

ORIENTAL EYELIDS – ANATOMICAL AND SURGICAL CONSIDERATIONS

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ABSTRACT

There are subtle anatomical differences between the oriental and occidental eyelids. Creation of upper eyelid crease, otherwise known as "Double Eyelid" has been the single most popular cosmetic surgical procedure among the affluent Asians to enhance the beauty of their eyelids. It is important for the surgeon to be familiar with the anatomical differences in order not to westernise their facial features but to blend his creation with the existing facial features. This is true of any surgical procedure in the lids, be it ptosis correction or blepharoplasty for excess skin and bags in the eyelids, in order to produce good cosmetic results.

Keywords: Double eyelid, lid crease, orbital septum and levator attachment, oriental and occidental eye lids, Asian blepharoplasty.

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INTRODUCTION

The differences between the oriental and the occidental eyelid have stimulated a lot of interest recently. Western eye is set horizontally in the orbit with a deep eyelid crease, wide palpebral fissure and long lashes. It is said to give a cheerful and energetic look. Oriental eye is set obliquely with a narrower palpebral aperture and fullness in the upper lids. Frequently an epicanthal fold is present. The oriental eye is said to give a mysterious, charming and exotic look.

Why is it necessary to study the differences in detail?

1. Creation of upper eyelid crease is the single most popular cosmetic surgical procedure among the affluent Asians. The purpose behind this is to enhance their beauty, and certainly not an attempt to westernise their facial features. If the surgical correction imposes an occidental look it must be considered a failure as the patients are extremely unhappy with the result. The other name for the eyelid crease is "Double Eyelid" and is used extensively in both the medical profession and by the lay public in most parts of Asia.
2. The differences in anatomy also become important when the surgeon is attempting to correct a ptosis. It is essential to produce a lid crease at the end of the surgery that is aesthetically acceptable to the patient and does not violate his or her racial identity.
3. In blepharoplasties, cosmetic or otherwise, the technique described in the western literature has to be modified to suit local needs.

Anatomical Differences

The anatomical differences are very well described with cadaver dissections by the Hisatomi and Fijino⁽¹⁾ and Doxanas and Anderson⁽²⁾.

The upper lid complex consists of skin, subdermal fat and connective tissue, orbicularis oculi muscle, tarsal plate, orbital septum, preaponeurotic fat pad, levator aponeurosis, Muller's sympathetic muscle and conjunctiva (Fig 1a & 1b).

Skin of the upper lid is very thin and elastic. There is a slight difference in the texture of the skin between the two ethnic groups. The skin and the subdermal areolar tissue are slightly thicker in the oriental eyes especially in the younger age group. Oftentimes there is an epicanthic fold that is absent in the occidental eyes.

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There is an extra layer of submuscular fat layer that is deep to the orbicularis. This is peculiar to the oriental eyes and is said to be present in 84.5% of patients⁽³⁾. This layer should not be confused with preaponeurotic fat pad.

The tarsal plate itself seems to be less wide in oriental eyes. The average width in occidental eyes is 10 mm and in the oriental eyes much less.

The major differences, however, lie in the orbital septum and levator aponeurosis.

The levator muscle arises from the apex of the orbit and becomes aponeurotic in the anterior 10 mm or so. The aponeurosis gains attachment to the anterior surface of the tarsus. The lid crease or the double eyelid is formed by its attachment to the orbicularis and the subcutaneous tissue of the skin (Fig 1a). In a significant percentage of the East Asians (about 70%) the distal attachment is absent or rudimentary leading to an absence of lid crease (Fig 1b).

The orbital septum starts from the superior orbital margin and normally fuses with the levator aponeurosis at about the upper border of the tarsus. The preaponeurotic fat is wedged between the levator aponeurosis and the septum. Thus, the septum holds the fat from prolapsing into the lid. In old age the septum can become thin and stretched allowing the fat prolapse into the lids causing bulges in the medial corners of the eyelids.

In Asian eyes, the orbital septum fuses with the levator at a much lower level, as a result the preaponeurotic fat migrates anteriorly in the lid (Fig 1b). This gives the fullness that one sees in the Asian eyes. This lower attachment of the septum appears to prevent the distal aponeurotic fibres from attaching to the orbicularis and the subcutaneous tissue anteriorly. This explains the absence of lid crease in oriental eyelids. In those people where the levator does gain attachment to the orbicularis and the subcutaneous tissue, the attachment has to be below the septal attachment to the levator. This explains the lower placement of lid crease when present.

Different forms of lid crease: (Fig 2)

1. Absence of lid crease
2. Typical occidental crease
3. Inside fold with tapering lid crease
4. Parallel lid crease
5. Multiple creases
6. Incomplete crease

Surgical Considerations

The technique of performing lid crease enhancement in Asians must be tailored to the lid anatomy of the individual patient. I use the technique well researched by Chen W P⁽⁴⁾ with slight modifications. It is as follows:

Fig 1a - Cross section of upper lid of an occidental eye.

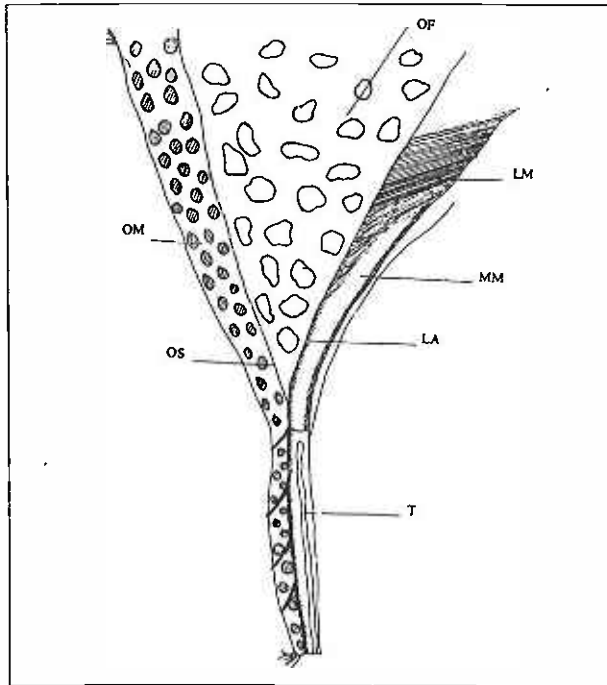
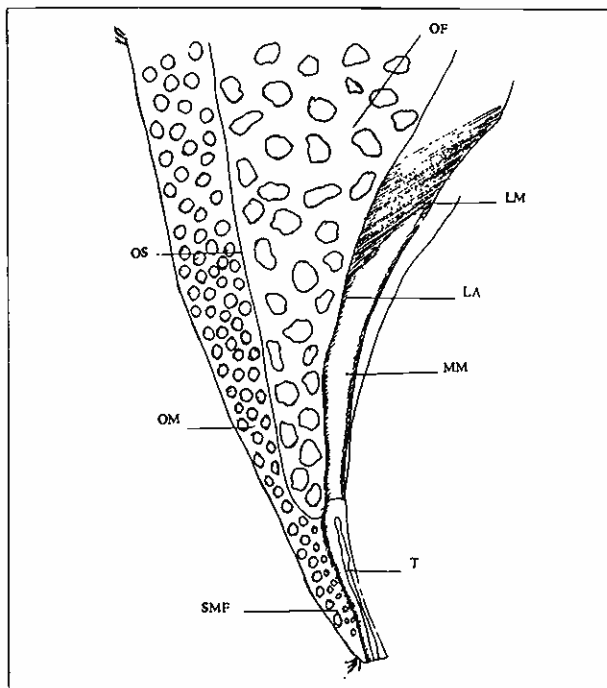


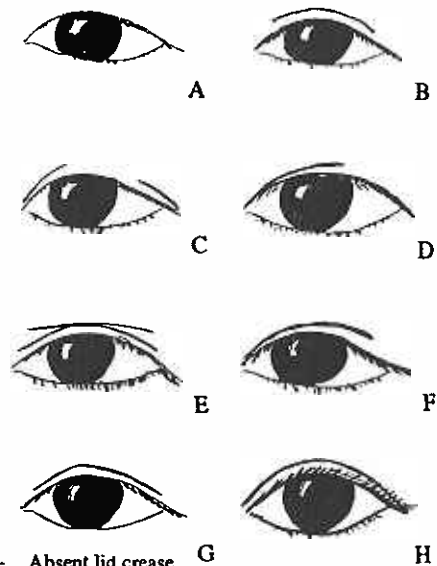
Fig 1b - Cross section of upper lid of an oriental eye. Note the orbital septum overhanging upper margin of tarsus causing fullness of lid.



- T - Tarsus, OM - orbicular's muscle
- OS - orbital septum, OF - orbital fat
- LA - Levator aponeurosis
- LM - Levator muscle
- MM - Muller's muscle
- SMF - Sub-Muscular Fat

After adequate anaesthesia the upper lid is everted and the tarsal width is measured carefully over the central, medial and lateral portions and transposed to the skin side. This will constitute the new lid crease position. The lateral extent is marked slightly higher than the central or at the same level as the central mark. If there is excess skin, it is marked in an

Fig 2 - Different creases



- A - Absent lid crease
- B - Continuous crease
- C & D - Incomplete crease
- E - Multiple crease
- F - Low crease
- G - Parallel crease
- H - High crease

elliptical fashion and excised. It is advisable to stay within the lateral canthus. The epicanthic fold is untouched as this area has tendency to scar too much. Only 2-3mm of the muscle is excised along with submuscular fat, if any, from the lower flap. The orbital septum is exposed. I excise the orbital fat only in patients who have very puffy lids, and where indicated, only the prolapsing fat is cauterised and excised. 3-4 double armed 6/0 vicryl sutures are passed between the upper border of the tarsus or levator aponeurosis (which will be exposed if orbital fat is excised) and the lower skin edge and tied. It is important not to include the orbital septum in the stitch, as this will cause a lid lag. The skin edges are closed with a continuous nonabsorbable stitch. The pre and the post operative pictures are shown in Fig 3a & 3b.

The potential complications include infection, haemorrhage, suture reaction, granuloma formation, secondary ptosis or lid retraction and corneal exposure.

Suboptimal results include incomplete excision of fat pads, asymmetry of lid creases between the two eyes, insufficient lid crease and even disappearance of lid crease with time. Un-ightly epicanthal scar and lash ptosis can also occur.

CONCLUSION

The surgeon should understand the anatomical differences in the Asian eyelids in order to achieve an excellent cosmetic result in lid surgeries and to keep the complication rate low. The aim should be to create the lid crease that is well suited to the facial and eyelid configuration.

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Fig 3a – Pre-operative picture



Fig 3b – 2 weeks post-op



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