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Case Series

Study of Asian blepharoplasty with concurrent ptosis correction by LPS plication: Our experiences in northeastern India

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Abstract

Asian blepharoplasty is one of the most performed facial cosmetic procedures in northeastern India. Undiagnosed ptosis often goes unnoticed in many Asian blepharoplasty patients. To achieve proper symmetry, its essential to address ptosis simuntaneously during Asian blepharoplasty. In this study, the author discuss ten cases of Asian blepharoplasty in which simultaneous ptosis correction was performed by LPS plication.

Keywords: Asian blepharoplasty, Ptosis correction, LPS plication.

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1. Introduction

Asian blepharoplasty, in which a supratarsal crease is formed, is commonly referred to as the "double-eyelid" procedure.[1] A common mistake among Asians is to undergo blepharoplasty without first thoroughly assessing for eyelid ptosis. Consequently opting for double eyelid surgery without addressing the ptosis issue often results in less than desirable outcomes. Ptosis correction should be simultaneous with lid crease surgery to achieve proper symmetry, especially in unilateral ptosis.

The author hereby presents a full incisional double lid surgery with modified levator aponeurosis-muller muscle reinforced plication which creates a double fold and also corrects ptosis.

2. Materials and Methods

We operated 10 patients operated between December 2021 to September 2023. Who presented to the Department of Ophthalmology, at Trihms Medical College & Hospital, Naharlagun, Arunachal Pradesh, India.

Patients with mild to moderate ptosis with levator function ≥ 5mm, posted for Asian blepharoplasty with concurrent ptosis (unilateral or bilateral).

Written consent was taken from all patients. MRD1, MRD2, tarsal height, and LPS action were noted. Patients were called for follow-up on day 10, 1 month and 3 months.

3. Case Series

3.1. Preoperative stage

The location of the desired eyelid crease is marked after showing them the mirror which is mostly 5-8 mm from the lid margin. The skin pinch method was used for marking both in sitting and supine positions.

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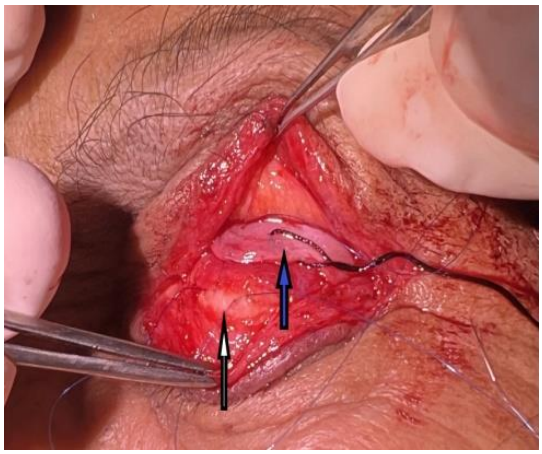

Figure 1: The blue arrow indicates the lower palpebral skin (LPS), and the white arrow indicates the tarsal plate. A horizontal mattress suture using double-armed 6-0 Prolene is seen passing through the partial thickness of the tarsus, elevating the levator and Müller's muscles

Figure 2: In the picture its shows temporary knot being tied for LPS plication which will be converted to permanent knot after confirming the desired eyelid height.

Painting and draping are done. Local anesthesia (2% lignocaine) was injected. Skin incision was made on the previous marking and any excess skin is removed depending upon the excess. A blunt tipped intrsument was used to dissect the space beneath the orbicularis oculi muscle. The muscle was incised and preseptal fat was identified. The orbital septum lying underneath was incised. The underlying white, shiny levator muscle was observed beneath the preaponeurotic fat.

Levator aponeurosis was exposed and distal fibers were disinserted from its insertion of tarsus leaving the anterior fibers intact along with mullers muscles. 3 double-armed 6-0 prolene suture is then placed at partial thickness through the anterior surface of the tarsus, at the midpoint of the pupil, at the medial limbus, and at 2mm from the lateral limbus. The levator tissue along with the muller muscle was humped and secured using a 6-0 prolene suture in a horizontal mattress suture technique and temporary knot tied. Then, in supine position, the height and contour were inspected. After confirmation temporary knot is converted to permanent tie. Lid crease forming suture put through skin- orbicularis-levator - orbicularis -skin and skin closed with 6-0 vicryl suture at centre of pupil, medial limbus and 2mm from lateral limbus. Rest skin closed with 6-0 prolene. Post-operatively all patients were examined for any complications on day 10, 1 month and 3 months

4. Results

All of them were female. 4 patients had bilateral ptosis while 6 patients had unilateral ptosis. 6 cases were congenital and 4 involutional. Age group range were from 21-50 years.

8 patients achieved desired height and crease. Ptosis correction was assessed based on mrd1 value postoperatively which was 4 mm in 8 patients.

The complications noted included:

1. Loss of eyelid fold and ptosis recurrence in 1 patient.
2. Undercorrection in 1 case
3. Temporal flare and assymtery in another case.

Figure 3: Pre and postoperative left ptosis correction with bilateral Asian blepharoplasty

Figure 4: Pre and post operative bilateral Asian blepharoplasty with bilateral ptosis correction

5. Discussion

Among patients with Asian eyelids, double eyelid surgery is one of the most commonly sought-after cosmetic procedures.

When addressing blepharoptosis in Asian eyelids, some surgeons might consider removing excess skin in cases resembling pseudoptosis. However, it's important to note that a significant portion of Asian eyelid patients experience true ptosis.

The crucial aspect of a successful end result in blepharoptosis surgery rests on the proper selection of the appropriate surgical intervention.[2] In this aspect, the function of the levator muscle is reported as the single most important factor in selecting the correct type of procedure.[3]

Conventional levator aponeurosis plication involves opening of the orbital septum, pushing the orbital fat up, and folding the aponeurosis to the tarsus.[4] Indeed levator plication is linked with a significantly high recurrence rate. The high recurrence rate after this surgery is attributable to the lack of strong and permanent adhesion formed by the smooth aponeurosis in the absence of wounds.[5,6]

In our approach posterior layer of levator aponeurosis along with the muller muscle muscle is advanced and reinforced into the tarsus. Plicating these layers together can harness the strength of the muller muscle, enhancing efficiency and reducing the likelihood of recurrence.

In study by DS Ng et al.[7] 44 lids of 27 patients were included. Preoperative mean MRD was 0.48 ± 0.56mm. Severe ptosis of MRD < 1 mm was present in 34/44 patients (77.3%). The postoperative mean MRD was 2.49 ± 0.53mm, and mean improvement was 2.02 ± 0.61mm, which was statistically significant ($P < 0.001$). The overall success rate was 38/44 (86.4%). Minimal incision posterior approach to levator plication was effective for the correction of aponeurotic ptosis with moderate to good levator function.

In similar study by Park KS,[8] marginal reflex distance 1 (MRD1) increased from 1.92 to 2.84 mm in the whole patient group after upper blepharoplasty; it increased the most in blepharoplasty with simultaneous ptosis correction (1.22 mm). Percentage of the area of corneal exposure (%ACE) increased from 62.1 to 76.6% (14.5%), whereas brow height decreased from 29.4 to 26.7 mm (9.2%).

Many surgeons prefer to perform levator repair under local anesthesia; this offers the benefit of a monitored levator advancement, allowing the eyelid height to be adjusted during surgery with the voluntary cooperation of the patient. Additionally, the use of local anesthetic may affect levator muscle function, and the presence of epinephrine can lead to the contraction of Muller's muscle, potentially obscuring the true resting lid level. In our study, we didn't encounter this issue, as we administered no more than 1.5 cc of local anesthetic. (Lignocaine 2% only). Hemostasis was obtained using radiofrequency cautery.

6. Conclusion

The levator aponeurosis-muller muscle reinforced plication proves to be a straightforward and efficient procedure for correcting mild to moderate ptosis in patients undergoing Asian blepharoplasty.

This study had some limitations such as the small sample size, limited follow-up time, and no satisfaction survey with questionnaires. Larger series or multicenter studies would be useful in the future.

7. Source of Funding

None.

8. Conflict of Interest

None.

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