

Volume Rejuvenation of the Lower Third, Perioral, and Jawline

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Abstract

Keywords

- ▶ facial rejuvenation
- ▶ volume replacement
- ▶ facial aging

This is the third and final article discussing volumetric rejuvenation of the face. The previous two articles, Rejuvenation of the Upper Third and Management of the Middle Third, focused on the upper two-thirds of the face while this article focuses on the lower face, including the marionette area, jawline, and neck. Again, the authors of the previous two articles have provided a summary of rejuvenation utilizing a product of which they are considered an expert. Robert Glasgold has provided volumetric analysis of the region as an introduction.

Volume Rejuvenation of the Lower Face: Robert Glasgold

Aesthetic Analysis

A youthful face is characterized as having a heart shape, with more fullness in the upper cheeks as it tapers toward the lower face. Aging is associated with a volume shift from the upper to lower facial regions. The youthful heart shape converts into a rectangular shape secondary to volume loss in the midface (periorbital, malar, submalar, and buccal) and an increase in jowl volume and descent. Despite this big picture shift in volume toward the lower face with aging, targeted addition of volume to the lower face is integral component of an optimal facial rejuvenation strategy.

The hallmarks of a youthful lower face include a smooth transition from the cheek to chin, devoid of shadowing at the

labiomandibular fold. The jawline is well defined by a curvilinear shadow coursing from the mandibular angle to the anterior chin; on oblique view the shadow framing the jawline has a “hockey stick” shape (▶ **Fig. 1**).¹ This youthful jawline shape is dependent on an adequate bony foundation providing sufficient volume at the prejowl sulcus and angle of mandible. The presence of adequate chin projection is a favorable feature in an idealized youthful lower face, but its actual presence is variable and is not in itself a hallmark of a youthful face.

There are several changes in the lower face typically seen with advancing age. Volume loss in the labiomandibular fold manifests as a shadow anterior to the jowl from oral commissure to jawline.^{1,2} The prejowl sulcus appears as volume loss progresses at the inferior portion of the mandible, anterior to the jowl. Cephalic retraction in the prejowl sulcus is due to



Fig. 1 This woman in her mid-20s demonstrates the hallmarks of a youthful lower face. The shadow delineating the jawline, from mandibular angle to chin, has a “hockey stick” shape. (Reprinted with permission from Lam SM, Glasgold MJ, Glasgold RA. *Complementary Fat Grafting*. Philadelphia, PA: Lippincott Williams & Wilkins; 2007.)

fixation of the skin to the underlying resorbing bone via the mandibular ligament. Shadowing in the labiomandibular fold and prejowl sulcus is accentuated by increased fullness and descent of the jowl. The lateral portion of the jawline experiences volume loss at the mandibular angle. The combination of anterior and posterior mandibular volume loss, in conjunction with jowl descent, converts the youthful “hockey stick” shape jawline to an irregular “w” shape (►Fig. 2A, B).

Volume loss is frequently responsible for the preliminary signs of lower face aging. A host of variables need to be accounted for when assessing the role of volume in lower face rejuvenation; these include congenital volume deficiencies, the degree and location of volume loss, and the degree and location of volume increase (i.e., jowl and buccal).



Fig. 2 (A) This woman demonstrates the changes in the lower face secondary to aging. The volume changes in the lower face lead to the jawline shadow appearing as an irregular “W-shape.” (B) Volume addition to the labiomandibular fold, prejowl sulcus, and lateral jawline with HA fillers recreates a youthful lower face by masking the jowl and restoring the youthful “hockey stick” shaped jawline. HA, hyaluronic acid. (Reprinted with permission from Glasgold Group Plastic Surgery, 2011.)

Congenital lower face volume deficiencies are most common in the chin and mandibular angle. Deficiencies in the anterior chin and prejowl sulcus will create a relative middle jawline dominance, manifesting as early jowl formation (►Fig. 3A, B). These patients tend to present at an earlier age for lower face rejuvenation as the early volume changes will more easily highlight their skeletal deficiencies. In contrast, individuals with a better baseline skeletal structure will manifest more discrete areas of volume loss as they age. In these individuals the early manifestations of lower face aging are often more easily addressed with a smaller but more focused volume added strategy (►Fig. 4A, B).

As aging continues into the late 40s and beyond, the degree of jowl fullness and descent become an increasingly important factor in facial rejuvenation. Merely adding volume in the jawline will not be enough to mask a heavier jowl. In these individuals, a lower facelift has a primary role in obtaining an optimal natural rejuvenation. Despite the shift in importance to face-lifting in this age group, failure to address underlying volume loss may result in inadequate lower face rejuvenation. If volume is not restored in the prejowl sulcus at the time of facelift the patient may appear to have incomplete correction of the jowl. Additionally, inadequate baseline mandibular angle volume may account for incomplete jawline rejuvenation following a facelift (►Fig. 5A–C).

In the remainder of this article, the contributing authors will discuss their approach to addressing lower face volume deficiency. Each contributor will focus on their use of a particular injectable material, highlighting the advantages of a given material, and their procedural techniques.

Hyaluronic Acid Rejuvenation—Lower Face: Theda C. Kontis

Lip Augmentation

Hyaluronic acid (HA) is the ideal lip filler. It is soft, moldable, and lasts approximately 6 to 8 months. The injector should



Fig. 3 (A) Congenital volume deficiency is responsible for the appearance of early jowl formation in this 30-year-old woman. (B) A more youthful jawline is achieved through augmentation of the chin and prejowl sulcus with an implant, fat transfer to the lateral jawline, and buccal fat pad reduction (fat was also added to the midface and upper lid). (Reprinted with permission from Glasgold Group Plastic Surgery, 2013.)

have knowledge of normal lip anatomy and use the filler as an artist would paint the lips, highlighting the normal anatomy, not just adding extra volume (► **Fig. 6**).

The injector should first analyze the lips to determine how filler will be placed. The upper lip consists of three segments, one central philtrum, and two lateral segments. The lower lip is one continuous segment. The lips also should have a prominent roll or junction between the skin and pink of the lip.

Aging lips show a loss of the lip roll, deflation of volume, and loss of the philtral columns. The lips can be revitalized

with appropriately placed filler; however, excessive amounts of filler placed without regard to lip aesthetics can look bizarre.

My first approach to the lips is to outline the lip roll. The needle is inserted in the vermillion and by anterograde injection; filler can be seen to track along the border of the lip, providing an enhanced shape to the lips. This injection is performed from lateral to medial, injecting from each side, for both the upper and lower lips. Treating the vermillion border also softens smoker's lines or lipstick lines. It can also be used to even out the upper lip borders in patients with obvious



Fig. 4 (A) Volume loss in this woman in her late-40s is a significant factor for lower face aging with development of a labiomandibular fold and irregular jawline. (B) Injections with a hyaluronic acid-based filler in the labiomandibular fold, prejowl sulcus, and mandibular angle recreate a youthful lower face. (Reprinted with permission from Glasgold RA, Meier JD, Glasgold MJ. Volumetric approach to rejuvenation of the lower face. In Sadick N, Carniol P, eds. Illustrated Manual of Injectable Fillers: A Technical Guide to Volumetric Approach to Whole Body Rejuvenation. New York, NY: Informa; 2011.)



Fig. 5 (A) A patient in her 60s with signs of lower face aging. (B) Inadequate jowl correction after facelift due to volume deficiency in the prejowl sulcus and mandibular angle. (C) Fat transfer to augment these volume deficiencies results in a more optimal jawline rejuvenation. (Reprinted with permission from Glasgold Group Plastic Surgery, 2012.)

asymmetries. These are the patients who must wear their lipstick over the vermillion on one side to bring symmetry to their cupid bow.

Once the vermillion is injected, lip volume is assessed. Injection is then placed in the pink of the lip to enhance lip volume. This injection should be performed in three segments: lower lip, right upper lip, and left upper lip. Massage of these areas is important not only to smoothen out any lumps, but also to palpate any areas that have been missed.

The lipstick lines or smoker lines are often improved with the first injection along the vermillion border, and more troublesome lines can then be addressed by depot injection directly into each rhytid. Care must be taken here to avoid lumpiness. Massage of the region after injection is helpful, as is using a thinner HA such as Juvederm (Allergan, Inc., Irvine, CA). Alternately, a cross-hatching technique can be used on the upper lip to avoid the occurrence of ridges radiating out from the lips where filler was placed.

The oral commissure is next addressed. Filler can be placed in an x-shaped linear thread to elevate the oral commissure. If more lift is needed, a depot injection can be placed just inferior to the oral commissure. In extremely difficult cases, consideration should be given to also placing

botulinum toxin type A (BoNTA) into the depressor anguli oris muscle. After injection of the oral commissure, I usually place one finger inside the mouth and another outside the mouth to shape the commissure injections and flatten any palpable submucosal lumps the patient may feel with their tongue.

The philtral columns can be treated also, by placing a very small amount of filler as a linear thread along the philtrum and squeezed to shape. These two columns must be placed symmetrically and not overcorrected.

Injection of the lips is painful and some patients require dental blocks before injection. I use 4 mL of 2% lidocaine, injected intraorally to block the infraorbital and mental nerves. The block takes effect immediately and lasts only about 20 minutes. The use of epinephrine is discouraged for these injections, because some patients develop an unsettling tachycardia from its use.

Lips postinjection are usually a little sore and may be bruised. Ice is helpful in the early posttreatment period. Any HA may be used in the lip, but patients who are concerned with the presence of lumps prefer Juvederm because of its syrup-like consistency and it seems to cause less swelling in the lips than other HA products.

Any patient with a history of oral herpes simplex is placed on a 7-day course of an antiviral medication to prevent herpetic eruptions. Postoperative complications usually include lumpiness and asymmetry. HA injected into the lips does not last as long as other locations due to the movement of the lips, but can be expected to last approximately 6 months.

Marionette Lines

Marionette lines (MLs) are often treated in conjunction with the oral commissure or the prejowl regions and HA offer excellent results in this region. HA can be injected by linear threading or by fanning in the dermal or subcutaneous planes. Bruising is common in this region and ice posttreatment is helpful. Results can last 6 to 8 months. Often treatment of the oral commissure is performed in conjunction with the MLs (—Fig. 7).

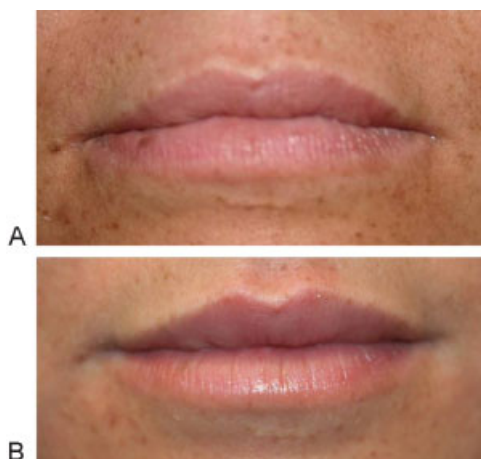


Fig. 6 (A) Before and (B) 1 month after augmentation of the lips.

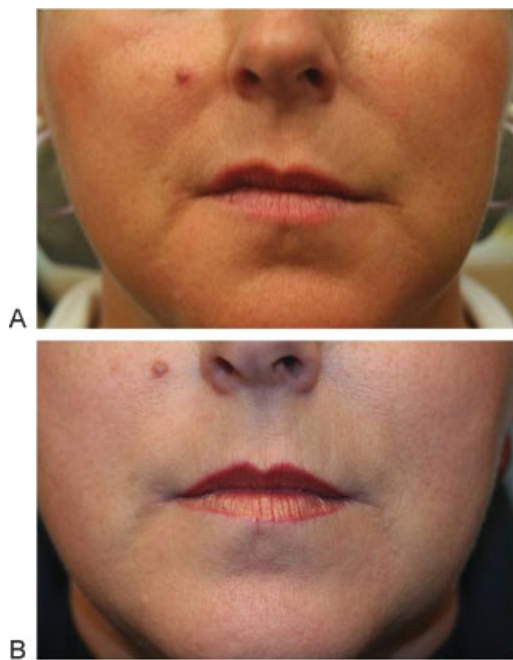


Fig. 7 (A) Before and (B) 5 months after HA injection of the NLF, lips, oral commissures, and marionette lines. HA, hyaluronic acid; NLF, nasolabial fold.

Prejowl Region

The jawline can be smoothed and the prejowl camouflaged by using HA fillers either in the subcutaneous or preperiosteal plane, and either linear threading or depot technique. Injectors may notice that injections in this area must be placed under the mandibular rim as well to improve the prejowl concavity. Product is injected and massaged to smooth the contours and fill in the prejowl depression. Results in this region can last up to 6 to 8 months.

Mental Crease

The mental crease is deep in some patients and filler in this region can soften a deep crease. Filler is placed by linear threading and massaged into place. HA is placed in the Sub-Q (SQ) plane. If placed too superficially, small blue lumps of product will appear. These can be removed by inserting a 20 G needle into the lump and extruding the product. It is very painful for patients to have this injection placed, and I usually reserve this injection as the last area to be treated during the lower face injection session.

Chin Augmentation

Volume can be added to the chin by placing HA on the periosteum of the mandible. There is low risk to injection in the region, and HA is a good choice since it is reversible with enzyme, if necessary. If the patient is considering a chin implant in the future, it is a nice way to decide how they like the augmentation and how much augmentation would be required. Filler is placed by depot injection onto the periosteum and deep subcutaneous tissue and can be slowly titrated to achieve the desired result. I prefer HA that provides more lift in this area; either Perlane (Galderma, Lausanne,

Switzerland) or Voluma (Allergan, Irvine, CA). Results may last up to 6 to 8 months or more.

Calcium Hydroxyl Appetite Lower Face: Yalon Dolev and Steve Smith

Lower Face—Marionette Lines/Oral Commissure

The use of Radiesse (Merz Aesthetics, Frankfurt, Germany) for MLs is also on-label and has been reported extensively. Again large studies have shown it to be effective and durable.³⁻⁵ The goal should be to soften these lines as they are often impossible to fully efface and attempts to do so will often form a raised mound with a persistent rhytid centrally. The technique used is similar to that used in the nasolabial fold (NLF) in that it is placed subdermally and fanned across the ML. Although the area of the ML is small, its correction can often require significant volumes of filler since there is no underlying structure supporting the filler and it volumizes inwardly toward the oral cavity as much as it does outwardly. As much as 0.5 mL can be used here depending on the depth of the ML. In addition, injecting inferomedially to the ML can help upturn the corner of the mouth.

Prejowl Sulcus/Jawline

Jowling is one of the most unwanted effects of aging and along with the NLF, is one of the areas of greatest concern for aging patients. The appearance of jowls is exacerbated by the loss of volume in the prejowl sulcus as well as along the jawline more posteriorly. Volume restoration of these sites in isolation or in combination with other modalities to treat the jowls can have remarkable effects on the appearance of aging.

The injection of Radiesse in this area has similarities with its use in the malar region in that it is off-label, it is injected just supraperiosteally, boluses of Radiesse are used to achieve volume correction, and the mental nerve must be blocked before injection. The prejowl sulcus and jawline volumetric defects are subjectively marked with the patient erect or sitting and the area cleansed with alcohol. After successful local anesthesia, small boluses of Radiesse are placed along the inferior border of the prejowl sulcus and jawline. It is this author's preference to inject in a supraperiosteal plane although other authors have described a subdermal injection.^{3,6} Great care is taken to avoid the mental nerve. Injury of the facial vein can cause significant ecchymosis. Small amounts of Radiesse must be carried just under the border of the mandible to avoid an unnatural appearing jawline. The areas are then massaged to smoothen out the jaw contour.

Blunt Cannula Use

In an effort to reduce adverse events, the use of various sized blunt-tipped cannulas has been employed. Several advantages have been proposed. These include decreased likelihood of intravascular injection, decreased likelihood of nerve injury, and decreased bruising. A double-blind randomized study has found decrease in pain, bruising, and swelling when using blunt-tipped cannula.⁷ There is currently no consensus on this topic and the use of blunt cannula is considered off-label.⁸

Complications

Local Reactions to Injection

Immediate pain, erythema, edema, and ecchymosis are common sequelae of any filler injection. There is however no significant difference between local reactions to other soft tissue fillers and Radiesse. These resolve within days.⁹

Nodules

Nodule formation postinjection is uncommon with calcium hydroxyapatite except when injected into mucosal surfaces such as the lips. For this reason, injecting the lips is not recommended. They are due to inadequate placement of the filler material either too superficially or in a lumped fashion. They can be entirely avoided by careful placement of the filler and massaging of the surrounding tissues peri-injectionally. When they occur, they can be injected with steroids although because they are not inflammatory in nature, its benefit is questionable. Instead, some others advocate saline injection and massage to try to disperse the nodule. Ultimately, they can be unroofed using an 18 G needle or excised completely.³

Infection

Bacterial infections secondary to soft tissue fillers are uncommon. The incidence of infection secondary to Radiesse is extremely rare likely owing to its very small pore sizes which do not allow for the ingrowth of bacteria or biofilms. Any patient with a known history of herpes simplex virus (HSV) should receive antiviral therapy before treatment.¹⁰

Vascular Compromise and Overlying Tissue Necrosis

The risk of vascular compromise by intravascular injection or mechanical compression exists with all fillers and is the most dreaded complication. Although its exact incidence with Radiesse is unknown, it is estimated at 0.001% with collagen and HA fillers. The most affected sites are the glabellar region as well as the alar-facial groove. Intra-arterial injection is usually followed by blanching of the skin over the affected area and often severe pain. Erythema follows and necrosis takes place over the next 3 to 5 days.

Treatment consists of immediate cessation of injection, massages to try to dislodge the filler away from the area of compromise, and warm compresses to promote vasodilation. Application of nitroglycerin paste should also be used to further promote vasodilation. Despite the fact that hyaluronidase does not degrade Radiesse, it should be immediately

injected to degrade hyaluronan, a potent proinflammatory mediator associated with tissue necrosis. Approximately 10 to 30 units diluted 1:1 in saline should be used. Daily Aspirin and corticosteroids should be used to prevent inflammation. Hyperbaric oxygen should be considered when available.¹¹

Summary

Calcium hydroxyapatite is a safe, biocompatible, injectable soft tissue filler with an excellent longevity profile. Its rheological properties confer excellent volumization as it has the highest potential to displace surrounding tissues of all the soft tissue fillers. It is used both on- and off-label for the correction of moderate to deep furrows as well as for volume restoration of the face. Caution should be used in particular anatomical locations and physicians should have a thorough understanding of the facial skeletal, soft tissue, and neurovascular anatomy before its use. Although serious complications are rare, clinicians should be able to identify them and treat them accordingly.

Poly-L-Lactic Acid, Upper Face: Rebecca Fitzgerald

Areas to avoid: Treatment directly in the fibers of the muscles at the lip commissures (modiolus) or in the depressor anguli oris muscle as well as in the mandibular ligament/platysma muscles may lead to trapping of particles and subsequent nodularity.¹²

Areas to treat: Recontouring of the lateral third of the mandible/mandibular angle and in lower lateral cheek compartment. Injections in this area should be in the superficial subcutaneous fat above the parotid gland and masseter muscle.

Supraperiosteal injections over the menton and prejowl sulcus: In these areas, a short (26 G using 0.1 mL per pass for cross-hatching) or a long (25 G using 0.1–0.3 mL/cm² for fanning) needle may be used. Depot injections of 0.3 to 0.5 mL followed by firm massage may also be used. A reflux maneuver before injection may decrease the risk of inadvertent intravascular injection. Some practitioners prefer cannulas. As with all other areas the endpoint with this agent is to “blanket” the area to be treated at that session only using the surface area to be treated as your guide. This will ensure an even distribution of particles. Recall that the host reaction to this even distribution of particles results in fibroplasia that



Fig. 8 A 42-year-old woman received one vial per session and two sessions in her mid and lower face, respectively, with poly-L lactic acid (PLLA).



Fig. 9 A 50-year-old patient with familial lipoatrophy received three vials per session and three sessions in her upper, mid, and lower face with poly-L lactic acid (PLLA).

provides the fill. “Too much too soon” may lead to an overabundance of particles and subsequent nodularity. Recall that the full volumetric correction is attained by the number of sessions. In most patients this is easy to do as the suspension causes some distention of the tissue making it easy to avoid overcorrection.¹³

► **Figs. 8 to 10** illustrate the results achievable with this technique. ► **Fig. 10** is also a good illustration of the subtle change in the position of the nose achievable with supra-periosteal injections around the pyriform aperture.

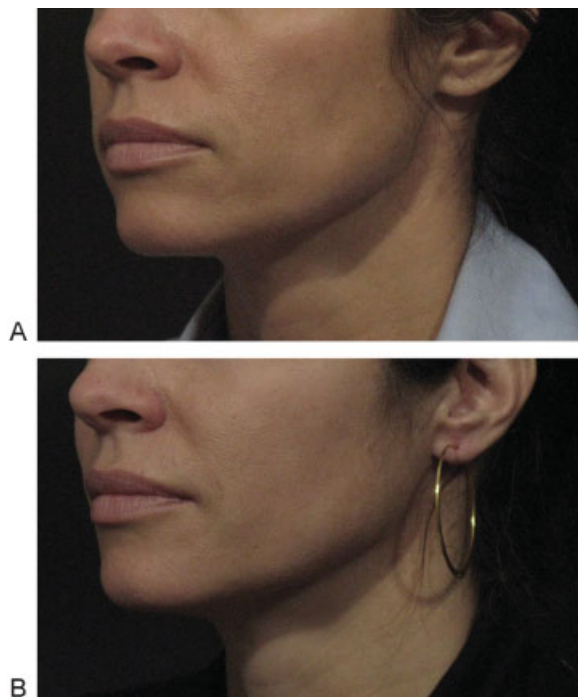


Fig. 10 A 41-year-old patient received one vial per session and two sessions of PLLA in her mid and lower face.

► **Fig. 11** provides a summary of placement depth of this product in the upper, mid, and lower face.

Polymethylmethacrolate/ArteFill Lower Face: Sam Lam

Volume Rejuvenation of Lower Third—Perioral/Jawline with ArteFill

ArteFill (Suneva Medical, Santa Barbara, CA) works very well in the lower face but like the midface, I do not believe that there are any special instructions or benefits when using ArteFill in the lower face. I use ArteFill interchangeably in this highly forgiving area precisely the same way that I use all other fillers. As mentioned, I use 100% cannula injections for all my fillers except when trying to inject intradermally for

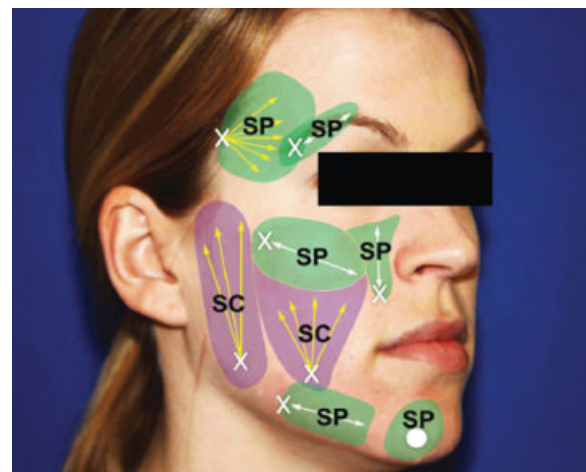


Fig. 11 Schematic diagram illustrating recommended depth of placement of PLLA in the upper, mid, and lower face. (Reproduced with permission from Vleggaar et al. Consensus recommendations on the use of poly-L-lactic acid for facial and nonfacial volumization. *J Drugs Dermatol* 2014;13(suppl 4): s44–s51.)



Fig. 12 This figure demonstrates the access point (dot, shown as “a”) and the direction of cannula injection to augment the prejowl (lower arrow), anterior chin (middle arrow), and labiomandibular sulcus (upper arrow).

reasons of safety and ecchymosis. In the past, I would use a needle to inject because simply put it is easier in the labiomandibular fold region but I have made it a point to inject all areas of the lower face with a cannula to mitigate risk. As shown in ►**Fig. 12**, I typically inject in a fanning direction to cover the prejowl sulcus, the anterior chin, and the labiomandibular fold; I believe that this area is a critical zone to augment to improve the face aesthetically with varying proportion depending on the greatest soft-tissue deficit. One pearl that I can share is that I use a \$10 massager purchased on Amazon to vibrate near the tissue that I am injecting to substantially minimize the pressure sensation that occurs when fillers are injected in the canine and prejowl areas. I have found it to help significantly. The one area that is

an absolute contraindication for the use of ArteFill is lip enhancement, which if done will lead to a lumpy, indurated mess. Similarly, I use ArteFill as a deep filler and try to stay away from the immediate lip border region, so I do not use it for superficial lip “smoker” lines (unless the lip line is very deep, which I have done just once with ArteFill with success).

Autologous Lipotransfer Lower Face: Taylor R. Pollei and Edwin F. Williams

Often overshadowed by rhytidectomy, chin/prejowl implant placement, or resurfacing modalities for perioral and jawline rejuvenation, autologous lipotransfer remains a valuable adjunct in lower third rejuvenation. Similarly, the midface is the most common area treated with autologous lipotransfer. When critically analyzed, the aging process and anatomy of the lower facial third lend themselves well to autologous lipotransfer. Global subcutaneous loss is manifest by the development of fine rhytids, and cutaneous dimpling. As the lower face structures descend, cutaneous ligamentous attachments become attenuated and “compartmentalization” occurs, creating focal areas of deficiency. These include the nasolabial fold, downturned lateral commissure, hollowed upper lip, and the inverted “U” surrounding the chin which includes the prejowl sulcus laterally.¹⁴

Fat transfer has been described in lower face rejuvenation with good efficacy and safety.^{15–17} As with additional volumizers and fillers, there are attractive features and detractors to fat transfer. Pros include its cost-effectiveness, adequate supply, accessibility, biocompatibility, longevity, and ease of injection.^{18,19} Critiques include prolonged recovery, bruising, swelling, and outcome unpredictability.

The specific fat graft harvest and processing technique we employ has been well described previously, therefore this discussion will not focus on the details.^{20,21} Fat harvesting and injection can be performed under local anesthesia with or



Fig. 13 (A) Preoperative: Lipotransfer to bilateral lower face and midface. (Additionally midface lift, facelift, bilateral upper and lower blepharoplasty and 35% TCA peel.) (B) Postoperative: Lipotransfer to bilateral lower face and midface. (Additionally midface lift, facelift, bilateral upper and lower blepharoplasty and 35% TCA peel.) TCA, trichloroacetic acid.



Fig. 14 (A) Preoperative: Lipotransfer to bilateral lower and midface, with 35% TCA peel. (B) Postoperative: Lipotransfer to bilateral lower and midface, with 35% TCA peel. TCA, trichloroacetic acid.

without oral sedation versus monitored anesthesia care or general anesthesia. Donor site preference in descending order includes: periumbilical abdomen, flank, outer thigh, and inner thigh. We inject approximately double the amount of tumescent solution as the goal lipoaspirate volume. Following centrifugation, with removal of supernatant and infranatant, typically 50 to 60% of the lipoaspirate volume remains for injection.

Key Points

Lipotransfer to the perioral region does more than just volumize. It reduces the cutaneous attachments to the mimetic muscles that are exacerbated with subcutaneous tissue loss, thereby decreasing fine rhytids, cutaneous puckering, and tethering.

In patients with significant skin laxity, there may be a limited effect with volumization in general, even with lipotransfer where a greater volume of injection may be available. In these situations with extra soft tissue envelope, skin resurfacing or adjunct surgical lifting procedures are indicated.

The lower perioral prejowl area is very forgiving. Focus the fat injection in an “inverted U” pattern surrounding the chin. Keep injections deep, practically scraping periosteum.

Oppositely, the upper perioral area is the first to show the stigmatized and overinjected appearance. If the nasolabial fold is overaugmented or obliterated the result is unnatural (→ Fig. 13A, B).

Nonautologous fillers are often used successfully to address focal issues such as down-turned lateral commissures or



Fig. 15 (A) Preoperative: Lipotransfer to bilateral lower and midface, with 35% TCA peel. (B) Postoperative: Lipotransfer to bilateral lower and midface, with 35% TCA peel. TCA, trichloroacetic acid.

perioral fine rhytids, thus acting as true fold filler. Autologous fat is more appropriately thought of as a tissue volumizer.

Counsel patients of age extremes, smokers, or those who exercise heavily that they may exhibit less immediate graft take and notice a shorter duration of effect. This is especially a concern in the perioral region, where smokers tend to have even more prominent age-related changes.

Nasolabial Fold/Upper Lip Lipotransfer

The upper lip injection should be placed with a goal of diffuse upper lip volume restoration, tracing laterally from the nasolabial folds medially to the philtrum. Overaggressive volumization of the nasolabial folds or philtrum effaces natural convexities and concavities and results in an unnatural appearance. Injections corresponding to the subcutaneous layer above the orbicularis oris (white lip) do well. The red lip is more difficult to inject and obtain reliable, satisfactory results. Trocar stab entry sites are created 1 to 2 cm laterally and slightly above the oral commissure. This enables injection of the upper lip and nasolabial fold through a single injection port. In the nasolabial fold, 2 to 3 mL of fat can be injected on each side. In the upper white lip, an additional 1 to 2 mL can be injected on each side, all injections performed with a 1.2 mm blunt-tipped cannula.

Lower Lip/Chin/Prejowl Lipotransfer

Although without a rhytidectomy, prominent prejowl sulcus may not be aggressively corrected, it can be softened with fat injection placed subcutaneously and in a supraperiosteal layer in the MLs and more superficially coursing up to the mental sulcus. This can be accomplished through a single injection site placed just lateral to the prejowl sulcus approximately 1 cm above the mandibular margin. Depending on the depth of mental sulcus, 2 to 3 mL of fat can be injected centered at midline, with an additional 2 to 4 mL of fat placed on each side in the prejowl area. Gentle massage postinjection is helpful to smooth potential areas of lumpiness (→Figs. 14 A, B; 15 A, B).

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