Managing Marcus Gunn Ptosis - Our Approach

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Abstract

Marcus Gunn ptosis is a congenital synkinetic ptosis due to an abnormal innervation of the levator muscle. Aim of the surgical treatment is to eliminate jaw winking phenomenon and correct ptosis. Moderate to severe jaw winking ptosis is best corrected by excision of the levator aponeurosis with frontalis suspension. Bilateral levator excision with bilateral fascia lata suspension gives the most symmetrical and aesthetically pleasing results. The surgical technique is highlighted in the article.

Keywords: jaw winking, ptosis, fascia lata, Marcus Gunn Phenomenon

Introduction

Marcus Gunn Ptosis constitutes about 4-5% of all congenital ptosis. Management of the condition is challenging. A single stage surgical technique of bilateral levator excision with bilateral fascia lata sling surgery is presented. The technique eliminates jaw winking, maintains symmetry, provides excellent aesthetics by avoiding contour and lid position abnormalities, as no tarsal fixation of the sling is required.

Management of ptosis with Marcus Gunn Phenomenon (MGP) depends on the severity of ptosis and the extent of MGP.

Mild MGP (<2mm) - managed by procedures like Fasanella Servat or levator resection, depending on levator action. Larger resections may be needed in levator surgery and undercorrections are more common.

Significant MGP (>2mm) – Management options include:

- Unilateral levator excision with frontalis sling: Asymmetric lid lag and lagophthalmos
- Unilateral levator excision with bilateral frontalis sling: removes asymmetry but often results in apparent undercorrection of the involved eye, due to inadequate use of frontalis.
- Bilateral levator excision with bilateral frontalis sling

Principles of Surgery

- To eliminate Jaw winking (where significant) by levator excision
- To correct ptosis by frontalis sling

Ocular motility disorders, when associated, need to be tackled before the ptosis surgery to eliminate pseudoptosis and improve the Bell’s phenomenon.

Surgical Technique

All cases are done under general anaesthesia. Infiltration with 2% xylocaine and 1:2,00,000 adrenaline is done in the region of the proposed incision, in the thigh, eyelid and eyebrow region, after initial marking.

Fascial lata is harvested using the standard technique and cut into 4 equal strips.

Fascia Lata sling Suspension

Three traction sutures are passed along the lid margin. Four incisions are marked 2-4mm above the margin. The placement of these determines the position of the lid fold. The two central incisions are on either side of the center of the lid while the other two are just outer to the junction of middle and lateral thirds and just inner to the middle and medial thirds of the lid respectively. An incision is also marked at the proposed site of lid crease.

The two eyebrow incisions are marked next. The lateral one is made on a line perpendicular to the two lateral eyelid incisions and while the medial one is marked on a line perpendicular to the line joining the two medial incisions, with the eyelid positioned in the desired corrected position. A third mark is made on the forehead between the two eyebrow marks, about 4-6 mm higher than them.

The eyelid crease incision is given through the skin and eyebrow region, after initial marking. Other incisions are made along the marks. Orbicularis is dissected from the underlying orbital septum. Any dissection on the surface of the tarsal plate is scrupulously avoided. The orbital septum is cut completely across exposing the preaponeurotic fat. Fat is retracted posteriorly to reveal the underlying tendinous aponeurosis. The levator is dissected from the adjoining structures. The lateral and the medial horn are cut. Excision of a large segment of levator aponeurosis is carried out (Figure 1a).

The eyelid incisions are made down to the tarsus and the brow incisions are made up to the frontalis. Blunt dissection is carried out to make pockets for the fascial knots. The fascia lata strip is passed between the two outer eyelid incisions using a mosquito forceps. The Wright fascia lata needle is passed in the submuscular plane from the lateral eyebrow incision to emerge at the lateral eyelid incision. The fascia is threaded through the eye of the needle and is pulled through. The Wright’s needle is again passed from the lateral brow incision to the second eyelid incision, threaded with fascia and drawn up. The procedure is repeated on the medial side (Figure 1b,c). A single tie is made of both, the lateral and medial fascial strips, to place the eyelid margins...
as high as possible, without lifting the eyelid off the globe. After the tie the position and contour of the eyelid are re-assessed. Required adjustments are made. Presence of good lid crease at this stage is ensured. A second tie is then made and the fascia knots are secured using 5-0 vicryl (Figure 1d). One end of fascial strip from each brow incision is then pulled through the central forehead incision. Knots are tied and secured (Figure 1e). All the knots are buried in the pockets prepared for them. The excess of skin is excised by removing a spindle of skin from above the eyelid crease (Figure 1f). Eyelid margin incisions require no closure. The brow incisions and the lid crease incision are closed with 6-0 nylon. Patients are prescribed oral antibiotics and anti-inflammatory agents.

Our experience
A retrospective analysis of records of 165 patients with significant MGP ptosis, operated between 1994 to 2014, was carried out. 73 patients underwent unilateral levator excision with bilateral fascia lata sling while in 92 patients bilateral levator excision with bilateral sling was done. Elimination of jaw winking was achieved in 96.2% of all cases. Good result was defined as asymmetry of habitual MRD of ≤1 mm, while a fair result was asymmetry of 1.5-
bilateral fascia lata sling surgery after levator excision for moderate-to-severe jaw-winking ptosis. Patients underwent unilateral levator excision, with good results in 2 patients (40%) and poor in 3 (60%). Of the 19 patients who underwent bilateral levator excision, results were good in 13 (68.4%) and fair in 6 (31.6%) patients. Demirci H et al reported good results in 88% of the 26 patients who underwent unilateral levator excision with bilateral fascia lata sling and in 75% of the 4 patients who underwent unilateral levator excision with unilateral frontalis sling. Reported complications following ptosis surgery include, an asymmetrical lid level, undercorrection/overcorrection, loss of lid crease with eyelash ptosis, overhanging skin fold, entropion, lagophthalmos etc. In our series undercorrection and asymmetry was seen in cases of unilateral levator excision due to inadequate usage of frontalis muscle in the ptotic eye.

**Conclusion**

Marcus Gunn jaw winking ptosis is a difficult surgical problem. Unilateral frontalis sling suspension with levator excision can correct ptosis, however bilateral levator excision with bilateral fascia lata sling provides a symmetrical and aesthetically gratifying result, and is the procedure of choice.

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