

Lower Blepharoplasty: How to Avoid Complications

Dr. Vincent KH KWAN

MBChB, FRCS(Ed), FHKAM(Surgery)

Specialist in Plastic Surgery



Dr. Vincent KH KWAN

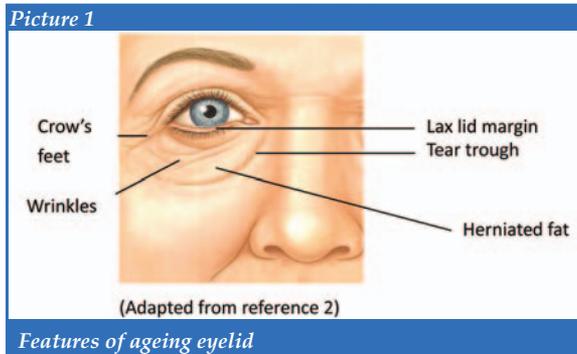
Introduction

Eyes are the key stone of facial beauty. Since early history eyes are well known as the windows of the soul. Through the action of the peri-orbital tissue, the eyes can reflect the emotional status of people. As the most attractive and fascinating feature of the face, it is the eyes and their surround tissues first render to the process of ageing.

Ageing of Lower Eyelid

Rhytids, lower lid laxity, and crow's feet are due to the progressive loss of soft tissue around the orbits. Attenuation of the orbital septum results in herniation of fat and appearance of an eye bag. Tear trough deformity is a triangular depression at the medial aspect of the lower eyelid. It is caused by the attenuation of soft tissue over the maxilla. Eye bags make people appear tired and dissipated. Tear troughs makes eye bags look worse.

Picture 1 shows features of ageing eyelid



Lower Eyelid Beauty

A young and beautiful attractive lower eyelid should be smooth and wrinkle-free. It should be of a lazy S shape and tilt upwards at an angle of 3-4 degrees from the medial to lateral canthus. The lid margin should touch the limbus at the midline and the lowest point should be located under the lateral limbus. There should not be any fat herniation.

Purpose of Lower Blepharoplasty

Through lower blepharoplasty, eyelids can restore their

former beauty. It is one of the commonest operations performed by plastic surgeons.

The aims of lower blepharoplasty are to correct fat herniation, improve skin and lid margin laxity and to correct tear trough deformity.

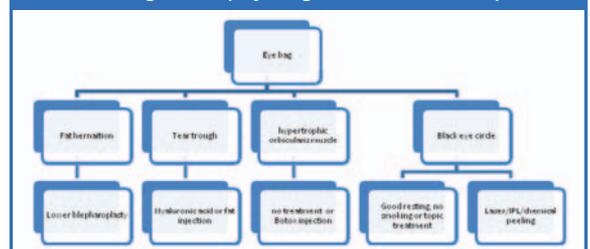
Lower blepharoplasty is not a sophisticated operation. However, in wrongly selected patients, patient satisfaction is lower. Although complications are uncommon, some of them are catastrophic.

Eye Bag and its Associated Lower Eyelid Problems

Patients coming for lower blepharoplasty may have mixed lower eyelid problems. Fat herniation, tear trough deformities, hypertrophic orbicularis muscle, lax skin, wrinkles or even black eye circles are common presentations. Lower blepharoplasty is only indicated in fat herniation as the predominant problem, for the rest of the lower eyelid problems, they can be corrected by non-surgical means.

Table 1 summarises the treatment for various lower eyelid problems.

Table 1: Management of eye bag and its associated problems



Picture 2 shows a patient with prominent tear trough deformity and mild fat herniation. She was treated with hyaluronic acid injection.





Picture 3 shows a patient with marked soft tissue loss in the eyelid and prominent tear trough deformity. She was treated with fat injection.

Picture 3



Surgical Approaches

Lower blepharoplasty can be performed under local or general anaesthesia. It can use the transcutaneous or transconjunctival approach.

1. Transcutaneous Lower Blepharoplasty

The lower eyelid is infiltrated with local anaesthesia. An incision is placed 1.5 mm below the ciliary margin. A skin-muscle flap is raised to the level of the orbital rim. The orbital septum is opened. Protruding central, nasal and lateral fat pads are removed or redraped over the orbital rim to correct any tear trough deformities. Lower lid laxity can be corrected at the same operation. Canthopexy is the tightening of the lateral canthal tendon without dividing it. Canthoplasty is the shortening and reattachment of the lateral central tendon. The skin is redraped and any excessive lower eyelid skin is excised. The wound is closed with fine nylon stitches.

Picture 4 shows a patient presented with fat excess and skin laxity but without horizontal laxity. Transcutaneous lower blepharoplasty was done.

Picture 4



2. Transconjunctival Lower Blepharoplasty

The advantage of this approach is to avoid any scar in the skin and leaves the orbicularis muscle undisturbed. It is indicated in patients with fat excess with no skin excess.

The lower eyelid and conjunctiva is infiltrated with local anaesthesia. The conjunctiva is incised with diathermy or carbon dioxide laser. A skin-muscle flap is raised. The orbital septum is opened. Protruding central, nasal and lateral fat pads are removed. Suture closure of the conjunctiva is generally not required as it will heal up nicely within a few days.

Picture 5 shows a patient with fat excess and no skin laxity. Transconjunctival lower blepharoplasty was done.

Picture 5



Complications

Complications are usually transient or self-limiting. These complications are: subconjunctival haemorrhage, epiphora, conjunctivitis, dry eye syndrome, lagophthalmos, temporary visual blurring and lower eyelid discoloration. However serious complications may occur. These complications are: ectropion and scleral show, inferior oblique muscle injury, retrobulbar haematoma, sunken eyelid and corneal injury.

Ectropion and Scleral Show

Ectropion is the eversion of the lower eyelid resulting in exposure of the palpebral conjunctiva. Scleral show refers to visible white sclera below the lower limbus. Failure to recognise lower lid laxity and too much skin excision are the main causes of this complication.

Inferior Oblique Muscle Injury

The inferior oblique muscle originates from the anterior medial orbital floor and inserts in the sclera. It separates the nasal and central fat pads. Function of the inferior oblique muscle is to turn the eyeball upwards and laterally. The inferior oblique muscle can be damaged during fat removal or haemostasis irrespective to its anatomy. Injuries can result in diplopia.

Retrobulbar Haematoma and Blindness

Poor haemostasis or reactionary haemorrhage causes bleeding. Bleeding into the orbits results in elevation of the orbital and ocular pressures. Elevation of orbital and ocular pressures in turn diminishes blood flow in the branches of the ophthalmic artery. Prolonged nerve or retinal ischaemia results in blindness.

Sunken Eyelid

One of the main aims of lower blepharoplasty is to remove excessive orbital fat. However, too much fat removal will result in hollowness of the lower eyelid. Patients will have a cachectic or cadaveric look.

Corneal Irritation and Injury

Corneal injury is caused by rough handling of instruments. This causes direct injury of the cornea. Prolonged exposure of the cornea without protection will result in corneal desiccation and irritation.

Prevention of Complications

Prevention of complications depends on a good pre-operative assessment, meticulous operation technique, adequate knowledge of lower eyelid anatomy and proper post-operative care.

Pre-operative Assessment

1. Medical History

History of hypertension, bleeding diathesis, thyrotoxicosis, arteriosclerosis, concurrent aspirin or anticoagulants predispose patients to reactional haemorrhage.

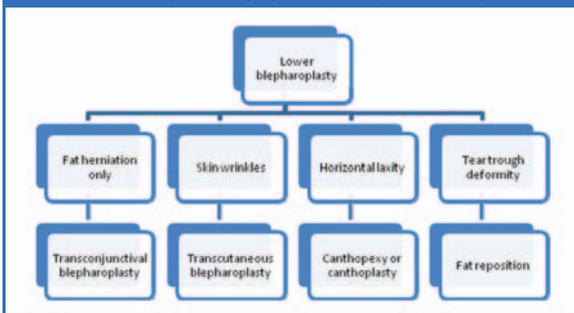
Thyrotoxicosis, autoimmune disease, poor tolerance to contact lens are the risk factors of corneal irritation or injury.

Scarring resulting from previous eye disease or trauma makes the inferior oblique muscle more vulnerable to injury.

2. Physical Examination

Careful examination of the peri-orbital tissue helps to decide on the surgical approach. Fat excess with good lower eyelid skin quality is indicative of the transconjunctival approach, fat excess with lax skin the transcutaneous approach and poor lid tone with presence of tear trough other auxiliary procedures. Table 2 shows this clinical pathway of lower blepharoplasty.

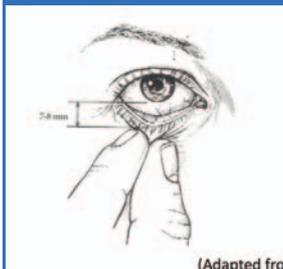
Table 2: Clinical pathway of lower blepharoplasty



Examine for any occult diplopia, asymmetry, mark the fat pads in the sitting position help to prevent muscle injury and excessive removal of the orbital fat.

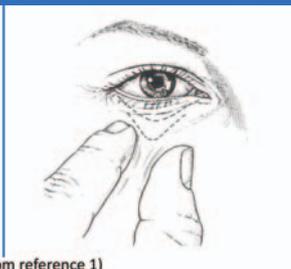
The lid tone can be examined by the distraction test and snap test. In the distraction test, the lower eyelid is pulled away from the globe; 7-8 mm or less is the normal distance. The snap test is the second part of the distraction test. With normal tone, the lower eyelid should return to the globe immediately. Any increase in the distraction distance or delay in snap test indicates laxity in the tarsus or horizontal laxity. Canthopexy or canthoplasty should be considered during blepharoplasty.

Picture 6



Distraction test

Picture 7



(Adapted from reference 1)

Snap test

Good Surgical Technique

To prevent corneal irritation and injury, the patient's cornea should be protected with corneal shields or antibiotic eye ointment. Handling of instruments should be gentle. Patients with poor lid tone are prone to develop ectropion or sclera show. Lid tightening procedure is indicated. Moreover, excision of skin should be conservative. To prevent sunken eyelids, fat should be excised flush with the orbital rim. In case of doubt, less fat should be excised.

Adequate knowledge of lower eyelid anatomy and meticulous haemostasis are essential to prevent muscle injury or reactional haemorrhage.

Post-operative Care

Patients are advised not to wear contact lens for 3 weeks. Cold compression should be used for the first 48 hours, 4 to 5 times a day, each for 15-20 minutes. Warm compression is then followed for 5 days. Patients should rest in bed with two pillows. These measures can reduce swelling and post-operative discomfort. In order to decrease the chance of reactional haemorrhage, patients should avoid lifting heavy objects, bending down or doing exercise for one week.

An emergency contact number should be given to patients before discharge. They should seek medical advice immediately if there is any symptom of retrobulbar haematoma like, sudden increase in lower eyelid bruising and swelling, severe retrobulbar pain or blurring of vision.

Stitches can be removed after 5 to 7 days. More vigorous exercises can be resumed after 3 weeks.

Conclusion

The goal of lower blepharoplasty is to restore the lower eyelid to its former beauty. To achieve this goal, we must have a working knowledge of the aesthetics of the eyes and adjacent tissues. We must know how to analyse the eyes through proper history and physical examination. Good selection of patients, meticulous operation technique and proper post-operative care are essential to avoid complications.

References

1. Aesthetic Blepharoplasty. Francis G. Wolford, William R. Kanter. Little, Brown and Company. 1995.
2. Aesthetic Plastic Surgery. Sherrill J. Aston, Douglas S. Steinbrech, Jennifer L. Walden. Saunders. 2009.
3. Pearls and Pitfalls in Cosmetic Oculoplastic Surgery. Morriri E, John B. Holds, Guy G. Massry. Springer. 2008.
4. Color Atlas of Cosmetic Oculofacial Surgery. William PD Chen, Jemshed A Kan, Clinton D McCord Jr. Butterworth & Heinemann. 2004.
5. Grabb & Smith's Plastic Surgery. Charles H. Thorne. Lippincott, Williams & Wilkins. 2007.
6. Finn JC, Cox. Fillers in their peri-orbital complex. Facial Plastic Surgery Clin North Am 2007;15(1):123-132.
7. Jelks GW, Jelks EB. Pre-operative evaluation of the blepharoplasty patient. Bypassing the pitfalls. Clin Plast Surg 1993;20(2):213-223.
8. Glat PM, Jelks GW, Jelks EB, et al. Evolution of the lateral canthoplasty: Techniques and indications. Plast Reconstr Surg 1997;100(6):1396-1405s.