

Controversies in Facial Cosmetic Surgery



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KEYWORDS

- Blepharoplasty • Genioplasty • Alloplastic chin augmentation • Facial cosmetic surgery
- Controversy

KEY POINTS

- Facial cosmetic surgery is performed by a variety of surgeons with different surgical backgrounds.
- New facial cosmetic surgery techniques are described constantly to meet with the expectations of patients who demand less invasive procedures and less recovery time.
- Current trends in lower eyelid surgery call for periorbital fat repositioning rather than excision of fat.
- Controversies still exist in chin augmentations because some surgeons prefer to perform an osseous genioplasty and other surgeons prefer to use an alloplastic chin implant.

INTRODUCTION

Facial cosmetic surgery techniques have been described since the early twentieth century. Every year, more contemporary techniques are described in the literature in an effort to address the limitations or to minimize the risks of more traditional facial cosmetic techniques. In addition, there are multiple surgical specialties that perform facial cosmetic surgery. Both of those factors, combined with the increased demands of facial cosmetic patients seeking the least invasive procedure with minimal recovery time that can address their chief complaint in a predictable fashion, contribute to some of the controversies. There are controversies in almost all the cosmetic surgeries that are performed in the head and neck region, but their scientific discussion is difficult because many of these surgeries are performed mainly based on the level of experience and not necessarily based on the level of scientific evidence. As an example, many facelift modifications have been described in the literature and it is fair to assume that not every facial cosmetic surgeon performs the same facelift procedure. Therefore, this article does not discuss every modification or controversy in facial cosmetic surgery but, instead, 2 topics in facial cosmetic surgery of

which every oral and maxillofacial surgeon should be aware.

LOWER BLEPHAROPLASTY: TO TAKE OUT PERIORBITAL FAT OR TO REPOSITION IT?

For many years, facial cosmetic surgeons have searched for the best, most reliable, and predictable technique that provides aesthetic rejuvenation of the lower eyelid and its transition to the cheek (**Fig. 1**). The traditional treatment of bulging lower eyelid fat has been resection of fat.¹ However, new trends are pointing toward decreasing the removal of tissue and favoring tissue repositioning,^{2–10} but it is still controversial because each surgical technique comes with several advantages and disadvantages.

When evaluating a patient for lower eyelid surgery, the preoperative evaluation should include a careful examination of the patient's medical history and ophthalmic history, along with a visual examination. It should also take into account the position of the eyebrow, the presence of upper eyelid ptosis, lower eyelid margin position, and the projection of the cheek. Upper eyelid surgery in which skin is removed and medial orbital fat is excised is a procedure that is reliable and has

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Fig. 1. The tear trough deformity, also known as the nasojugal groove, is the natural depression that extends inferolaterally from the medial canthus of the eye (white arrows). Laterally, it demarcates the lid-cheek junction.

consistent results. Lower eyelid blepharoplasty is a bit more controversial.

One of the reasons why the topic is thought to be controversial is because healing after lower eyelid surgery can be unpredictable in nature. This has allowed some surgeons to adopt a more conservative approach to lower blepharoplasty.

In 1995, Hamra¹⁰ described the release of the arcus marginalis to reposition the herniated fat pads over the entire orbital rim by securing it to the periosteum. In 2000, Goldberg⁷ described repositioning the fat in a subperiosteal plane to

decrease the change of a visible demarcation. In 2003, Kawamoto and Bradley¹¹ suggested there was better filling of the nasojugal groove when the fat was repositioned in a supraperiosteal plane.

Other less invasive approaches to ablate the tear trough deformity have been described. Coleman^{12,13} described fat grafting the periorbital area to camouflage the defect and Trepsat¹⁴ described a combination of periorbital fat grafting and transconjunctival blepharoplasty (Fig. 2A).

Several surgeons consider resection of the excess skin if a skin pinch test with forceps warrants it. This is performed via a subciliary incision. A more aggressive technique involves a skin-muscle flap in which the skin and the underlying orbicularis oculi muscle fibers are excised. At that point, the periorbital fat can be excised via small incisions in the septum. This, however, may lead to lower eyelid malposition and muscle denervation due to violation of the middle lamella, a complication known as ectropion (Fig. 3).

The main aesthetic concerns that are addressed with a lower blepharoplasty include pseudoherniation of periorbital fat, excess skin, and a certain degree of skin laxity. A good technique that can be used in younger individuals with minimal skin laxity is a transconjunctival approach that allows fat excision via a retroseptal dissection, which has the advantage of keeping the middle lamella intact (Fig. 4). The skin can then be treated with either laser skin resurfacing or a chemical peel and fat grafting of the cheek to allow for a smooth transition at the tear trough region. As previously mentioned, lower eyelid excess skin can also be addressed with a conservative pinch excision rather than laser resurfacing or a chemical peel (1–2 coats of 30% trichloroacetic acid). The

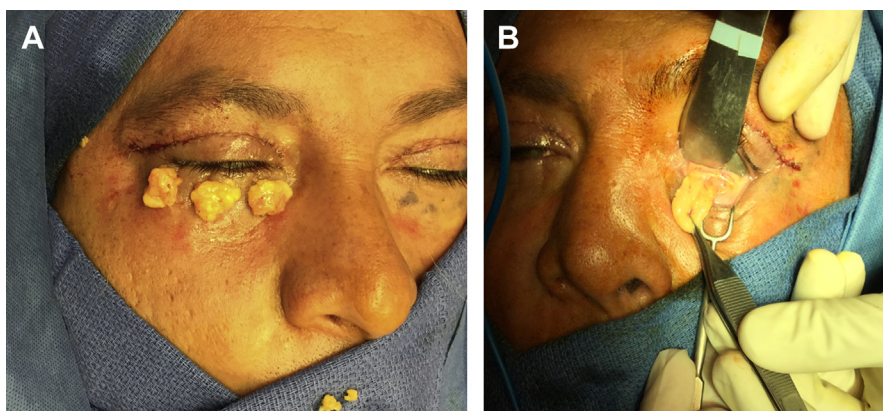


Fig. 2. Transconjunctival blepharoplasty with periorbital fat excision (A) versus a transconjunctival blepharoplasty showing medial fat pad repositioning over the arcus marginalis (B). (Courtesy of Angelo Cuzalina, MD, DDS, Tulsa Surgical Arts, Tulsa, Oklahoma, USA.)

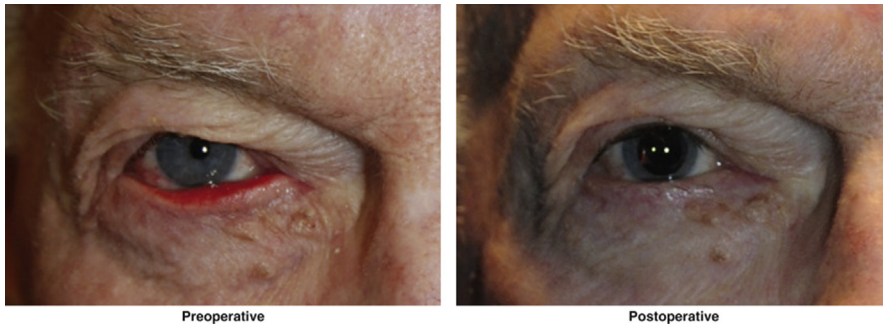


Fig. 3. Before (*left*) and after (*right*) right lower eyelid ectropion repair with retractor reinsertion and lateral tarsal strip. This 82-year-old man noted tearing and foreign body sensation in the right eye. A lower eyelid retractor reinsertion and lateral tarsal strip was performed to restore the eyelid to its native state. (From Korn BS, Kikkawa DO. Ectropion repair by retractor reinsertion and lateral tarsal strip. In: Video atlas of oculofacial plastic and reconstructive surgery. 2nd edition. Philadelphia: Elsevier; 2017. p. 176–181. Figure 25-10; with permission.)

disadvantage of this cheek fat grafting technique is that fat grafting is not as predictable in its healing, which can lead to bumpy irregularities that are hard to treat or it may create a facial asymmetry if 1 side responds differently than the other. Complications such as fat thromboembolism can occur that can lead to blindness or cavernous sinus thrombosis. Those complications could be avoided by the use of blunt cannulas, and minimizing the pressure of the syringe when injecting in the periorbital region.

The more contemporary techniques in lower blepharoplasty call for transposition of the

periorbital fat to redrape over the arcus marginalis to fill the lid or cheek junction⁷ (see Fig. 2B). The advantage of this technique is that it takes the periorbital fat out of the retroseptal position to be used as a pedicle and a vascularized fat graft to fill the tear trough deformity and infraorbital hollows without the need to harvest fat from a distant site. The major downside of this technique is the difficulty of handling the fat and reliably securing the fat in its new position. Securing the fat may require a suture onto the underlying periosteum or a bolster dressing on the skin. Some patients may not like the appearance of a bolster dressing

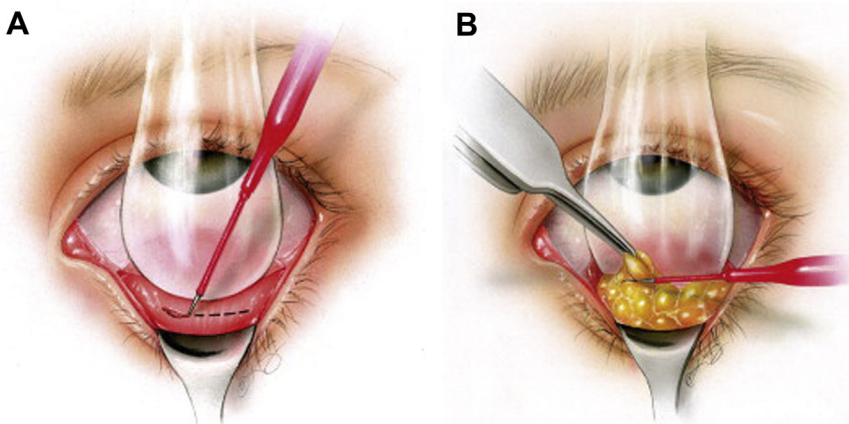


Fig. 4. Transconjunctival blepharoplasty. Lower eyelid dissection. The dissection is begun centrally, to avoid the inferior oblique muscle, and performed in layered fashion through the conjunctiva and lower eyelid retractors (A). A cotton-tip applicator is used to ballot the conjunctiva and lid retractors inferiorly and allow the fat pads to reposition anteriorly (B). Once the fat pads are identified, gentle posterior pressure on the globe with the Jaeger retractor is applied to allow the fat pads to prolapse forward. Each fat pad is gently teased anteriorly with forceps. Only a moderate amount of fat should be excised from each fat pad. (From Marshak H, Dresner SC. Transconjunctival lower blepharoplasty. In: Azizzadeh B, Murphy MR, Johnson CM, editors. Master techniques in facial rejuvenation. Philadelphia: Elsevier; 2007. p. 89–98. Figure 6-6; with permission.)

on their face in the postoperative period, which makes this technique less attractive for some surgeons.

Other treatment considerations include the need for lateral canthal support to address any preexisting lower eyelid laxity, which can lead to severe lid malposition.¹⁵ A lateral canthopexy with or without a tarsal strip procedure can be performed in those patients with lid laxity that is determined to be moderate (3–6 mm lid distraction) or severe (>6 mm of lid distraction).

Summary

Lower blepharoplasty is a common procedure performed by facial cosmetic surgeons from a variety of surgical backgrounds. It has the potential to make a significant difference in facial rejuvenation, but it is associated with several complications. Unlike upper blepharoplasty, it is among most controversial topics in facial cosmetic surgery and many different techniques have been described in the current literature. All of those techniques have advantages and disadvantages that should be considered when performing a lower blepharoplasty procedure. The surgeon should be able to perform all of the previously mentioned techniques and to try to avoid treating every lower eyelid case in the same fashion. The surgeon should have knowledge of and be able to deal with all possible complications that are associated with lower eyelid surgery.

THE CHIN: WHAT IS THE BEST OPTION FOR CHIN AUGMENTATION, AN OSSEOUS GENIOPLASTY OR A CHIN IMPLANT?

Obwegeser¹⁶ was the first to describe the details of bony chin surgery back in 1957. However, it was Converse and Wood-Smith,¹⁷ in 1964, who popularized the sliding genioplasty. They described the horizontal osteotomy of the mandible to reposition the chin anteriorly. Alloplastic materials became popular in the 1980s and continue to gain popularity. Both osseous genioplasty and the use of alloplastic chin implants continue to be common procedures in the armamentarium of many facial cosmetic surgeons worldwide from multiple surgical backgrounds. The biggest advantage of an osseous genioplasty is the ability to treat almost all chin deformities, including microgenia, macrogenia, and chin asymmetries.¹⁶

One advantage of the osseous genioplasty is that it avoids the use of alloplastic materials that are associated with increased cost and complications from having a foreign body in situ for a long period of time. Another advantage of this procedure is that it is the treatment of choice for those

patients who exhibit a short lower facial height with increased projection of their chin soft tissues. That type of patient usually has a deep mentolabial groove that will only be deepened by the placement of a chin implant. Thus, they are better treated with a genioplasty that is moved mainly in a caudal direction to increase the lower facial height.

When assessing the lower facial third, a clinician must take into account the patient's gender and height. Limiting the evaluation to the chin or even just the face is a mistake that is made by many. A methodical evaluation must include the sex of the patient, their stature, the harmony of their bite, facial thirds evaluation, the proportions of the lower facial third components (upper lip, lower lip and chin), the relationship of the chin to the nose, the relationship of the upper and lower lip, the amount of incisor show, the depth of the labio-mandibular fold (marionette lines), the presence of lower lip eversion, the height and depth of the labiomental fold, chin pad thickness, and evaluation of the soft tissues of the chin at rest and during smile.

Controversy

Perhaps the controversy in this area is because a surgeon is going to perform the procedure that he or she is comfortable executing. This is most likely going to be the procedure they learned in their surgical training. For instance, oral and maxillofacial surgeons are very comfortable performing osseous genioplasties, whereas plastic surgeons are more comfortable doing alloplastic chin implants. One should not perform the same procedure on every patient who has an aesthetic need in the lower facial third, just because that is the way one was trained to do it. Instead, one should try to tailor the surgical approach to the specific needs to the patient after listening to the patient's chief complaint, completing a physical evaluation, and having a discussion with the patient about all risks, benefits, alternatives, and limitations.

Advantages and Disadvantages of Osseous Genioplasty

Both an osseous genioplasty and a chin implant have their advantages and disadvantages (**Box 1**). The main advantages of a genioplasty are the use of the patient's own tissue, which avoids the use of an alloplastic implant; the scar is intraoral; and the patient gets a genioglossus advancement, which could potentially help prevent the development of sleep apnea. This procedure, however, has fallen out of favor by some surgeons because of several disadvantages that are associated with it. It involves more soft tissue

Box 1
Osseous genioplasty compared with alloplastic chin implants placed via a submental approach

Advantages	Disadvantages
Use of patient's own tissue	Extensive tissue dissection
No implant required, less cost	More invasive
No skin incisions	Bone edges might be palpable
Genioglossus advancement	Neurosensory changes are common
	Technique-sensitive
	Plate and screws palpability or exposure
	Increased surgery time
	Floor of mouth hematoma
	Mentalis muscle strain

dissection. The mental nerve must be identified to make an osteotomy 5 to 6 mm inferior to the mental foramen, which makes short-term and long-term nerve numbness a common postoperative morbidity. Genioplasty has a higher incidence of neurosensory deficit when compared with alloplastic chin implants, with almost all cases reporting immediate neurosensory deficit. There is a possibility of mentalis muscle strain and for the metal plates and screws to become palpable and/or exposed. A genioplasty is extremely technique-sensitive and, if not done correctly, the edges of the osteotomy could become palpable. When taking into account efficiency, a genioplasty is more time-consuming than the placement of an alloplastic implant, which is an influential factor for those surgeons who practice in the private practice setting.

Because of the extensive dissection required to perform a genioplasty, there is a life-threatening complication that could compromise the airway postoperatively, which is a floor of mouth hematoma. Moreover, healing of the bony segment depends the blood supply to all of its components. Thus, resorption of repositioned bony segment could happen, which may yield a distorted look to the chin.

Advantages and Disadvantages of Alloplastic Chin Augmentation

Chin augmentation with alloplastic material comes with several advantages and disadvantages when compared with a genioplasty procedure (**Box 2**). The surgical approach and fixation techniques for chin augmentation are controversial among

Box 2
Alloplastic chin implants place via a submental approach when compared with osseous genioplasty

Advantages	Disadvantages
Less soft tissue dissection	More cost
Less invasive	Foreign body
Less severe initial neurosensory deficit	Implant displacement
Short procedure time	Implant mobility
Low complication rate	Bone resorption if no fixation used
Reversible	Skin incision

facial cosmetic surgeons. Some surgeons advocate for the intraoral approach and others prefer the submental incision approach. To secure the implants to periosteum, some surgeons do not use any fixation, others use sutures, and others use titanium screws.

The intraoral incision hides the scar in the mucosa of the oral cavity but the soft tissue dissection could be extensive. Intraoral scars may not be visible but may be bothersome to the patient if unfavorable healing takes place. To minimize dissection of the oral mucosa, a vertical incision could be made between the mentalis muscles, but this may limit visualization of the mental nerves. With the intraoral approach, bilateral mental nerves should be visualized and the implant should be screwed in place because the implant pocket is usually over-dissected with this approach. The number of screws used varies between 1, 2, and even 3. The objective is to stabilize the implant to prevent any rotation or movement. It is thought that the micromovement of the implant is a major factor that contributes to bone resorption by the alloplastic implant over the anterior portion of the mandible. When making the incision and closing in a layered fashion, the surgeon must keep in mind that reapproximation of the mentalis muscles is essential to prevent postoperative mentalis straining. A good cuff of muscle must be kept on both sides of the incision and well reapproximated to prevent this hard-to-treat postoperative complication.

The other surgical alternative for placement of an alloplastic chin implant is the submental approach. A 2 to 3 cm incision is placed just posterior to the natural submental crease, minimal soft tissue dissection is performed until the inferior-anterior portion of the mandible is reached, a periosteal elevator is then used to dissect the soft tissues along the inferior border of the mandible

bilaterally without the need to dissect the mental nerve in most individuals. Older patients might have a mental foramen that can be positioned closer to the inferior border of the mandible, in which case the nerves might be encountered. Posterior dissection is performed slightly beyond the dimension of the implant. Some of the advantages of this approach are as follows. The entire procedure is not as time-consuming as an osseous genioplasty or as the placement of an alloplastic chin implant via an intraoral approach. The layered closure includes reapproximation of the deep subcutaneous tissues and the skin edges. It does not require transection or reapproximation of the mentalis muscles. The submental approach also provides the opportunity to release the mandibular ligaments in older patients, if necessary. The submental scar is usually well tolerated and the risk of implant exposure and colonization with oral bacteria is lessened. In addition, it is a great approach to perform if the patient is already undergoing a rhytidectomy, a platysmaplasty, or neck liposuction.

Additional Considerations

Preoperative clinical evaluation and discussion with the patient are both very important in determining the best surgical approach and surgical technique. Patients who have a stable bite but exhibit clinical signs of microgenia would benefit from a quick and simple procedure such as an alloplastic chin implant to give their chin more projection. Patients with a short facial height and microgenia would most likely benefit from a sliding genioplasty that would bring the chin anteriorly and caudally to not only address the lack of projection but also to lengthen the lower facial third for a more balanced facial profile. However, the latter patient would also benefit from the placement of a vertical tilt silicone implant, which could achieve similar results.

SUMMARY

Osseous genioplasty and alloplastic chin implants are 2 acceptable treatments for lower facial third rejuvenation. Both techniques are predictable, safe, reproducible, and carry a low complication rate. The technique to be used should address the chief complaint of the patient in a safe fashion and should have the lowest complication rate in the hands of the surgeon that is performing it. Informed consent in which all risks, benefits, alternatives, and limitations to the technique are considered should be part of the preoperative work up, which could help the surgeon choose which technique to use.

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