

An Aesthetic Perfection- A Review of Contemporary Blepharoplasty Procedures

Prajakta Prashant Kothiwan^{1*}, Hasti Kankariya², Shreya Srivastava³, Rishabh Gopal Chourasia⁴

¹Junior Resident 3rd year Oral and Maxillofacial Surgery, KD Dental College and Hospital, Mathura, Email: prajaktapk27@gmail.com

²Professor and HOD Oral and Maxillofacial Surgery, KD Dental College and Hospital, Mathura, Email: kankariyahasti@gmail.com

³Reader Oral and Maxillofacial Surgery, KD Dental College and Hospital, Mathura, Email: drshreyomfs@gmail.com

⁴Junior Resident 3rd year Oral and Maxillofacial Surgery, KD Dental College and Hospital, Mathura, Email: rishabhchourasia98@gmail.com

***Corresponding Author**

Email: prajaktapk27@gmail.com

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ABSTRACT

Small functional and cosmetic units make up the human face, with the eyes and periocular area serving as the primary focal point during everyday face-to-face encounters. This dynamic area is the most important part of the facial aesthetic and functional unit since it is crucial to the expression of mood, emotion, and character. With its direct aesthetic relationship to the cheek and brow, blepharoplasty is vital for facial rejuvenation. Blepharoplasty is the preferred surgical method for both aesthetic and functional amelioration since any alteration to the periocular unit causes facial imbalance and functional discord, which prompts both young and old to seek consultation. The aim of this review article is to present a brief overview of the surgical and non-surgical blepharoplasty techniques that have been reported in the literature along with its indications, contraindications, complications and post-operative management.

Keywords: Eye Lid Surgery, Aesthetic, Transconjunctival blepharoplasty, transcutaneous blepharoplasty, lasers, fillers.

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INTRODUCTION

Disorders of the eyelid, orbit, lacrimal apparatus, and periocular cosmetic surgery are the main areas of focus for ophthalmic plastic surgery. Traditionally, the typical ocular plastic surgeon concentrated mostly on the functional disciplines, with cosmetic surgery receiving little interest from surgeons. Nowadays, the majority of plastic surgeons undertake cosmetic procedures, and many of them specialize in this field of practice [1]. This tendency is increasingly shifting. A major part of facial aesthetics is the eye, and blepharoplasty can significantly improve face harmony and the appearance of age [1]. Blepharoplasty is a surgical treatment used to address any functional problem and renew a patient's appearance by excising, redraping, or sculpting the orbital fat, orbitalis oculi muscle, and eyelid skin [2,3]. Blepharoplasty means eyelids, while the term "plastikos" means to form [4]. The surgical reconstruction or repair of the

upper and/or lower eyelids is known as blepharoplasty. These operations are carried out to improve unsightly lids and address periorbital age sign correction [5]. Blepharoplasty can address symptoms like weary eyes, extra skin, droopy eyelids, and circles around the eyes [6]. It can be

combined with other facial and skin rejuvenation procedures, including brow or mid-face lifts, lasers, or chemical skin resurfacing [7]. Even though it's one of the most common procedures, surgical blepharoplasty is typically a non-definitive, invasive process that can leave scars and necessitate further surgical retouches [5].

The purpose of this article is to provide an overview of surgical and non-surgical blepharoplasty procedures that have been reported in the literature for the upper and lower eyelids with its indications, contraindications, complications and postoperative management.

Applied anatomy

It is crucial to comprehend the anatomy of the eyelid complex in order to accurately evaluate the patient prior to surgery [4]. The skin on the eyelids is the thinnest in the body and is less than 1 mm thick, with no subcutaneous fat layer [8,9]. The underlying tissues are securely attached to the pretarsal tissues. Conversely, there may be areas for fluid buildup since the preseptal tissues are weakly connected [8]. At the level of the supratarsal fold, which is created by the union of the orbital septum, levator aponeurosis, and orbitalis oculi fascia, the upper eyelid can be separated into tarsal and orbital sections [10]. The orbital septum is located deep within the orbicularis fascia and serves to retain the orbital fat [11]. Ten to twelve millimeters above the superior tarsal border, it merges with the levator aponeurosis and is continuous with the orbital periosteum. In front of the levator aponeurosis and behind the orbital septum are the preaponeurotic fat. The yellow-coloured central fat pad and the white nasal fat pad are the two divisions of this layer of orbital fat [4]. The levator muscle and levator aponeurosis are located posterior to the preaponeurotic fat pads. The sympathetic muscle of Muller exits the posterior surface of the levator aponeurosis and inserts at the superior border of the tarsus, ten to twelve millimeters above the superior tarsal border [12]. For both functional and aesthetic reasons, it's critical to comprehend eyebrow placement [4]. The fat pad that the eyebrow rests on increases its range of motion. This fat is typically found over the rim of the superior orbit. The area surrounding the eyebrow contains the corrugator superciliaris, procerus, frontalis, and orbital orbicularis oculi muscles. [12]. The need for browplasty can be determined based on the attachments and insertions of these muscles.

Preoperative evaluation [4]:

A comprehensive ophthalmologic examination and a comprehensive medical and ocular history should be acquired. A thorough history of any trauma or prior surgery should be documented; patients should have their thyroid and dry eye conditions assessed seventh nerve function should be examined. Bleeding disorders and aspirin use should be specifically mentioned and appropriately avoided. Preoperative pictures should be taken with the eyes in primary position. The best-corrected visual acuity, the height and shape of the palpebral fissures,

the location of the upper eyelids, the distance between the eyelid crease and fold, the position of the eyebrows, the frontalis action, and the health of the tear film should all be carefully assessed during a clinical examination. Pre- and post-operative evaluations of additional tests, including contrast sensitivity, visual field, and corneal topography, are necessary. To prevent any preoperative complications or concern, the patient's detailed written and informed consent should be acquired prior to the day of the procedure.

[A] Surgical approach

Upper eyelid blepharoplasty:

Indications for upper eyelid blepharoplasty [4]:

1. Dermatochalasis or sagging eyelids
2. Upper eyelid epiblepharon
3. Blepharochalasis
4. Inflammatory disorders
5. Trauma
6. Xanthelasma
7. Aesthetic

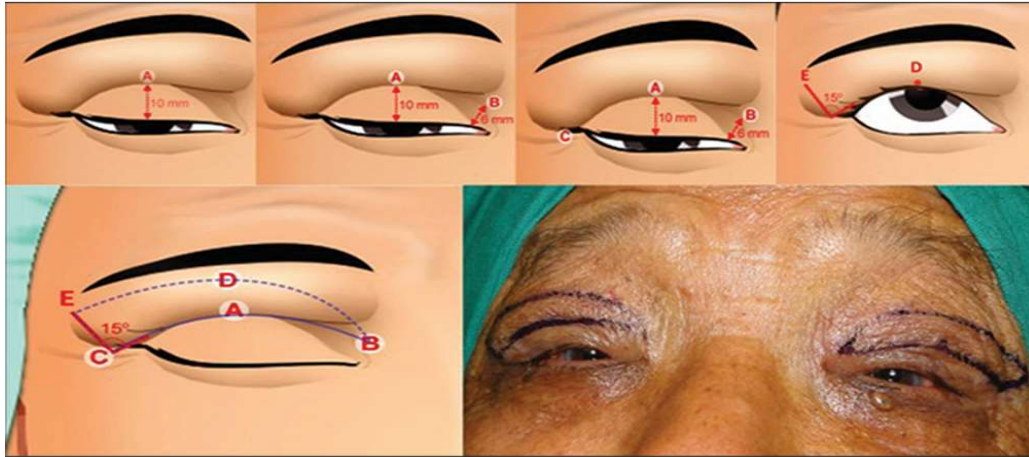
Steps in upper eyelid blepharoplasty are as follows:

1. Anaesthesia:

Local or general anaesthesia may be used for blepharoplasty, depending on the surgical approach, the surgeon's and patient's preferences, and the requirement for concurrent activities. Under local anaesthesia, a straightforward blepharoplasty of the upper or lower eyelids can be carried out, in which just skin or fat is removed [1]. More invasive procedures may be done in general anaesthesia.

2. Preoperative marking:

The upper limit of skin excision and the skin crease are the two most crucial elements of blepharoplasty marking. Any dye that won't be entirely gone once the patient is prepared can be used for marking [12]. Among the marking techniques are the "skin pinch" and "skin flap" approaches. The patient is seated and has their eyes closed when using the skin pinch technique [1]. The eyelid crease is located about 8 to 9 mm above the ciliary margin in women and 7 to 8 mm in men. An imaginary line connecting the lateral end of the brow to the lateral canthus should be used to limit the marking's lateral extension, while the eyelid crease should serve as the lower limit of excision [1]. The excision should be at least 10 mm away from the brow's inferior edge [1].



Preoperative lid marking in extended upper eyelid blepharoplasty [4]

3. Surgical procedure:

Using a 27 to 30-gauge needle, superficially inject 2% lidocaine and 1:100,000 epinephrine into the upper lids. A No. 15 Bard Parker blade or the Empire tip of radiofrequency monopolar cautery can be used to make a skin incision [1]. Following the establishment of the skin incisions, a radiofrequency cautery tool with a fine-angled empire tip is used to lift one edge of the wound and remove the skin. Preaponeurotic fat pads are directly accessible by tiny incisions made over the septum, and a strip of preseptal orbicularis is removed [4]. The orbital septum's tiny apertures allow the central and medial fat pads to be gently tugged out. Prior to excising employing a radiofrequency cautery, the fat pads should ideally be immobilized with a hemostatic clamp or removed using electrocautery. Before assisting in its retraction back into the orbit, the hemostatic clamp's residual stump is cauterized [4]. In order to restore the volume of the eyebrows and secure them internally at the desired position, which is 2-3 mm above the supraorbital rim, the retroorbicularis oculi fat is repositioned back using two nonabsorbable sutures. In order to produce a noticeable and desired eyelid crease, the orbicularis oculi muscle, the superior border of the tarsal plate, and the levator fibers are all sutured by interrupted, horizontal mattress sutures using 6-0 absorbable sutures. Subsequently, the skin is approximated using continuous or interrupted sutures, ideally nonabsorbable (7-0 prolene) [4]. When upper eyelid blepharoplasty occurs in the elderly, brow ptosis is frequently corrected via corrugator myectomy, external browplasty, or internal browpexy. A suture suspension of the brow to the frontal bone beneath is called a browpexy. Internal browpexy is done from inside the eyelid, while external browpexy is done from a tiny incision above the brow [4]. Postoperatively patients should be instructed to

apply topical ciprofloxacin ophthalmic ointment to the incision sites for two weeks after surgery, and to apply ice packs to the surgical site for three days to reduce postoperative swelling. If non-absorbable sutures are used, they can be taken out after a week [1].

Complications:

1. Superficial hematoma/ecchymosis
2. Asymmetry
3. Lagophthalmos
4. Ptosis
5. Scar-related issues
6. Dry eye syndrome
7. Orbital hematoma/compartiment syndrome
8. Lymphedema
9. Ocular motility disorders

Lower eyelid blepharoplasty

Skin laxity or excess, orbital septum laxity, orbicularis laxity or hypertrophy, orbital fat herniation, canthal laxity, malar festoons, crow's feet, and periocular wrinkles are some of the aesthetic changes that aging can cause in the lower eyelid [13]. The rejuvenation of the lower eyelids is more complicated and involves a number of treatment options, including skin resurfacing, blepharoplasty, and fillers [1]. In lower eyelid blepharoplasty, the conventional method involved making a skin incision to remove the pseudo-herniated fat. Repositioning the herniated fat into the subperiosteal area in cases of tear trough deformity is a more modern, conservative strategy. Tightening of the orbicularis muscle and skin, as well as strengthening techniques for the attenuated septum or septorrhaphy, may be used in conjunction with either of these methods [14].

The most widely used approaches for lower lid blepharoplasty are transconjunctival lower lid blepharoplasty and transcutaneous lower lid blepharoplasty.

Transconjunctival lower lid blepharoplasty [1]

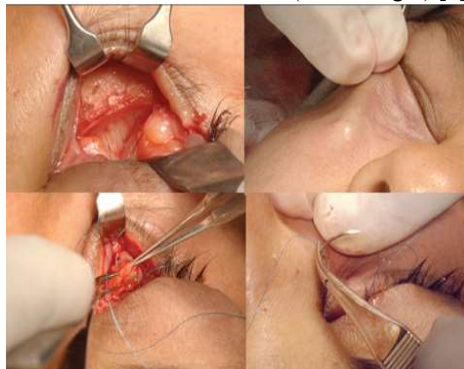
For transconjunctival lower lid blepharoplasty, 1%

lidocaine containing 1:100,000 epinephrine is used to anesthetize the lateral canthus, eyelid skin, and inferior fornix. An incision is made through the conjunctiva and lower eyelid retractors, 4-6 mm below the lid edge. Applying light pressure on the eyeball causes the fat compartments to prolapse and helps with recognizing the lateral, central, and medial fat pads. Monopolar or bipolar radiofrequency cautery is used

to remove fat conservatively. The inferior oblique muscle, which divides the medial from the central fat pocket, is carefully protected. The inferior and superior borders of the conjunctival epithelium are positioned closely to prevent overlap, but the tarsoconjunctival incision is left open. The incision normally heals within a week, providing an appealing result.



Transconjunctival blepharoplasty (surgeon's view). Injection of local anesthetic into the inferior conjunctival fornix (top left). Forniceal incision to expose orbital fat (top right). Conservative fat excision with radiofrequency monopolar tip (bottom left). Assessment of contours on table (bottom right) [1]

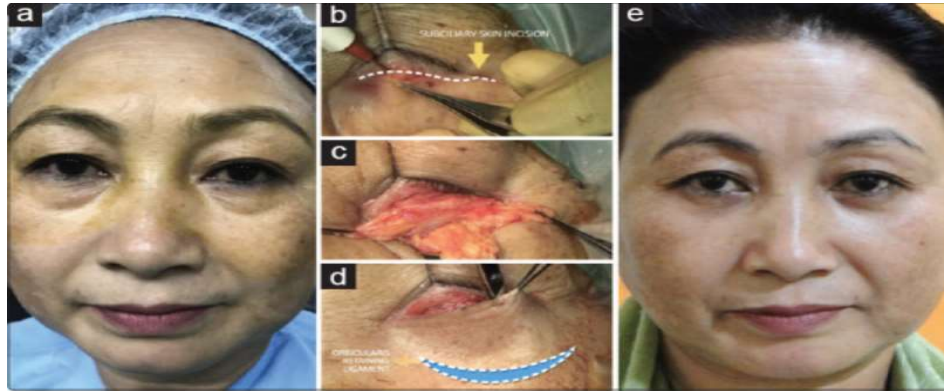


Transconjunctival lower eyelid fat repositioning. Surgeon's view showing exposed orbital fat and inferior orbital rim (top left). Release of orbitomalar ligament and creation of supra-periosteal pocket for fat repositioning (top right). Prolene™ 6-0 sutures passed through orbital fat pads (bottom left). Exteriorization of Prolene™ sutures to reposit fat within the orbital rim hollow (bottom right) [1]

Transcutaneous lower lid blepharoplasty [1]

The skin is raised from the orbicularis and accessed by a subciliary incision. A skin pinch between forceps can be used to estimate the amount of skin

that will need to be removed. Redundant skin can be excised and redraped without affecting the underlying orbicularis.



(Transcutaneous lower lid blepharoplasty): (a) Preoperative photograph (b) Sub-ciliary incision (c) Exposure of three fat pedicles. (d) Release of the orbicularis retaining ligament (e) Postoperative photograph [20]

Complications:

Visual loss from hemorrhage, orbital injection, or posterior optic nerve infarction are extremely rare, but have been described [15]. Possible consequences

include lower eyelid retraction with scleral show, lagophthalmos, corneal exposure, and acquired strabismus [1].

[B] Non-surgical approach

Lasers

The concurrent loss of skin suppleness and excess of it is one of the most distinctive features of eyelid aging. In order to address these morphological and functional changes of the lid, laser treatment has proven to offer intriguing alternatives. The goal of laser treatment is to guarantee skin contraction, which might result in a more toned and smooth appearance [16]. The eyelid region can be treated using a variety of laser technologies, such as fractional ablative CO₂ laser, fractionated erbium:YAG laser, erbium-doped yttrium-aluminum-garnet (Er:YAG) laser, ablative CO₂ laser, and non-ablative fractional laser [16,17]. The key differences between ablative and non-ablative lasers are the skin layers they target, the dosage of the laser, and its efficacy, which is often higher for ablative lasers. Typically, ablative lasers have a longer recovery period and entail higher dangers. The morphological and functional properties of the areas to be treated, the patient's clinical requirements, and the recovery period following the procedure should all be taken into consideration when choosing the right laser equipment. In addition to having a lower risk of scarring, dyschromia, and postprocedural infections, fractionated lasers usually have a quicker skin healing period [5]. The gold standard for skin resurfacing in the past has been ablative CO₂ resurfacing. The dermatochalasis of the skin around the eyelids can be effectively treated with this laser because it was thought to be superior to Erb:YAG ablation in providing tissue contraction and rhytid improvement [17]. Fitzpatrick et al. revealed that while Er:YAG and CO₂ lasers both tighten to comparable degrees,

Er:YAG lasers caused 33% more scarring in patients and had a worse coagulation ability than CO₂ lasers [18]. The benefits, drawbacks, and possible adverse consequences of ablative, ablative-fractioned, and nonablative procedures are carefully examined in the study by Bae-Harboe et al [16]. The study also demonstrates that fractioned ablative CO₂ laser is a viable way to enhance the periocular area's look [16]. 263 patients with mild inferior dermatochalasis who received only ablative fractioned CO₂ laser treatment were retrospectively examined by Garcia and Badin. Six months after surgery, they seemed to have youthful look and had less rhytids, indicating improvement in the eyelid area [19].

Plasma exeresis [5]

It is possible to suggest the plasma exeresis treatment as a workable alternative to surgery when a patient declines to have the indicators of eyelid aging corrected. A non-surgical option that is gaining popularity for treating dermatochalasis is the plasma method. Without any direct contact, it uses a handpiece to generate ionized energy from an air gap, which heats the tissue superficially. A small amount of controlled heat damage turns solid tissue into a gas, which causes minor coagulation and increases skin contraction and collagenesis.

Dermal fillers [5]

Dermal fillers have been utilized extensively for many years in the field of face rejuvenation. Recently, they have emerged as a viable option for both cosmetic and functional purposes, including orbital volume deficit, lagophthalmos, upper and lower eyelid retraction, eyelid malposition, and tear-trough deformity for the lower lid. In cases of aesthetic indication, dermal fillers are a legitimate substitute for surgery.

Polydioxanone threads [5]

Inserting transcutaneous synthetic threads, such as multiple twisted polydioxanone (PDO) threads, for infraorbital groove repair is a novel method of facial rejuvenation.

Conclusion

An essential component of the face, the eyelid area has traditionally offered treatment choices targeted

at enhancing cosmetic results and reducing the symptoms of aging [5]. Though surgery tends to remain the first choice, various non-invasive methods can be employed depending upon the severity of case and patient's expectations.

Bibliography

1. Naik M, Honavar S, Das S, Desai S, Dhepe N. Blepharoplasty: An overview. *Journal of Cutaneous and Aesthetic Surgery* [Internet]. 2009;2(1):6. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2840922/>
2. McCord CD. Upper blepharoplasty and eyebrow surgery. In: Chen WP, editor. *Oculoplastic Surgery*. New York: Thieme; 2001. p. 125-45.
3. Rees TD. Blepharoplasty. In: Rees TD, Wood Smith D, editors. *Cosmetic Facial Surgery*. Philadelphia, PA: Saunders; 1973. p. 44-133.
4. Bhattacharjee K, Misra DK, Deori N. Updates on upper eyelid blepharoplasty. *Indian J Ophthalmol* 2017;65:551-8.
5. Miotti G, Zeppieri M, Pederzani G, Salati C, Parodi PC. Modern blepharoplasty: From bench to bedside. *World Journal of Clinical Cases* [Internet]. 2023 Mar 16 [cited 2023 Apr 3];11(8):1719–29. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10037276/>
6. Castro E, Foster J. Upper Lid Blepharoplasty. *Facial Plastic Surgery*. 1999 Jan 1;15(03):173–81.
7. Jacono AA, Moskowitz B. Transconjunctival versus Transcutaneous Approach in Upper and Lower Blepharoplasty. *Facial Plastic Surgery*. 2001;17(01):021–8.
8. Kersten RC, Codere F, Dailey RA. *Orbit, Eye-lids, and Lacrimal System*. San Francisco: American Academy of Ophthalmology; 2003.
9. Liu D. Oriental eyelids: Anatomic difference and surgical consideration. In: Hornblass A, editor. *Oculo-plastic, Orbital, and Reconstructive Surgery*. Baltimore: Williams and Wilkins; 1988. p. 513-24.
10. Januszkiewicz JS, Nahai F. Transconjunctival Upper Blepharoplasty. *Plastic and Reconstructive Surgery*. 1999 Mar;103(3):1015–8.
11. Siegel RJ. Essential Anatomy For Contemporary Upper Lid Blepharoplasty. *Clinics in Plastic Surgery*. 1993 Apr;20(2):209–12.
12. Bosniak SL, Zilkha MC. *Cosmetic Blepharoplasty and Facial Rejuvenation*, 2nd Edition. *Plastic & Reconstructive Surgery*. 2000 Apr 1;105(4):1562–2.
13. Seckel BR, Kovanda C, Cetrulo CL, Passmore AK, Meneses PG, White T. Laser Blepharoplasty with Transconjunctival Orbicularis Muscle/Septum Tightening and Periocular Skin Resurfacing: A Safe and Advantageous Technique. *Plastic and Reconstructive Surgery*. 2000 Oct 1;106(5):1127–41.
14. Mühlbauer W, Holm C. Orbital Septorhaphy for the Correction of Baggy Upper and Lower Eyelids. *Aesthetic Plastic Surgery*. 2000 Nov;24(6):418–23.
15. Ma T. Sight lost after lower lid laser blepharoplasty. *PubMed*. 2000 Dec 1;45(6):678–9.
16. Yoon-Soo Cindy Bae-Harboe, Geronemus RG. Eyelid Tightening by CO2 Fractional Laser, Alternative to Blepharoplasty. *Dermatologic Surgery*. 2014 Nov 22;40(Supplement 12):S137–41.
17. Fathi R, Pfeiffer ML, Tsoukas MM. Minimally invasive eyelid care in dermatology: Medical, laser, and cosmetic therapies. *Clinics in Dermatology*. 2015 Mar 1;33(2):207–16.
18. Fitzpatrick RE, Rostan EF, Marchell N. Collagen tightening induced by carbon dioxide laser versus erbium:YAG laser. *Lasers in Surgery and Medicine*. 2000;27(5):395–403.
19. Garcia CP, Zulmira A. Treating Excess Lower Eyelid Skin Without Incisions. *Aesthetic Plastic Surgery*. 2019 Jun 19;43(5):1320–5.
20. Bhattacharjee K, Ghosh S, Ugradar S, Azhdam AM. Lower eyelid blepharoplasty: An overview. *Indian Journal of Ophthalmology* [Internet]. 2020 Oct 1;68(10):2075–83. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7727946/>