Upper Blepharoplasty: Asia’s Surgical Approach to Creating Double Eyelids

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Abstract

Upper Blepharoplasty, otherwise commonly referred to as the double eyelid surgery, is one of the most popularized cosmetic surgeries in Asia. A well defined crease in the upper eyelid, or double eyelid, is generally regarded as being an attractive facial feature, irrespective of the culture or ethnicity. The anatomical nature of Asians’ eyelid results in a low or even no crease formation in the upper eyelid, thus placing a large demand for upper blepharoplasty in Asia’s hospitals. This paper will review the current understanding of double eyelid formation and China’s surgical approach to upper blepharoplasty.

Introduction

Approximately 50% of the Asian population possesses a “single” upper eyelid that has little to no crease formation while the other 50% of the population has double eyelids with a low crease formation. Majority of the Caucasian population possesses a distinct double eyelid with a high crease formation known as the occidental crease. A single eyelid is commonly considered by many to be an aesthetically less attractive facial feature when compared with a more conspicuous double eyelid. Upper blepharoplasty attempts to reconstruct a double eyelid with high crease formation which is a resemblance of the non-Asian eyelid anatomy. The enormously high prevalence of the single eyelid in Asian population has allowed China’s plastic surgeons to perfect the upper blepharoplasty technique and create desirable double eyelids for Asian patients in a procedure that is quick and relatively painless.
Anatomy of the Caucasian double eyelid. The anatomical structures of the eyelid include: 1) skin, 2) subcutaneous fat, 3) orbital septum, 4) orbicularis oculi muscle, 5) levator aponeurosis, 6) tarsal plate, 7) preaponeurotic fat, 8) levator palpebrae muscle.

The lower portion of the upper eyelid is comprised of the skin, subcutaneous fat, orbicularis oculi muscle, and tarsal plate, listed in the order from the most superficial layer to the deepest layer. Penetrating through these structures is the aponeurosis of the levator palpebrae – the muscle which opens the upper eyelid. Superior to these structures are the orbital septum and the preaponeurotic fat. Variations in these common eyelid structures result in the difference in the crease formation that is observed between single eyelids and double eyelids.

In single eyelids, the orbital septum is fused with the levator aponeurosis below the superior border of the tarsal plate, whereas the location of septum-aponeurosis fusion is found above the superior border of the tarsal plate in double eyelids.\(^1\) Preaponeurotic fat in single eyelids protrudes inferiorly and anteriorly towards the upper eyelid margin thus creating a herniated fat pocket which is not observable in double eyelids.\(^1\) Subcutaneous fat in Asians with single eyelids are also much thicker and more prominent than the Caucasian eyelid.\(^3\) This layer is almost non-existent in individuals with double eyelids. Therefore, the barrier created by the septum, the preaponeurotic fat and the subcutaneous fat in the single eyelid interferes and prevents levator aponeurosis from extending into the subdermal layer. As a result, the aponeurosis-skin connection in the single eyelid is weak and confined mostly to the lower margin of the upper eyelid.\(^4,5\)

Fibrotic tissue connects extensively between the tarsal plate and the back of the skin in double eyelids. This fibrotic connection creates a strong skin- orbicularis-tarsal complex (SOTC) which allows the eyelid to be lifted higher, thus causing an occidental crease. SOTC is nearly or completely non-existent in individuals with single eyelid, which results in the eyelid’s inability to be lifted and creased.\(^7\)

The weak and lower primary insertion of the levator aponeurosis, compounded with a weak SOTC produce the single eyelids that are commonly observed in the Asian population.

Pre-surgical Consultation

In Shanghai Ninth People’s Hospital, one of Asia’s most renowned plastic surgery hospitals, patients who wish to undergo the upper blepharoplasty procedure do not need prior consultation with a family doctor or an appointment to see a plastic surgeon. Patients are seen by the plastic surgeon on a first-come-first-served basis. The average wait time for a consultation from a plastic surgeon is approximately 1 to 2 hours. Patients seeking cosmetic blepharoplasty are typically female from ages 18 to 22y, although older patients seeking blepharoplasty is not uncommon. Approximately 100 patients requesting for upper blepharoplasty are seen each day and over 4,000 blepharoplasty procedures are performed yearly at Shanghai’s People Ninth Hospital. The cost of the consultation and the operation is 21.5 yuan (approximately $3CAD) and 1,600 yuan (approximately $250CAD), respectively. Patients can bypass waiting in line and choose their own surgeons at the hospital as a designated VIP patient. This procedure cost approximately an additional 3,000-4,000 yuan ($450-600CAD) for VIP patients.

The surgeons can manually create a temporary crease in the eyelid. Manipulation of the eyelid crease can be done using forceps by pinching the desired location of the crease while the eyes are closed, and then having the patient reopen their eyes. This would allow the patient and the surgeon to see what they might look like after the surgery and give the patient a chance to determine their desired location of the crease formation. Patients are thoroughly assessed by the doctors in their motives for requesting upper blepharoplasty. Those who expect and anticipate secondary gains from this operation, such as improvement in personal relationship and lifestyle, are contraindicated for the surgery. All patients must undergo a medical evaluation and blood work to assess for potential surgical contraindications such as conjunctivitis and coagulopathy. Patients younger than the age of 15y are advised to postpone the surgery until they are older because crease formation might still develop when they are younger. Patients are informed of the risks and potential complications from the surgery. Patients above the age of 30y are informed about their slower recovery time and the possibility of a more prominent scar formation during healing. Once all fees are paid, patients are moved to the outpatient surgery rooms and are prepped for the procedure. Surgeries are not necessarily performed by the same surgeon that did the consultation unless they are VIP patients. Post-consultation surgeries are also done on a first-come-first-serve basis and the wait time for surgery can be up to 4 hours long.

Patients with only a single eyelid on one side will still undergo a bilateral upper blepharoplasty for symmetry purposes.
Surgical Procedure

Figure 5. Blepharoplasty surgical approach and the deep fixation technique is shown in 5). The anatomical structures of the eyelid include 1) skin, 2) subcutaneous fat, 3) orbital septum, 4) orbicularis oculi muscle, 6) tarsal plate, 7) preaponeurotic fat, 8) levator palpebrae muscle.

Figure 6. Two incisions are made in the upper eyelid and the skin layer bordered by the two incisions is removed.

Figure 7. Resection of the orbicularis oculi muscle.

Figure 8. Deep fixation suturing technique

Figure 9. Resulting double eyelid after upper blepharoplasty

The surgeon will carefully determine and mark the lines of incision in the upper eyelids. Marking will be done using surgically safe ink. There are a total of four incisions, two per eyelid. The first line of incision is made approximately 4-8mm above the superior border of the eyelid margin. The second line of incision is made approximately 5mm superior to the first line of incision. The heights of these lines are determined by the patients’ desired location of the crease. The height of the final crease should range between 2-10mm above the upper eyelid margin. Both lines of incision are curvilinear in shape.

Patients are kept awake throughout the entire procedure. Local anesthetics are injected subcutaneously into both upper eyelids. Patients are advised to be relaxed throughout the entire procedure in order to prevent excessive bleeding.

Incisions can be made along the predetermined markings using a scalpel. The layer of skin and subcutaneous fat bordered by the two lines of incision can be removed, and the orbicularis oculi muscle can then be exposed. A small strip of the orbicularis oculi muscle and the orbital septum is resected. This will expose the herniated preaponeurotic fat which is just posterior to the orbital septum. Great care must be taken to ensure that the underlying levator aponeurosis deep to the preaponeurotic fat is not injured during the orbital septum resection. The levator aponeurosis is kept intact throughout the surgery. A bipolar cautery is employed.
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Undesirable appearance of the eyelids after the surgery can be due to excessive skin removal, unusual scar formation, or surgeon’s inexperience. Second operation will be needed to correct this undesirable effects and are normally fixable.

Conclusions

Incisonal upper blepharoplasty is one of the most commonly performed cosmetic reconstructive surgeries in Asia. The use of this technique is considered a gold standard in creating aesthetically pleasing double eyelids in China. Indication for undergoing this procedure is strictly for cosmetic purposes and the patients’ expectation must be carefully assessed. Complications can occur with this procedure, however, they are extremely rare. When performed correctly, upper blepharoplasty can be one of the most gratifying cosmetic procedures a patient can receive.

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References


Outcome

When performed without postoperative complications, patients are generally satisfied with the outcome of the upper blepharoplasty. High success rates are achieved using this procedure to create double eyelids. External scars will not be conspicuously visible when the wound has completely healed and should not be an aesthetic problem that the patient should worry about. Patient might complain of ecchymosis, swelling, and other common predictable postoperative effects. Reassurances by the surgeons are given to the patients about the time course of their recovery. Patients are reminded before and after the surgery that this procedure is not entirely free of postoperative complications.

Although rare, complications following an upper blepharoplasty do occur. Infections can occur and will require a second surgery to drain excess fluids and debride any necrotic tissues. Bleeding during the surgery can cause hematoma and retro-orbital hemorrhage. As a result, this can lead to serious irreversible complications such as visual loss.

Muscle injuries can occur in a delicate surgery such as blepharoplasty. Damages to extraocular muscles during fat excision and tissue removal can cause diplopia. Injuries to the levator aponeurosis during the surgery can cause blepharoptosis and will need reparative surgery if ptosis is persistent for a long period of time.