

Corneal Protection

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Risk factors for corneal exposure

Lagophthalmos, poor Bell's phenomenon, insensitive cornea, dry eye.

Management of corneal exposure

Early: lubricants, 'moist chamber' (waterproof cover over the eye), traction sutures, botulinum toxin

Later: definitive surgery - to correct residual lid malpositions after any recovery of function has occurred

Principles of early & late surgical management

Confirm which *risk factors* are the cause of the exposure

Surgery is aimed at lagophthalmos (incomplete or delayed closure)

To correct lagophthalmos - *reduce the palpebral aperture:*

- *vertical:* lower the upper lid, raise the lower lid
- *horizontal:* lateral tarsorrhaphy, medial canthoplasty

Causes & surgical management of lagophthalmos

Tight layers of the lid

- *tight skin* - tight anterior lid lamella usually causes cicatricial ectropion but may cause retraction
- *tight lid retractors* - the most common cause of lid retraction
- *tight conjunctiva* - tight posterior lamella usually causes cicatricial entropion but may cause lid retraction
- *more than one layer may be involved*

Management - release the contracted layer.

(a) Tight skin

- *diffuse scar* - skin graft. Full thickness if available (eg upper lid, pre or postauricular)
- *linear scar* - z-plasty

(b) Tight retractors

(i) *Posterior approach*

- mild retraction: 2mm - recess Muller's muscle
- moderate retraction: >2 mm - recess Muller's + levator

(ii) *Anterior approach*

- moderate retraction: >2 mm - recess Muller's + levator:
retractor hang-back sutures or full thickness lid
division: recess Muller's + levator + conjunctiva
- marked retraction: >3mm - insert spacer

(c) Tight conjunctiva

- *diffuse scar* - mucosal graft.
- *linear scar* - z-plasty

(d) More than one layer

- combination of above techniques

Proptosis

May compromise lid closure. Mainly due to thyroid eye disease.

Management - control the thyroid orbitopathy medically in the acute phase.
Consider whether lid surgery alone will control exposure. Consider tarsorrhaphy +/- orbital decompression.

Tight inferior rectus muscle: a cause of reduced bell's phenomenon and potential exposure with upper lid retraction except in downgaze.

Management - inferior rectus recession.

Facial palsy:

Common cause of exposure

Management - assess prognosis for recovery. Correct lower lid ectropion.
Consider upper lid lowering or gold weight.

Lid defects:

Management - reconstruct the lid.