Perioral Filler Augmentation

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KEYWORDS

• Perioral filler • Lip filler • Perioral vertical lip rhytids • Marionette lines • Nasolabial folds

KEY POINTS

- Perioral tissues present some of the first signs of the aging face, and thus, perioral fillers are oftentimes the first cosmetic procedures requested by patients.
- Perioral fillers provide a temporary means of augmenting volume and softening common lines of the face.
- Injections in the perioral area can include the lips, nasolabial folds, philtral columns, vertical lip rhytids (perioral "smoker lines"), oral commissures, melomental folds (marionette lines), mentolabial folds, and nasolabial folds.
- Technique of perioral filler injection depends on the region, product, and desired augmentation.

Introduction

Perioral tissues, similar to all tissues, undergo aging due to decreased proliferative capacity, accumulating cellular damage, and inherited genetic predispositions. These changes can be exacerbated by extrinsic factors such as sun exposure, tobacco use, and mechanical stress. Perioral augmentation can help mask many age-related changes of the face. The presence of nasolabial folds is one of the earliest esthetic complaints made by patients (Fig. 1A). Nasolabial folds continue to deepen with age (see Fig. 1B). Over time, lip volume diminishes and the vermillion border loses definition. Even young patients without physical signs of aging seek lip filler for an esthetic boost. A pronounced cupid's bow with defined *philtral columns* is a common display of youthful lips. Conversely, thin lips result in deepened oral commissures, which can give patients a frowning look at rest. Melolabial folds, commonly called "marionette lines," are resting lines from the oral commissures extending inferiorly, which, along with nasolabial folds, accentuate jowling. The mentolabial fold is a horizontal line that can present between the lower lip and chin as the lip volume thins and the chin begins to sag. Perioral vertical rhytids are typically an esthetic complaint of the elderly face (see Fig. 1C). These are colloquially called "smoker lines" due to the earlier presentation caused by repetitive pursing of the orbicularis oris during smoking. With age, fine lines can develop anywhere on the face from decades of muscular movement and sun exposure.

Surgical technique

Preoperative Planning

Although each filler product has different properties, recommendations can differ among injectors depending on experience and availability of product. Ultimately, choice of filler is a personal choice that can be altered for each clinical scenario. Important properties to consider include firmness (G′), cohesivity (resistance to spread), and water affinity. An overly simplified spectrum exists—on one end are low-density, low G′ fillers commonly described as "silky, smooth, thin, flowable" such as Juvederm Volbella, Restylane Refyne or Silk, and Revance RHA Redensity. On the other end are high-density, high G′ fillers commonly described as "hard, dense, solid, bulky" such as Juvederm Voluma, Restylane Lyft, and Revance RHA 4. A useful resource regarding filler choice will be the producer's websites because many manufacturers market certain filler products for certain regions of the face.

Management of expectations is the most important step in cosmetic procedures. In all cases, the injector should review expectations with the patient, using both preop photographs and a mirror.

As part of expectation management, the patient should be counseled to expect the need for "touch-ups," rather than expecting a perfect result after a single appointment (Fig. 2). This may not be needed but better to set the expectation and not need it, rather than confront a patient who was expecting one appointment for perfection. Patients should be counseled about the degree of edema, erythema, and ecchymosis that can present in the perioral areas following injections. Especially for injections to the lip, the true cosmetic result will be less than the immediate post-injection appearance. Patients commonly seek out filler before important events such as weddings, birthdays, and vacations. Given the possibility of edema and ecchymosis following injections, we recommend filler augmentations be delayed in such cases.

Prep and Patient Positioning

Before injecting, the patient's skin is cleaned using standard alcohol wipes. Novice practitioners may find a marking pencil helpful for planning and discussing expectations with the patient. Local anesthesia for filler injections can range from no anesthesia to regional nerve blocks. Whether additional anesthesia is planned or not, ice packs applied to the face are recommended to

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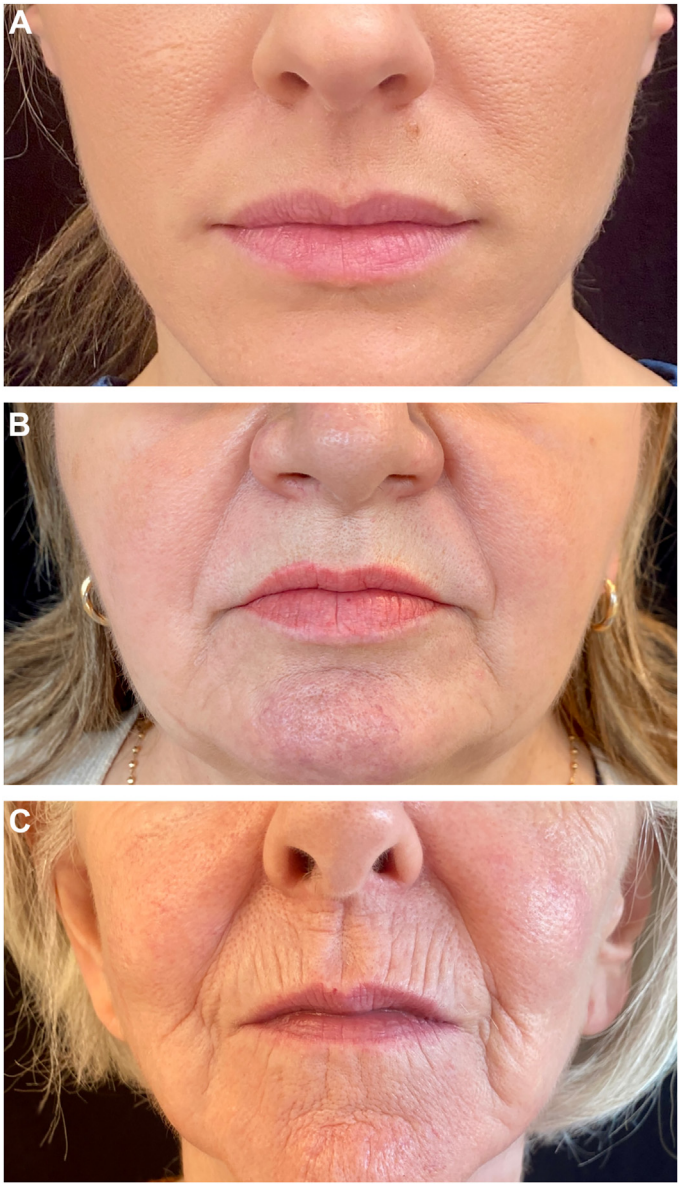

Fig. 1 (*A*) This 31-year-old woman presented with early perioral age changes of the nasolabial folds. (*B*) Compare this to a 56-year-old woman with deepening of the nasolabial folds and marionette lines. (*C*) Compare this to a 71-year-old woman presenting with deep nasolabial folds, marionette lines, thinning skin, thinning lips, and several perioral vertical rhytids.

reduce swelling and also give the benefit of temporary skin anesthesia. Many filler products contain lidocaine, and thus will anesthetize locally as injections progress. Many providers find topical anesthetics useful, which are applied up to 60 minutes before injections. Complete anesthesia of the perioral region can be easily achieved with bilateral mental nerve (Fig. 3) and infraorbital nerve (Fig. 4) blocks. Although this approach is very effective, some patients are uncomfortable with the profound degree of anesthesia that results in temporary drooling, inability to eat, and loss of facial sensation for the duration of the anesthetic. Positioning of the patient for perioral augmentation is always in the upright position. The supine position changes the vector of gravity on tissues, which is oftentimes what perioral filler is attempting to overcome or mask. The injector should inject and observe progress from multiple angles.

Lip Filler

The technique for lip filler augmentation is based on the desired change in shape. The upper lip can be thought of as 3 tubercles with an "M"-shaped border, and the lower lip is thought of as 2 tubercles with a "U"-shaped border as shown in Fig. 5. The lips should not be filled as one continuous unit of even density.

Increased volume of the lips is accomplished by injecting product into the orbicularis oris muscle. The needle is inserted near the vermillion border (Fig. 6), advanced, and product is injected as the needle is withdrawn. Typically in younger patients, the regions of the lips lateral to the ala of the nose are not injected to avoid "sausaging" of the lip (Fig. 7); however, older patients with deepened commissures (Fig. 8) often benefit from injections extending to the commissure.

For the lower lip, a subtle midline cleavage is oftentimes desired to accentuate the bilateral pillars of bulk and prevent one long "tube" look. This can be achieved by inserting dental floss between the mandibular midline contact and holding the floss vertically against the lower lip during injections and molding (Fig. 9).

If the intended change in shape is increased vertical height of the lip, the needle can be inserted vertically from the vermillion border. Product is then threaded upward on withdrawal as shown in Fig. 10.

Following injections, petroleum jelly is placed on the lips and a gentle massage is carried out to smoothen the product. This can be achieved by gently pinching the lip from the extraoral and intraoral sides and molding of the product (Fig. 11). The less dense fillers are especially amenable to massage to achieve a result without lumps or asymmetries.

Especially in the elderly face, patients may seek increased definition of the vermillion border specifically. To achieve this, the needle is inserted horizontally following the vermillion border.

However, instead of injecting deeper in the muscularis, the product is deposited more superficially to give a defined, accented vermillion border. Fig. 12 demonstrates the result for a patient who specifically requested a more pronounced vermillion border. This defined border is commonly lost in middle age.

An esthetic subnasal region depends on a pair of well-defined columella and vermillion border, giving rise to a pronounced cupid's bow and philtrum. To define the columella, the needle is inserted at the peak of the cupid's bow on either side and advanced to the base of the nose, following the natural course of the pillars (Fig. 13). Product is injected on withdrawal. It is essential to follow a natural angle of the philtral columns, which are usually slightly diverging from the subnasale to the vermillion border, ending in the bilateral peaks of the cupid's bow (Fig. 14). Parallel or asymmetrically diverging columns will result in an unesthetic infranasal region.

Many first-time patients request low volumes due to concerns of a "fake look" from too much filler. Generally, 0.5 mL or less to the lips will have virtually no perceivable effect once swelling has resolved (Fig. 15). A reasonable starting volume for virgin lips is around 1.0 mL (1 syringe), which should provide a noticeable effect to the patient without concern for excess. Too much volume into virgin lips increases the risk of filler migration into the surrounding skin, giving the dreaded "duck lip" appearance.

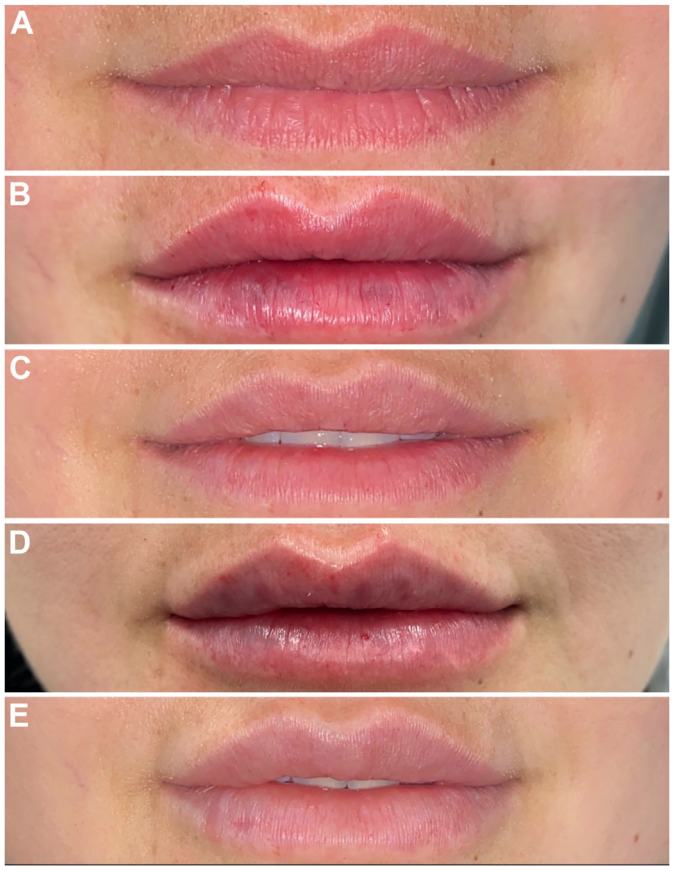

Fig. 2 (*A*) A 30-year-old woman's preop photo. This patient's lips seemed symmetric immediately after injections (*B*), however, note the asymmetry of the upper lip following resolution of swelling (*C*). Additional filler was placed (*D*) to achieve a more symmetric final result (*E*).

Perioral Vertical Rhytid Filler

Perioral "smoker lines" are often extremely fine. Rather than injecting product linearly on withdrawal similar to many other filler injection techniques, the approach to vertical lip rhytids

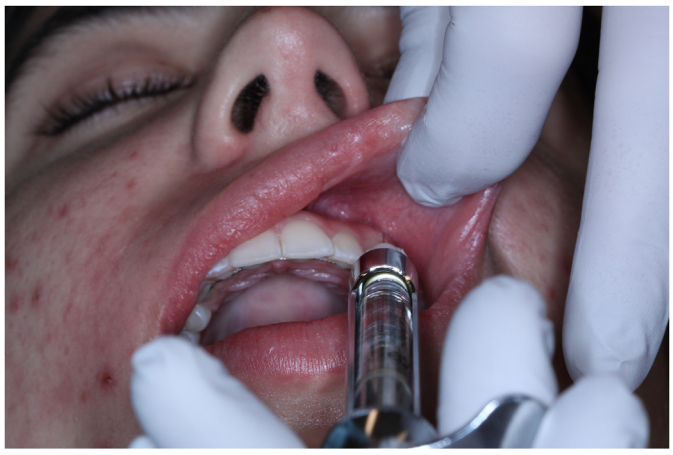

Fig. 3 Complete anesthesia of the perioral region can be easily achieved with bilateral mental nerve and infraorbital nerve blocks. To achieve an infraorbital nerve block, a long 27-gauge needle is inserted in the maxillary vestibule apical to the canine tooth or first premolar and advanced superiorly to the infraorbital region.

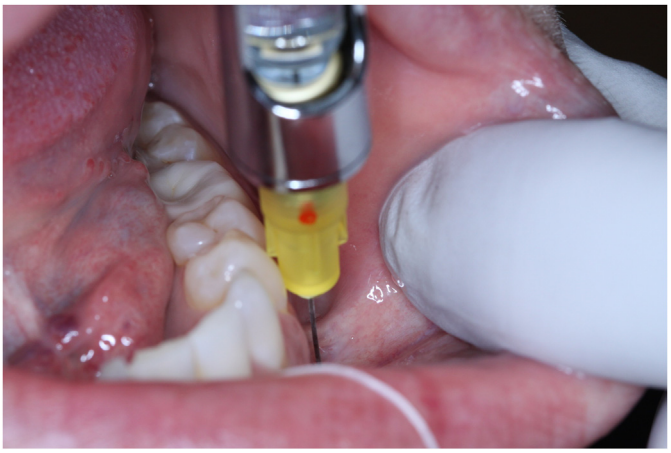

Fig. 4 To achieve a mental nerve block, the needle enters at the mandibular vestibule near the first and second premolar, and the needle is advanced inferiorly to the area of the mental foramen.

should be small boluses that are massaged through the lines. As shown in Fig. 16, the needle is inserted near the vermillion border, advanced, and a very small bolus is injected superficially in the center of the line. The product is then massaged to fill the fine rhytid. For this reason, the lowest density fillers are needed such as Juvederm Volbella or Restylane Silk. Some authors also recommend creating perpendicular threads deeper under the vertical lines to create a lattice to bulk the thin tissue.

Fine lines of the face can be tenacious. A mistake would be aggressive deposition of product that would leave the tissue distorted. For many perioral fillers, it is wise to treat half of the face and demonstrate the difference to the patient, as in Fig. 17. As for all perioral filler, edema begins almost immediately and will obscure the final look. Small amounts of filler over multiple appointments can oftentimes be the best option for fine lines to avoid overfilling and distortion of tissues

Fig. 5 Overlay of the lips displaying the areas of anatomic bulk and curved borders. The upper lip can be thought of as 3 tubercles with an "M"-shaped border, and the lower lip is thought of as 2 tubercles with a "U"-shaped border.

Fig. 6 The needle is inserted horizontally near the vermillion border and advanced to its destination, keeping in mind the natural shape of the lip.

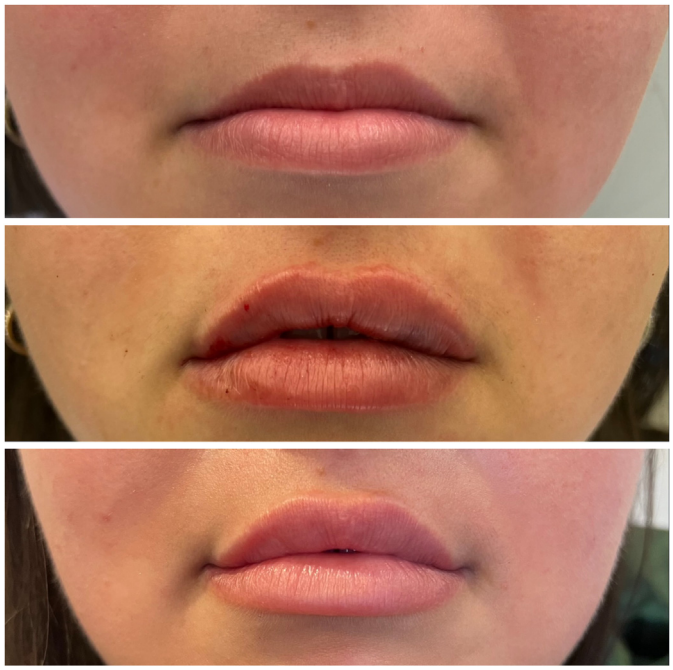

Fig. 7 This younger patient was satisfied with her result but note the lateral bulk of the top lip, which can result from extending the filler too far laterally.

Fig. 8 Advancing the needle to the oral commissure of this patient is indicated due to the lack of lip volume and deepened commissure, although this is typically avoided in younger patients.

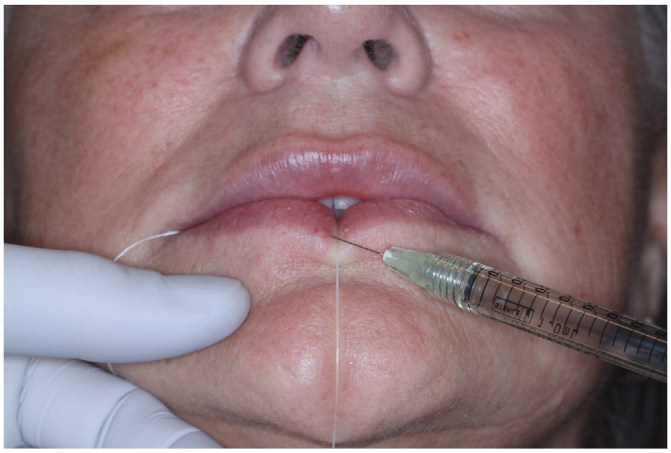

Fig. 9 Dental floss inserted between the mandibular midline contact is held firmly on the midline during injection to create a final result respecting the natural anatomy.

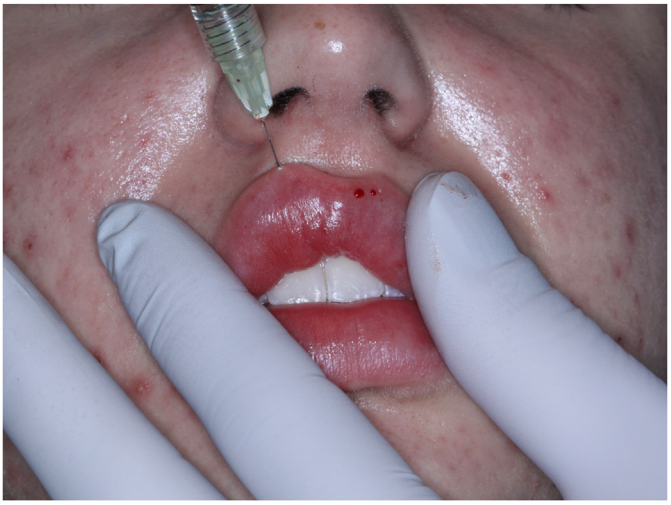

Fig. 10 Product is threaded upward in a vertical direction to achieve an increased vertical height of the lip.

Fig. 11 The product is smoothened by gently massaging the lip from both the extraoral and intraoral sides.

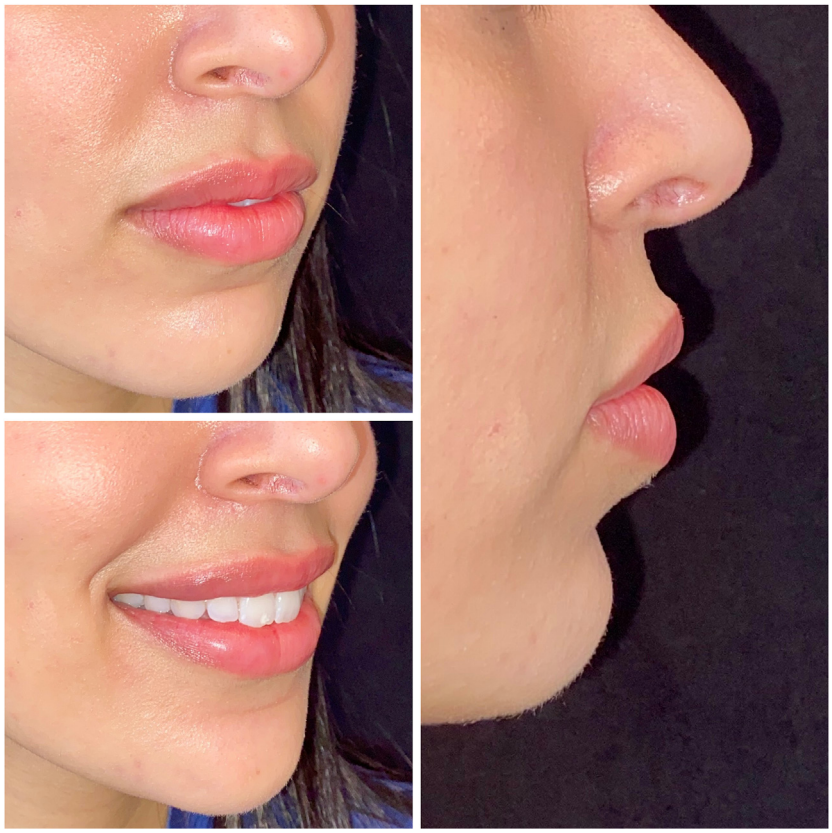

Fig. 12 More superficial injections along the vermillion border provided this patient with her desired result of a more pronounced border.

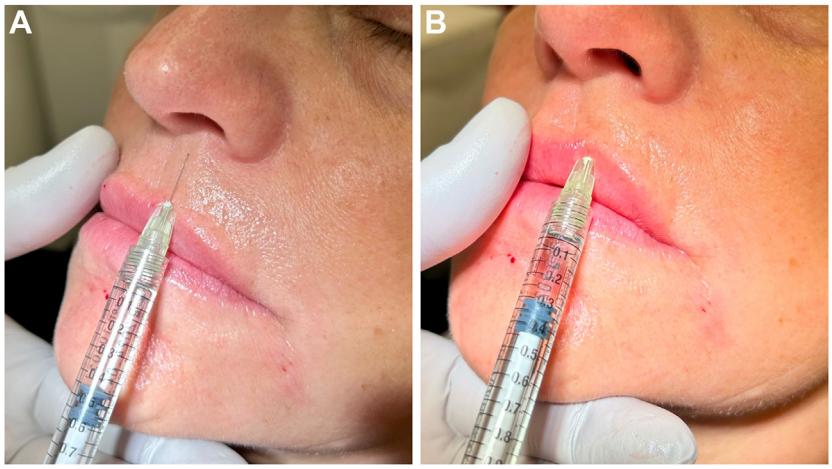

Fig. 13 (*A*) Lining up the path of the needle for filler of the columella, note how the natural diverging path of the columella is respected. (*B*) The needle is inserted at the peak of the cupid's bow and advanced. Product is injected on withdrawal.

(Fig. 18). Lip filler before vertical rhytid injections improves the result because volume in the upper lip can reduce the appearance of vertical lip rhytids, even before direct injection of the lines themselves.

Nasolabial Fold Filler

Nasolabial filler follows the nasolabial fold from the ala of the nose to the oral commissure.

Thin product will displace, while thick product may produce a bulky, static look. Medium density products such as Juvederm Ultra or Juvederm Vollure work well for nasolabial folds. Nasolabial folds can accept a surprising amount of filler to achieve a noticeable effect, and due to the cost of filler, patients should be consented for multiple syringes of filler. Oftentimes, at least 1.0 mL is needed per side, and in elderly patients, the folds can accept 3.0 mL or more. The depth of nasolabial fold filler can be placed dermal or deep, with more severe nasolabial folds often requiring both levels of placement for optimal effect.

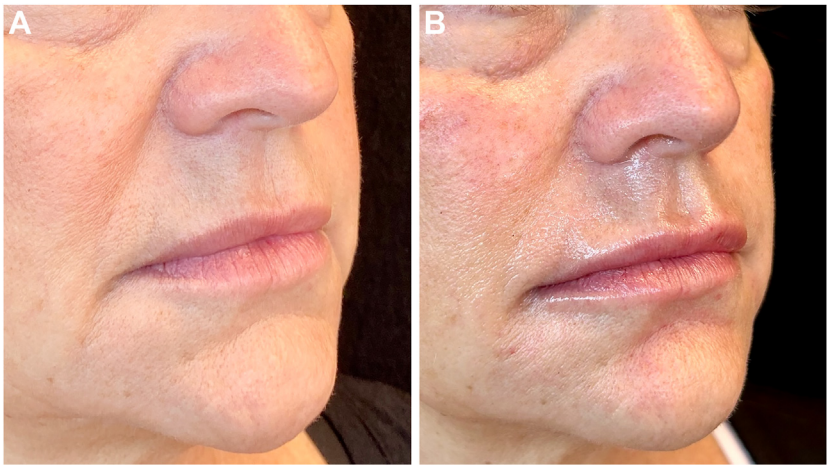

Fig. 14 (*A*) Preop of a patient complaining of poorly defined lips. (*B*) Immediate postop showing how the columella filler can produce a more pronounced philtrum.

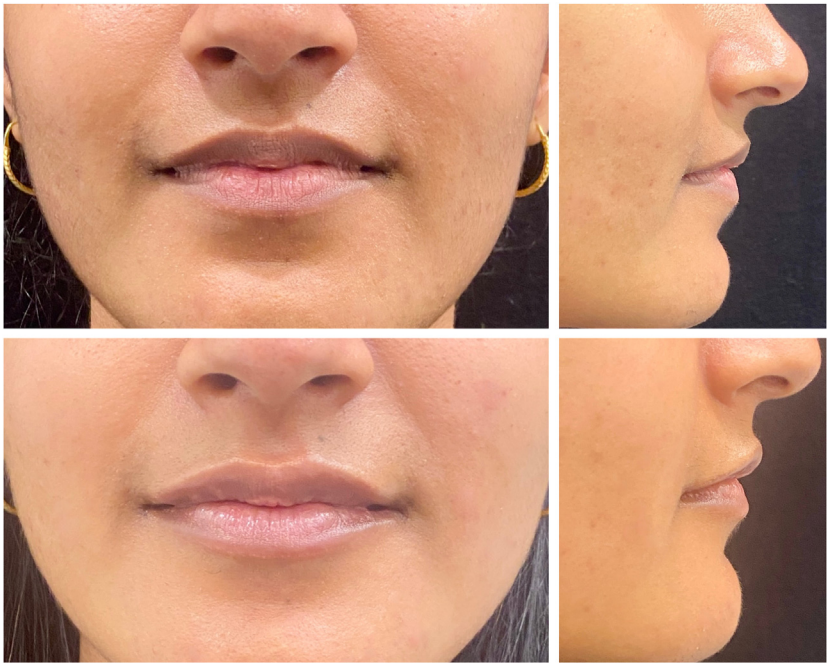

Fig. 15 This young patient received ~0.6 mL of Juvederm Volbella XC spread between the upper and lower lip, giving her a very subtle bump in volume. Any less filler would have likely produced no perceptible difference.

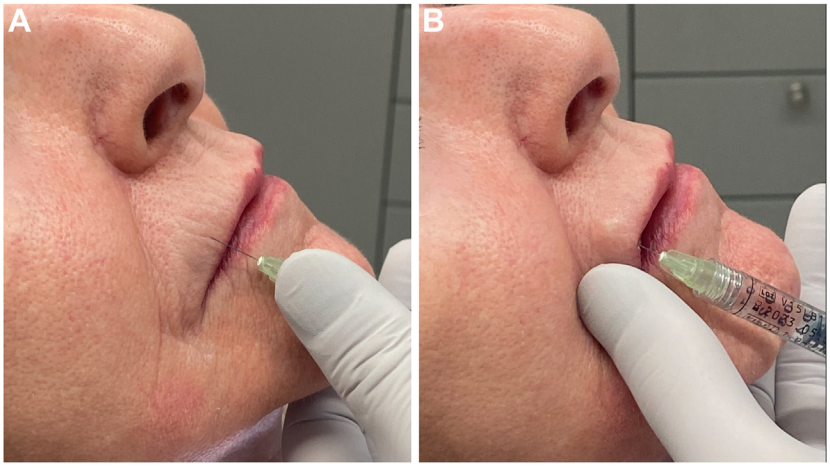

Fig. 16 (*A*) The needle held over the intended path of insertion, (*B*) the needle is inserted, "tented" to test depth, and a small aliquot is placed.

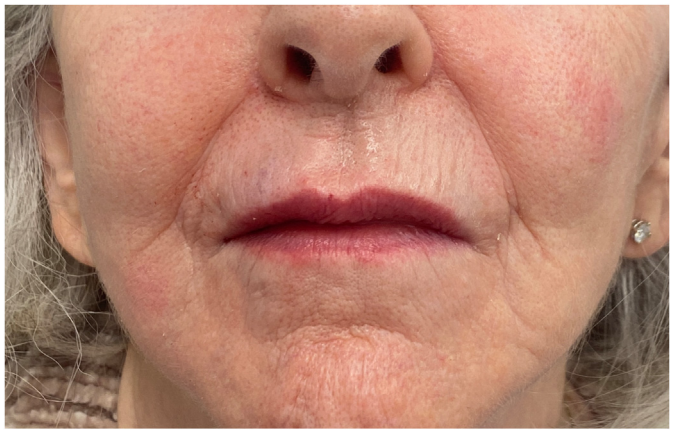

Fig. 17 A 70-year-old patient with filler injected to the right side perioral vertical rhytids before treating the left. Note the softened appearance of the vertical *lines*. As for all perioral filler, edema begins almost immediately.

Pulling of the nasolabial fold from the oral commissure straightens the fold, allowing for straight injection of product (Fig. 19A). Measuring the length of the needle against the skin will demonstrate the entry point for injection to reach the desired location (see Fig. 19B). The needle is advanced, and then the product is injected linearly on withdrawal (see Fig. 19C). Injections are started at the ala of the nose and carried sequentially inferiorly to the oral commissure (see Fig. 19D). Filler is generally injected medial/inferior to the fold (Fig. 20) because lateral/superior injection can accentuate the descending tissue of the cheek. Small threads of filler perpendicular to the fold can also soften the depth of the fold. As with all techniques, the injected filler is massaged smooth (Fig. 21).

Marionette Line Filler

Marionette line filler follows the same principles as nasolabial fold filler—the skin is pulled taught to produce a linear fold, and product is placed sequentially from the oral commissure (Fig. 22). Just as for nasolabial folds, filler can be injected in small lines perpendicular to the fold to soften the final result. When treating marionette lines, filler is commonly fanned at the lateral lip near the oral commissure to soften the depth of deep commissures that can accentuate the marionette line (Fig. 23). The filler is smoothed (Fig. 24), and the patient can be shown the treated side before continuing on the contralateral side (Fig. 25).

Mentolabial Filler

Mentolabial lines are horizontal skin creases inferior to the lower lip. Following similar principles to other perioral fillers, the needle is advanced along the dermal layer and injected on withdrawal, followed by massage (Fig. 26).

Postoperative care

- The injection sites should immediately receive cold to reduce edema and bruising.
- Advise patients to avoid heavy exercise following injections.

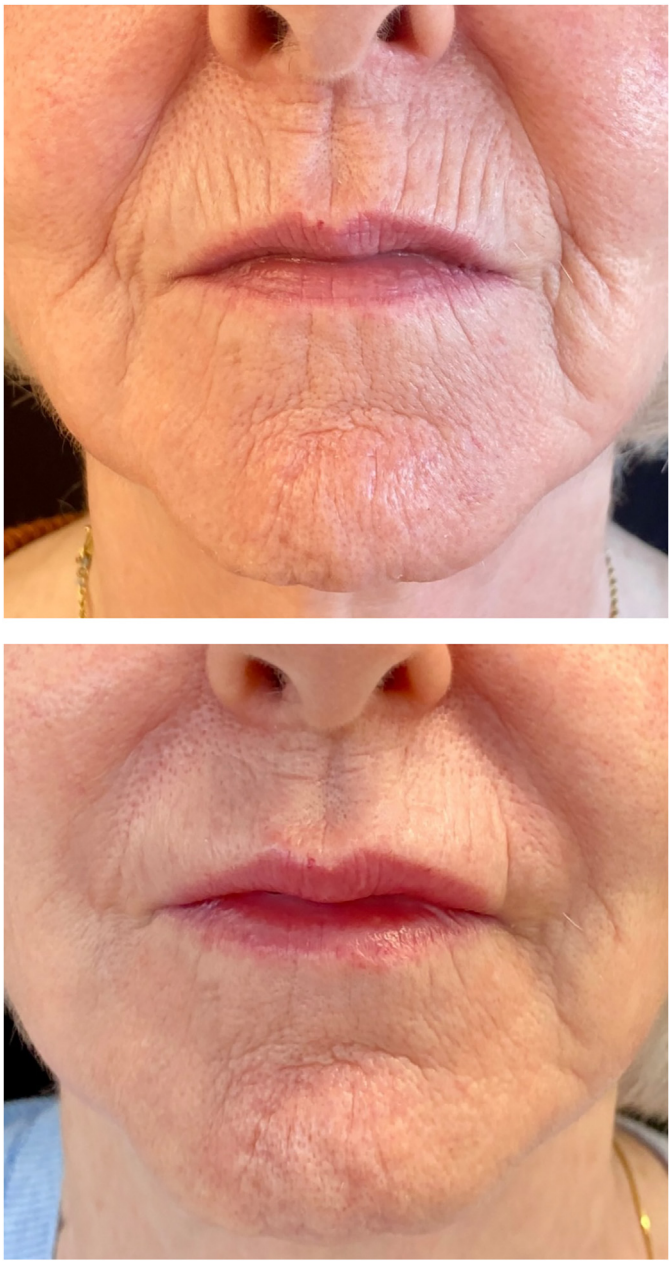

Fig. 18 Before and after photos following multiple visits for treatment of vertical lip rhytids. This patient also received filler to the upper lip to help improve the look of the vertical *lines*.

- Makeup is avoided for 48 hours to prevent irritation at the puncture sites.
- Reassurance is important in the recovery period because patients will have a more volumized look than the final result.

Potential complications

Complications of filler injection are detailed in a later article of this text. However, it is worth noting that the lips are especially prone to swelling and bruising following needle puncture (Fig. 27). Cold, applied immediately before and post-procedure, is the patient's best defense against edema and ecchymosis. Similar to all surgical postop edema, swelling usually peaks in 3 to 5 days before gradually tapering. A tapering steroid dose can

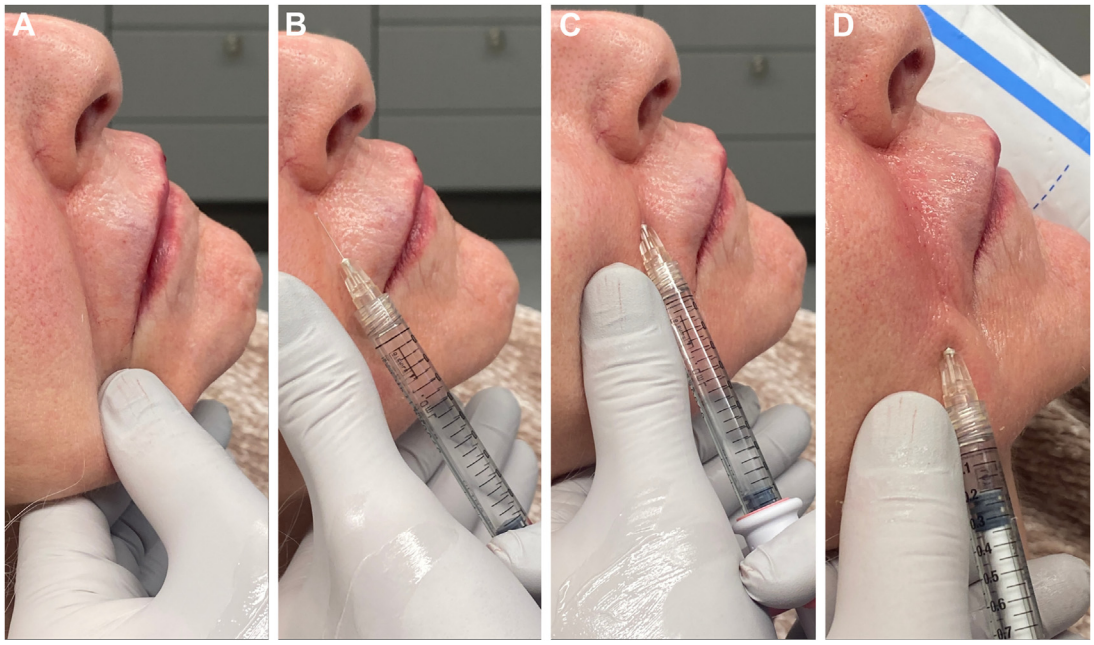

Fig. 19 (*A*) Stretching of the skin to produce a straight nasolabial fold for injection, (*B*) lining up the needle to the intended target area, (*C*) insertion and injection, and (*D*) continuing stepwise inferiorly along the fold.

be considered in certain cases (Fig. 28). Injections to the lip can stimulate eruptions of recurrent herpes simplex virus, so patients with known recurrent herpes can be placed on the appropriate antivirals. As shown in Fig. 29, a combination of HA fillers for perioral augmentation often gives the best result.

Similar to all areas of the face, the local vasculature of the perioral region presents a vascular occlusion risk. Most relevant to perioral injections are the following.

- The lips are supplied by the superior labial and inferior labial arteries branching from the facial artery. Based on cadaveric studies, these arteries are typically found in the posterior/mucosal half of the lip; thus, injections to the lips in the orbicularis oris should be kept in the anterior/skin half.
- The nasolabial fold parallels the course of the facial artery because it travels superiorly from the mandibular border to the lateral nasal region where it becomes the angular artery. Caution is recommended if injecting deep near the ala.

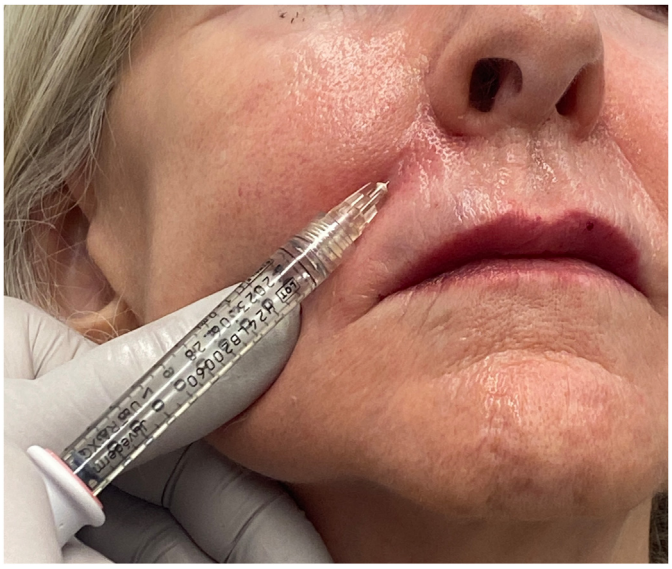

Fig. 20 Injection of the nasolabial fold showing the placement of product slightly inferior to the fold.

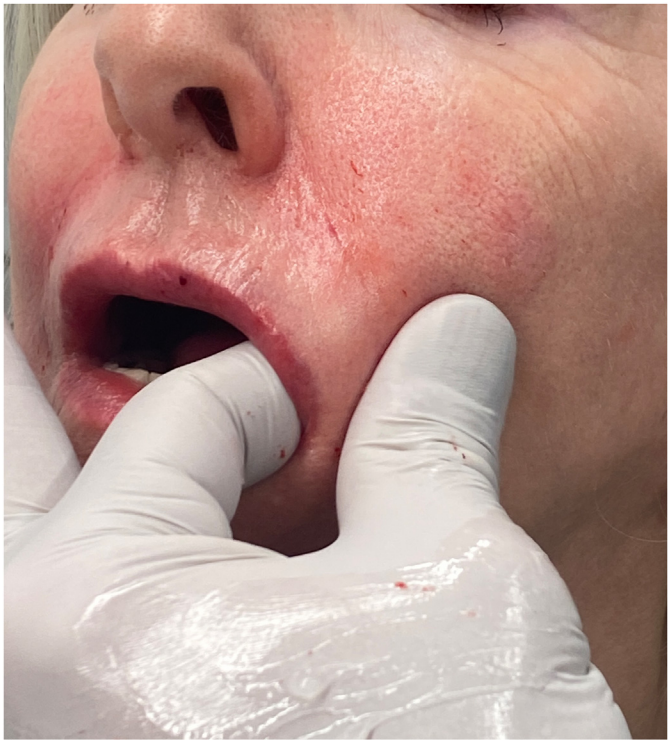

Fig. 21 Massage of the injected filler is completed with an index finger inside the oral cavity and the thumb on the skin. Note the petroleum jelly placed on the glove to be used on the skin during massage.

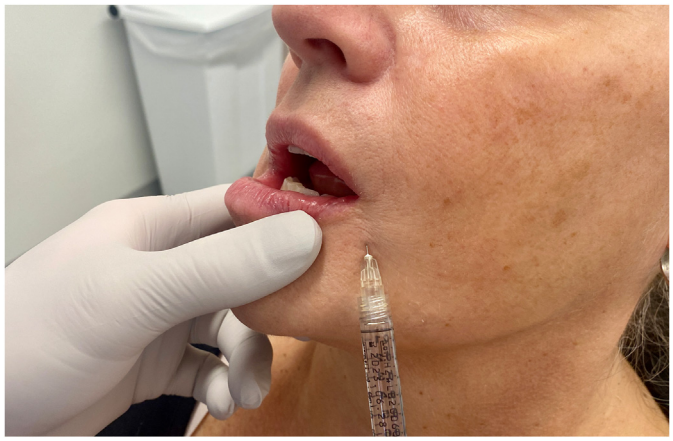

Fig. 22 Injection technique for the marionette *line*, beginning at the oral commissure.

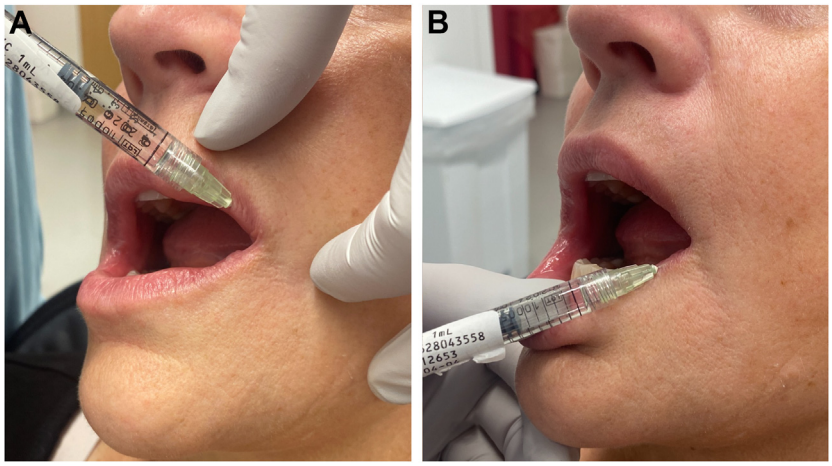

Fig. 23 Fanning injection of filler at the lateral commissure from the upper (*A*) and lower lip (*B*) to soften the marionette line.

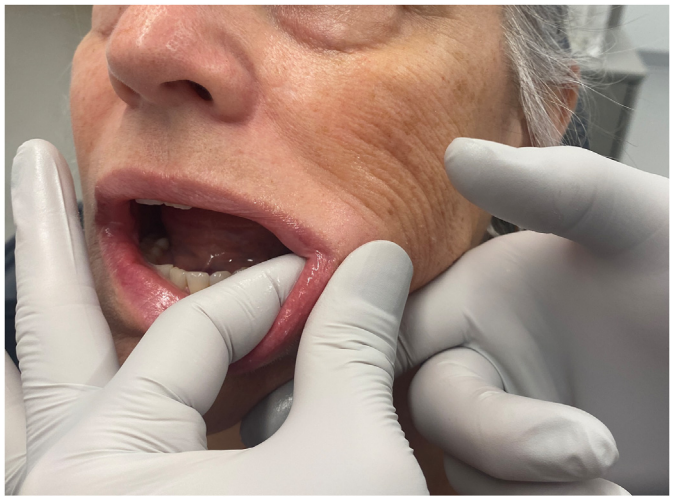

Fig. 24 Massage of the marionette line filler after injection, rolling the product from both the intraoral and extraoral sides.

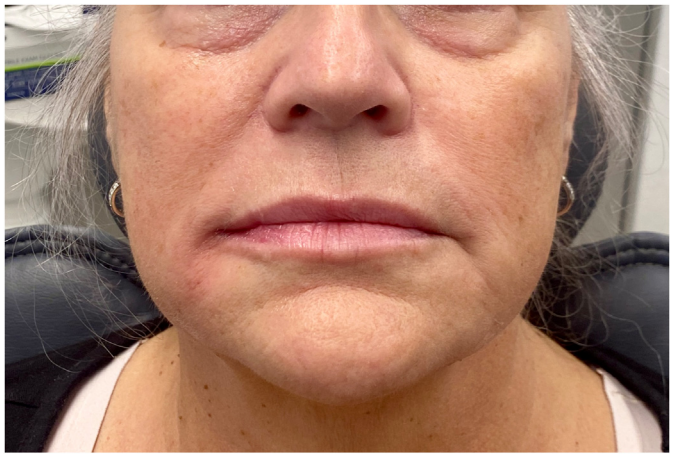

Fig. 25 Intraoperative photo demonstrating a treated right marionette *line* vs an untreated left—note the softened *line* as well as the reduced depth of the oral commissure, reducing the downturned "frowning" look of the patient at rest.

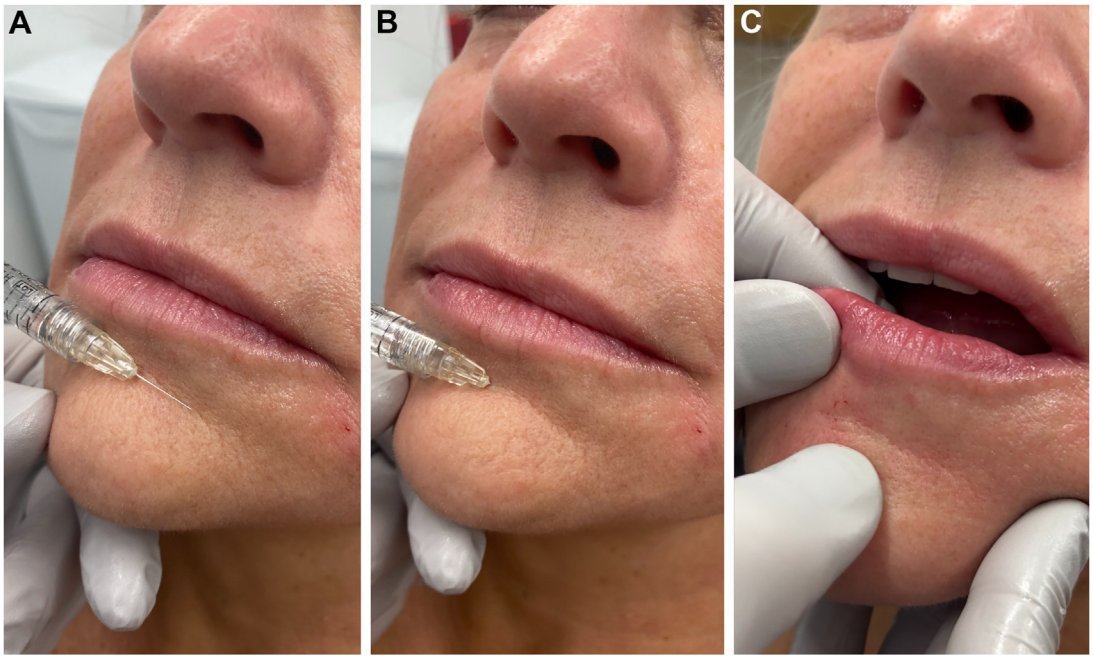

Fig. 26 (*A*) The needle is lined up to the mentolabial fold, (*B*) advanced along the dermal layer and injected on withdrawal, followed by massage (*C*).

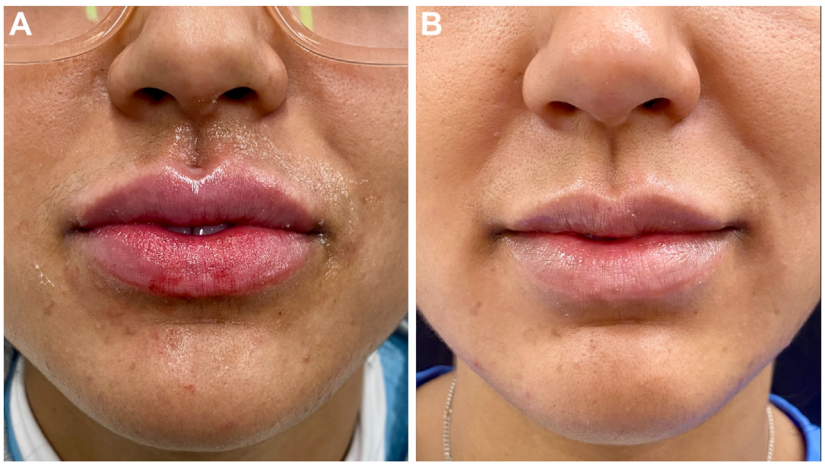

Fig. 27 (*A*) Showing postinjection swelling in a female patient receiving lip filler compared with (*B*) the eventual result after 2 weeks.

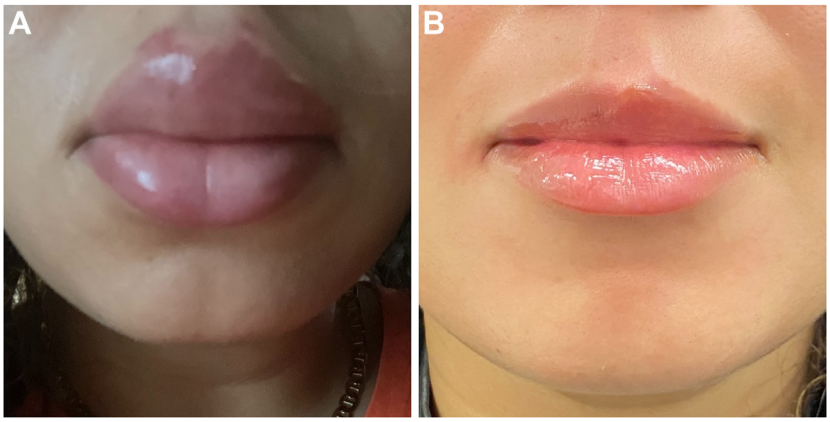

Fig. 28 (*A*) This home photograph on the left was taken by a patient hours after lip filler. (*B*) The patient was started on a tapering steroid dose, which resulted in rapid improvement.

Fig. 29 Results of a combination of HA fillers for perioral augmentation.

Clinics care points

- Many first-time cosmetic patients seek out filler to the lips or nasolabial folds as their first cosmetic procedure; thus, management of expectations is critical for these patients with no previous filler experience!
- Because of the degree of edema from lip injections, postop symmetry does not always result in final symmetry. Patients should be counseled to expect the need for "touch ups."
- Typically, the denser the filler, the deeper it is injected. Perioral regions often require less-dense filler that is injected more superficially into the dermis beneath the line being treated, although for deep folds, layering and perpendicular threading is often required.
- Massaging and molding of the filler into place is at least as important as where the product is injected. Tell patients to avoid massaging on their own at home, which may displace the filler.
- Filler in the perioral region often benefits from injection to multiple regions. Lip filler helps soften vertical lip rhytids, and filling near the commissures can reduce the appearance of marionette lines.

Disclosure

The authors have nothing to disclose.

Further reading

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