structural layers

- Skin and sub cutaneous tissue
- Muscles of protraction

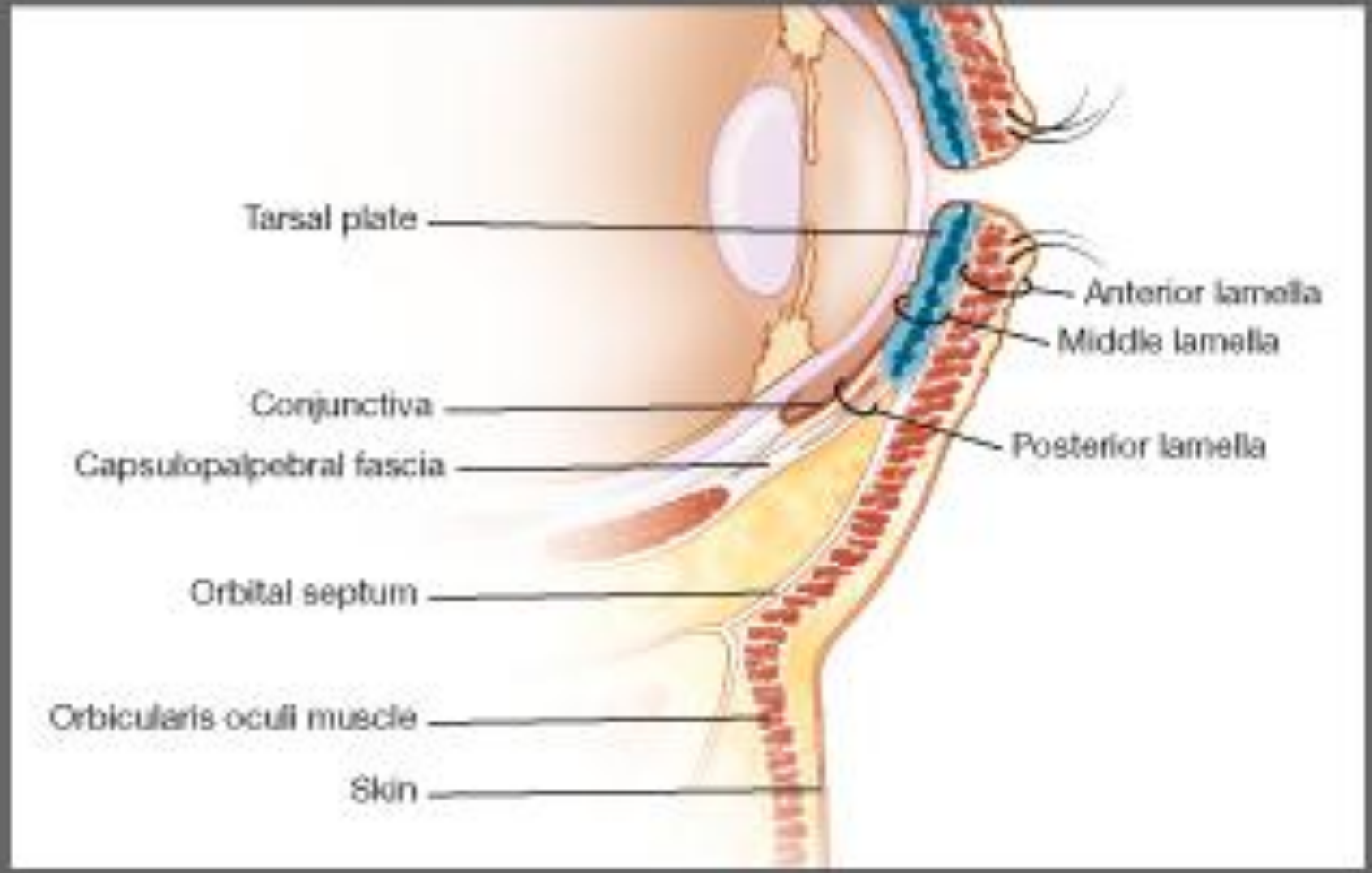
Anterior lamella

- Orbital septum
- Orbital fat

Middle lamella

- Muscles of retraction
- Tarsus
- Conjunctiva

Posterior lamella


Tarsal plate
Anterior lamella
Middle lamella
Conjunctiva
Posterior lamella
Capsulopalpebral fascia
Orbital septum
Orbicularis oculi muscle
Skin

Cicatricial ectropion in patient with periocular burn

Entropion

- **Entropion** is a malposition of the eyelid in which the lid margin is rotated toward the globe.
- **Entropion is functionally important** because in turned lid margins may damage the cornea and produce **keratitis** or **ulceration**.
- **Related conditions** that should be differentiated from entropion are **epiblepharon**, **trichiasis**, and **distichiasis**.

Entropion

Entropion with keratitis

Keratitis

- It is **an inflammation of the cornea**
- The most common causes of keratitis are infection and injury. Bacterial, viral, parasitic and fungal infections can cause keratitis.

- **Congenital entropion** is rare and is usually associated with other abnormalities such as **tarsal hypoplasia** or **microphthalmia**.
- Congenital entropion may be confused with epiblepharon, a mild deformity that usually resolves spontaneously.
- Depending on severity, this condition may be treated similarly to acquired entropion.

Congenital entropion.

Congenital entropion

Tarsal hypoplasia

Microphthalmia

Note

- **Microphthalmia**, is a developmental disorder of the eye in which one (unilateral microphthalmia) or both (bilateral microphthalmia) eyes are abnormally small and have anatomic malformations.

Acquired entropion is a common disorder that is usually either involutional, as a result of aging, or cicatricial, resulting from tarsoconjunctival shrinkage.

A.Involutional entropion

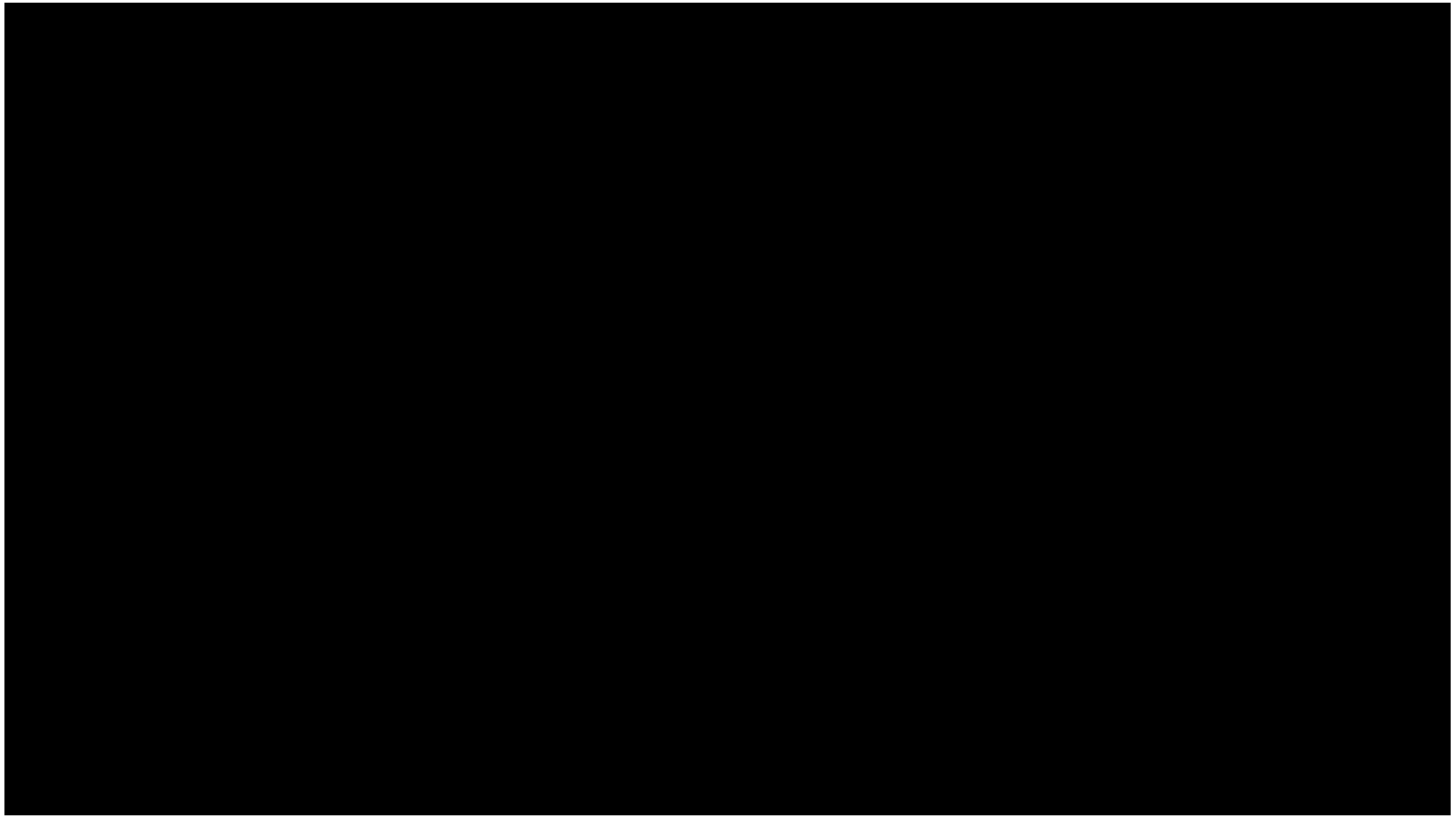
1. usually involves the lower lid and is caused by degenerative changes similar to those that cause involutional ectropion.
2. With aging, atrophy of the orbital tissues can lead to a relative enophthalmos (posterior displacement of the eye) and a tendency for inward rotation of already attenuated eyelid structures.

involutional entropion

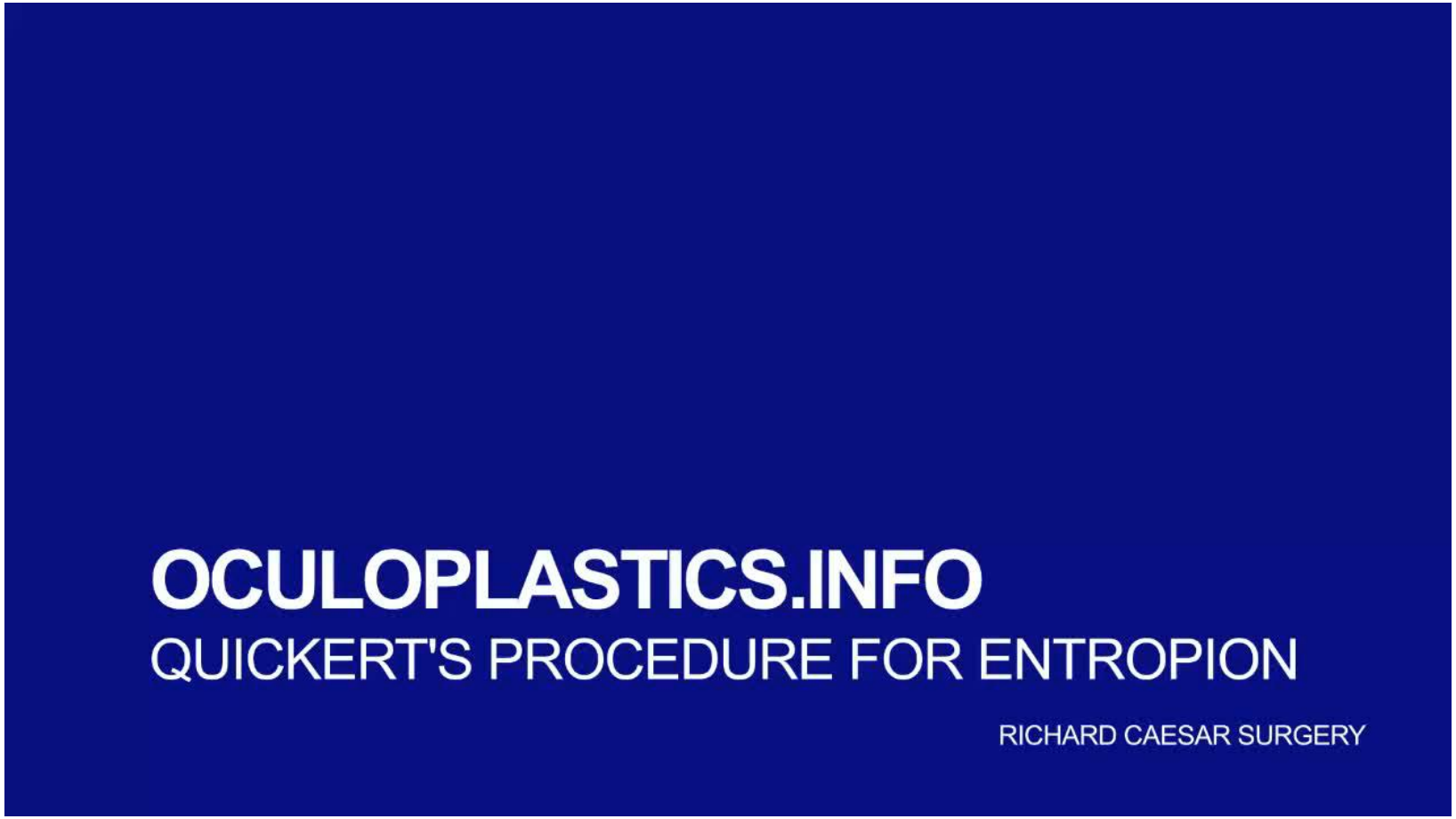
Treatment of involutional entropion

- Should be directed toward correction of those abnormalities that are most prominent.
- Lower eyelid entropion surgery. **Wies technique** or;
- **Three Quickert lid eversion sutures** may temporarily correct a moderate entropion, but may be followed by recurrence.

Lower eyelid entropion surgery. Wies technique



Quickert lid eversion procedure for entropion



B. Spastic entropion:

This *affects only the lower eyelid.*

Causes

• The structures supporting the lower eyelid (palpebral ligaments, tarsus, and eyelid retractor) may become lax with age, causing the tarsus to tilt inward.

• This causes the fibers of the orbicularis oculi muscle to override the normally superior margin of the eyelid, intensifying the blepharospasm resulting from the permanent contact between the eyelashes and the eyeball.

Spastic entropion

Blepharospasm

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Treatment of Spastic entropion

- Surgical management must be tailored to the specific situation. Usually treatment combines several techniques such as shortening the eyelid horizontally combined with weakening the pretarsal fibers of the orbicularis oculi muscle and shortening the skin vertically.

C. Cicatricial entropion is usually the result of **tarsoconjunctival shrinkage**. This may be caused by a wide variety of disorders, including:

- Trachoma,
- Stevens-Johnson syndrome,
- Pemphigus,
- Ocular pemphigoid, and
- Mechanical, thermal, or chemical injury.

Trachoma

Trachoma

Also called **granular conjunctivitis**, Egyptian ophthalmia, and **blinding trachoma**, is an infectious disease caused by bacterium **Chlamydia trachomatis**. The infection causes a roughening of the inner surface of the eyelids. This roughening can lead to pain in the eyes, breakdown of the outer surface or cornea of the eyes, and possibly blindness. Untreated, repeated trachoma infections can result in a form of permanent blindness when the eyelids turn inward.

Stevens–Johnson syndrome

a form of toxic epidermal necrolysis, is a life-threatening skin condition, in which cell death causes the epidermis to separate from the dermis. The syndrome is thought to be a hypersensitivity complex that affects the skin and the mucous membranes. The best known causes are certain medications (such as lamotrigine), but it can also be due to infections, or more rarely, cancers

Lamotrigine is an anticonvulsant drug used in the treatment of epilepsy and bipolar disorder.

Stevens-Johnson syndrome

Stevens-Johnson syndrome

Pemphigus

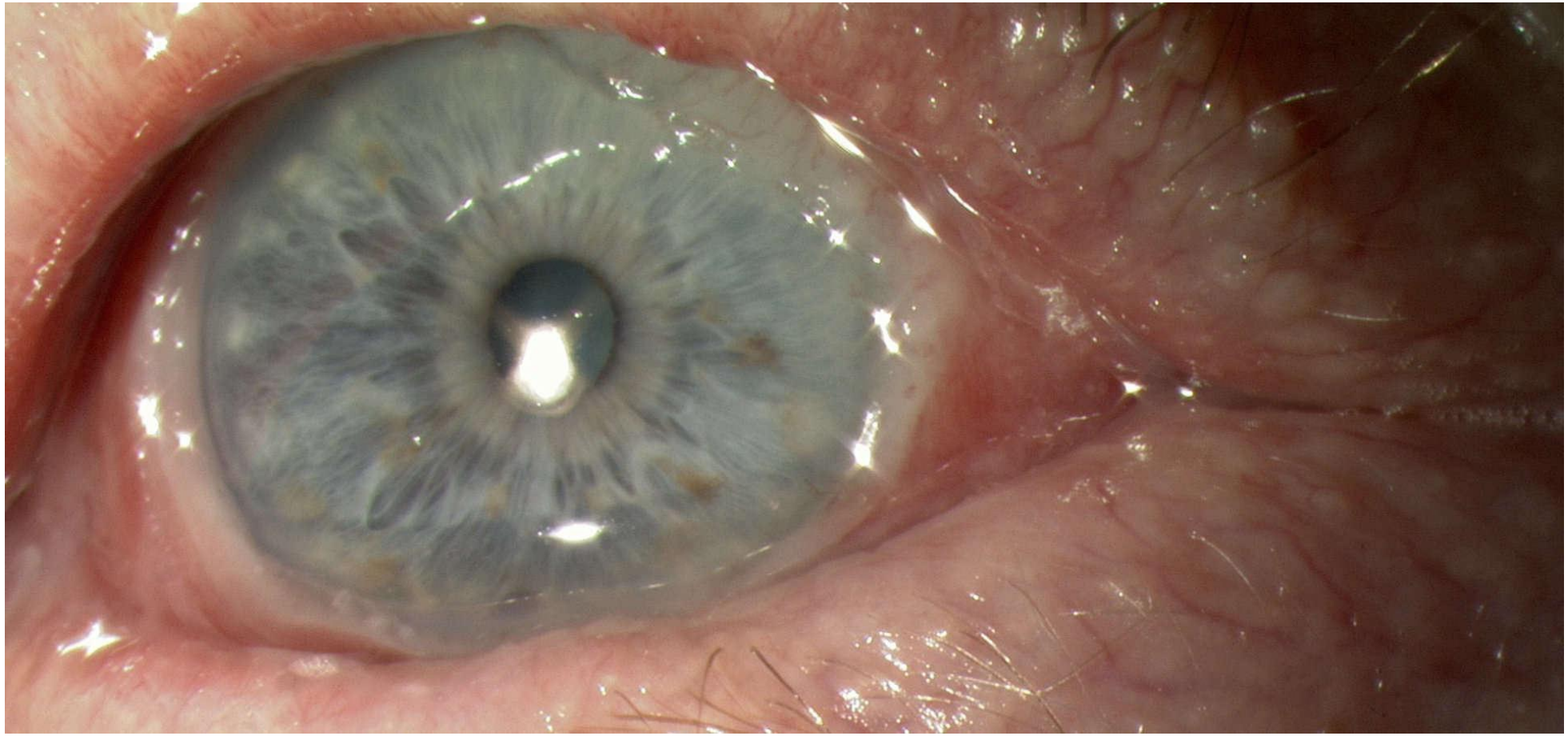
- is a rare group of **blistering autoimmune diseases** that affect the skin and mucous membranes.
- In pemphigus, autoantibodies form against **desmoglein**.
- Desmoglein forms the "glue" that attaches adjacent epidermal cells via attachment points called **desmosomes**.
- When autoantibodies attack desmogleins, the cells become separated from each other and the epidermis becomes "unglued", a phenomenon called **acantholysis**. This causes blisters that slough off and turn into sores. In some cases, these blisters can cover a significant area of the skin.

Pemphigus

Pemphigus

Pemphigus of the eyes

Ocular **Cicatricial** pemphigoid



- **Cicatricial changes are often accompanied by (complicated by):**

1. Trichiasis,
2. Reduced tear production,
3. Mucosal epidermalization, and
4. Punctal occlusion.

- Treatment may consist of marginal rotation of the lid margin and grafts of mucosa or other tissue to replace contracted tarsus and conjunctiva.

Trichiasis

- is a medical term for **abnormally positioned eyelashes** that grow back toward the eye, touching the cornea or conjunctiva.
- This can be caused by infection, inflammation, autoimmune conditions, congenital defects, eyelid agenesis and trauma such as burns or eyelid injury. It is the leading cause of infectious blindness in the world

Trichiasis

Cicatricial entropion


ectropion
cicatricial entropion
entropion
trachoma
allergic conjunctivitis
conjunctivitis
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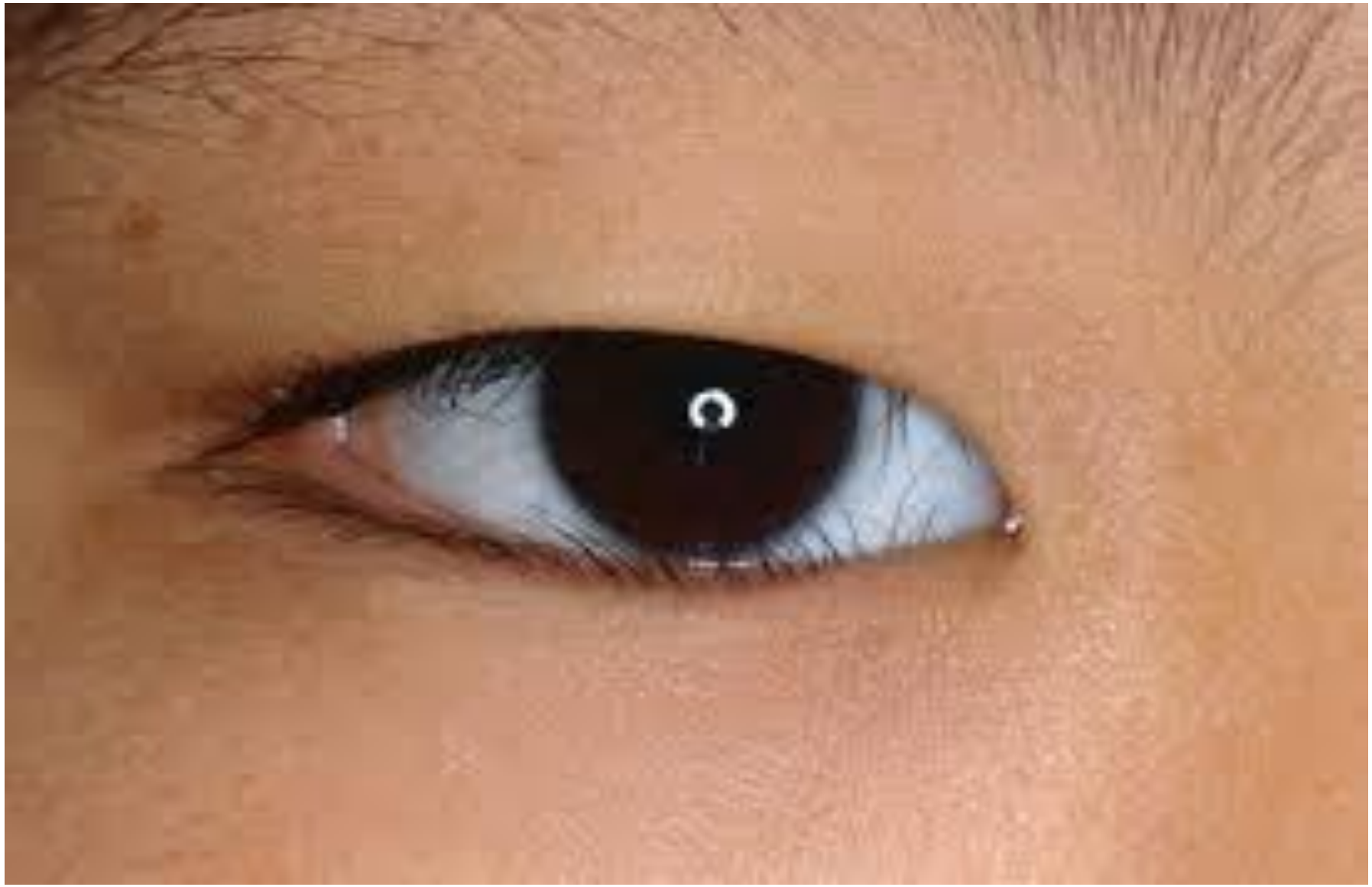
Epiblepharon

- **Epiblepharon** is a relatively common condition in which a **prominent skin fold is present in front of the tarsus**, usually near the medial margin of the lower lid. The lashes may be rotated inward without actual rotation of the eyelid margin (entropion). Surgical correction is seldom required, because epiblepharon usually resolves spontaneously.

Epiblepharon

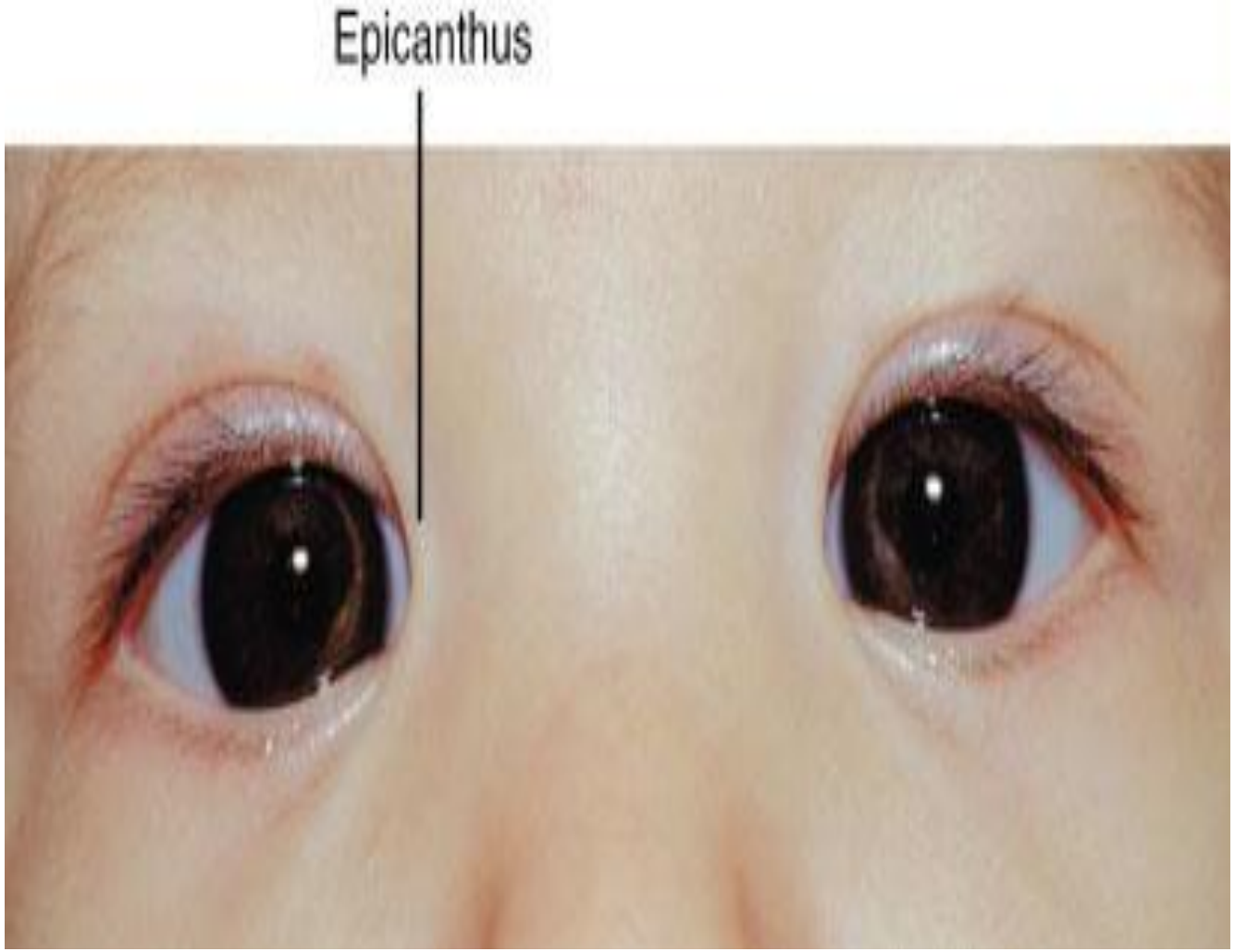


Epiblepharon

Pseudoptosis is a condition in which the upper eyelid appears to be abnormally low without insufficiency of the lid elevators.

Causes of pseudoptosis include:

A. Epicanthus and facial asymmetry.
B. Excessive upper eyelid skin, as found in dermatochalasis (very common).
C. Contralateral palpebral fissure widening.
D. Palpebral fissure narrowing associated with adduction in Duane retraction syndrome
E. Hypertropia or contralateral hypotropia.
F. Enophthalmos or contralateral exophthalmos.


Epicanthus

Dermatochalasis

is a medical condition, defined as an **excess of skin in the upper or lower eyelid, also known as "baggy eyes."**It may be either an acquired or a congenital condition. It is generally treated with blepharoplasty

Dermatochalasis

Dermatochalasis

Note

- **Duane syndrome** is a congenital rare type of strabismus most commonly characterized by the inability of the eye to move outwards.

Blepharospasm

- **Blepharospasm** is a disorder of unknown cause that involves **involuntary closure of the eyelids**. The severity of this closure ranges from mild increased frequency of blinking to severe spasms that completely occlude the eyes.
- **Essential blepharospasm**, in which the eyelids are chiefly involved, is distinguished from conditions such as **Meige's disease**, in which lower face and neck muscles also spasm, and hemifacial spasm, which may be caused by facial nerve compression.

Treatment of blepharospasm

- Currently, **botulinum toxin** injections are considered the most effective treatment for the majority of patients with this condition. Multiple small amounts of the toxin are injected into the muscles around the eyelids.
- Blepharospasm is usually relieved within several days, but the effect is temporary and additional injections are often necessary within 3 months. Side effects include ptosis, double vision, and drying of the eyes from inability to close the lids.

To be continued.....