
MANAGEMENT OF EYELID RETRACTION :

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Introduction :

The normal position of the upper lid is midway between the pupil and the superior limbus, whilst the lower lid rests on the inferior limbus. Lid retraction occurs when the upper lid is at or above the superior limbus and when the lower lid is greater than 1mm below the inferior limbus.

Lid retraction may be a normal racial or familial attribute.

Causes of lid retraction (in order of frequent clinical presentation) are :

1. Thyroid eye disease (fig 1)
2. Ocular surgery :
 - overcorrected ptosis (figs 2 & 3)
 - squint
3. Ocular condition ;
 - contralateral ptosis
 - myopia
4. Neurological :
 - the dorsal mid brain syndrome
 - hydrocephalus
5. Congenital
6. Systemic
 - cirrhosis
 - cushings
 - uraemia
 - chronic obstructive airway disease
 - superior vena caval syndrome
 - hypocalcaemic periodic paralysis
7. Medication
 - Sympathomimetic drugs
 - lithium
 - steroids

Indications for surgery for lid retraction :

1. Exposure
2. Cosmesis

As thyroid eye disease is the most common cause of lid retraction, this discussion is mainly limited to its management. Other causes of lid retraction (overcorrected ptosis, congenital lid retraction, etc) can all be corrected by the same operations, depending on the degree of lid retraction and the laterality.

A. Dysthyroid Upper Lid Retraction (ref 1-2) :

The mechanisms of upper lid retraction are :

1. Sympathetic stimulation to muller's muscle
2. Increased tone & overaction of levator superior rectus muscle complex secondary to fibrosis of the inferior rectus.
3. Levator inflammation and fibrosis
4. Increased proptosis acting as a wedge

Management in the acute phase :

1. Lubricants
2. Temporary tarsorrhaphy
3. Guanethidine to medically control the retraction

Management in the chronic phase :

Fifty percent of lid retraction resolves spontaneously within the first year.

If there is secondary lid retraction i.e. lid retraction markedly increases on upgaze, inferior rectus recession should be considered. Surgical correction of the upper lid retraction is performed only after the acute phase of the disease has resolved and following any squint surgery. If there is significant proptosis, it is advisable to proceed with orbital decompression to place the globe back in its normal position, prior to proceeding with lid repositioning. (ref 1-2)

Surgical aims of treating upper lid retraction

1. Abolition of scleral show
2. Production of normal eyelid contour
3. Maintain normal skin crease
4. Regain or retain symmetry.

Surgery for upper lid retraction :

Surgical approach can be posterior (tarso - conjunctival) or anterior (transcutaneous)
 Surgical procedures exist to weaken the levator complex by either a mullerotomy or mullerectomy with or without a levator recession, or a lengthening of the levator complex by a marginal myotomy. It is preferable to lower the upper lid under an local anaesthetic. If a general anaesthetic is being used adjustable sutures are advocated to adjust the lid height when the patient is awake and co-operative (fig 4).

Recommended guidelines depend on the degree of lid retraction. Muller's muscle surgery alone relieves approximately 2 mm of lid retraction.

Muller's muscle and levator surgery relieves approximately 4-6 mm of lid retraction. For greater recessions spacers should be considered. Particular emphasis is made on weakening the lateral aspect of the levator muscle (lateral horn and Whitnalls ligament) to avoid the common post operative appearance on lateral or temporal flare (ref 3-10).

Once the lids are in an appropriate position, further cosmetic procedures such as blepharoplasty, fat debulking or lateral tarsorrhaphy can be considered.

Posterior Approach

1. Mullerotomy / Mullerectomy
2. Henderson's procedure - mullerectomy +/- levator tenotomy

Anterior Approach

1. Free levator tenotomy or recession
2. Levator muscle marginal myotomy (Grove)
3. Levator recession on adjustable sutures (Collin)
4. Insertion of spacers (Callahan, Mourits)
5. Combined muller's and levator muscle surgery (Putterman, Harvey and Anderson)

Spacer materials used :

1. Autologous - ear cartilage, hard palate or tarsus
2. Allogenic - sclera
3. Artificial - gortex.

Complications of lid lowering :

1. Contour defects in the form of nasal ptosis and temporal (lateral) flare.
2. Undercorrection.
3. Overcorrection - with resultant ptosis.
4. Progression of fibrosis of the levator complex with recurrence of lid retraction.
5. High skin crease and resultant asymmetry.
6. Infection or extrusion of the spacers used.

B. Dysthyroid Lower Lid retraction (fig 5) :

The mechanisms of lower lid retraction are :

1. Shortening of capsulopalpebral fascia and inferior tarsal muscle.
2. Inflammation and fibrosis secondary to the contiguous inferior rectus.
3. Inferior rectus surgery and orbital decompression
4. Gravity.

Surgical procedures to correct lower lid retraction :

1. Weakening of the lower lid retractor complex may

lower lid retraction to small degree, but are ineffective for lid retraction greater than 1-2mm.

2. For > 2mm of lower lid retraction, insertion of spacers in a ratio of 3:1, widest laterally are advocated. A hard palate mucous membrane graft is preferred (fig 6).
3. Surgery to lateral canthus - lateral tarsorrhaphy or an enhanced lateral canthal sling.

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Fig 1 : Dysthyroid eye disease : Bilateral upper lid and lower lid retraction



Fig 2 : Overcorrected levator resection :left lid 1mm above superior limbus



Fig 3 : Overcorrected unilateral brow suspension with fascia lata :right lid at superior limbus



Fig 4 : Dysthyroid upper lid retraction : Corrected with adjustable sutures. Note unilateral progression of fibrosis with right lateral flare, whilst other lid maintains a good cosmetic result..



Fig 5 : Dysthyroid lower lid retraction - pre operative



Fig 6 : Postoperative appearance following lower lid retraction correction by hard palate grafts.