One of the most common challenges that cosmetic surgeons face is to provide notable improvement with little or no downtime so that the patient can look better for an upcoming social or professional engagement. Based as I am in the Washington, DC area, this challenge is particularly fresh in my mind in the aftermath of the recent Presidential inauguration and the festivities that surrounded it. When that looming event is the patient’s own wedding—with all eyes on the "blushing bride"—the pressure on both surgeon and patient is exceedingly high. Yet a thoughtful approach to treatment, employing a carefully selected combination of skillfully-performed procedures can achieve the desired results, as described in the case below.

**Wedding Wishes**

A 54-year-old white woman who was an executive for a nonprofit organization presented three weeks before her wedding, complaining of aging around her eyes, mouth, and jaw line. She was a nonsmoker. On examination, she had Fitzpatrick skin type I with facial rhytides at rest.

Evaluation of the periorbital frame revealed moderate loss of volume and skin elasticity, resulting in eyebrow ptosis that was more pronounced on the right side where it was associated with ptosis of the right upper eyelid, under-eye hollowing, and flattening of the superomedial midface. There was moderate rhytidosis of the lower eyelids and the lateral periorbital regions bilaterally and also of the glabella. Surface cutaneous changes within the periorbital frame included hyperpigmentation (most notably on the lower eyelid), fine rhytides, and pore prominence.

Evaluation of the immediate perioral frame showed a severe reduction in skin elasticity and tissue volume. Her upper and lower vermilion lips were symmetrical but moderately decreased in maximal height and projection. There was poor definition of the vermilion borders and moderate atrophy of the Cupid’s bow. Eversion of the vermilion borders was decreased throughout with global loss of the white roll. There was moderate vertical rhytidosis of the cutaneous upper and lower lips and moderate ptosis of the lateral oral commissures. The philtral base was widened with minimal residual definition of the philtral columns. The distance from the philtral base to the columella was increased, and there was a visible labial-mental groove with festooning of the cutaneous lower lip.

Examination of the peripheral perioral frame showed that loss of skin elasticity and volume was more severe in this area—as evinced by superficial and deep rhytidosis and prominent prejowl sulci—than in the nasolabial region, where rhytidosis was less pronounced. Chin projection in this patient was slightly suboptimal for her facial contours.

**Treatment**

At this patient’s request, her treatment was divided into two sessions.

During the first session, a small-particle nonanimal stabilized hyaluronic acid (NASHA) filler (Restylane®, Medicis) was injected within the periorbital frame included hyperpigmentation (most notably on the lower eyelid), fine rhytides, and pore prominence. Evaluation of the immediate perioral frame showed a severe reduction in skin elasticity and tissue volume. Her upper and lower vermilion lips were symmetrical but moderately decreased in maximal height and projection. There was poor definition of the vermilion borders and moderate atrophy of the Cupid’s bow. Eversion of the vermilion borders was decreased throughout with global loss of the white roll. There was moderate vertical rhytidosis of the cutaneous upper and lower lips and moderate ptosis of the lateral oral commissures. The philtral base was widened with minimal residual definition of the philtral columns. The distance from the philtral base to the columella was increased, and there was a visible labial-mental groove with festooning of the cutaneous lower lip.

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**Perfect Timing: Short-Notice Strategies for Combining Hyaluronic Acid and Collagen Fillers**

By creatively combining new and established fillers, cosmetic surgeons can optimize results and minimize downtime… even at short notice.

**Volume restoration to the lower eyelids was achieved during the first session with deep and mid-level Restylane injections, as previously described.** The goal of this two-layer approach is to fill, elevate, and tighten the lower eyelids. Restylane was injected via two injection points supraperiosteally just within the orbital rim with a 30G needle using anterograde linear threading, followed by point massage. Anterograde injection technique allows the injected filler to flow ahead of the needle, providing precise volumization with minimal tis-
sue trauma. Restylane was then injected into the mid-to-deep dermis through a 32G needle via two injection sites on each lower eyelid, with medial and lateral fanning and post-injection massage. Fanning was performed by injecting with the linear threading technique while moving the needle to change its orientation within the skin during injection. This technique evenly fills and elevates loose skin within the orbital rim. However, great care must be exercised to avoid injury to the globe or undue tissue trauma. A slow injection rate and absolute control of needle position and depth are prerequisites for this advanced technique. Injection is stopped before withdrawing the needle to avoid placement of the NASHA too superficially, since this could result in blue discoloration due to the Tyndall effect.

Restylane was injected into this patient’s lateral brow arches using serial puncture technique. 0.2cc of Restylane was injected on each side over the periosteum just below the hairline at the outer third of the eyebrows, using a 30G needle followed by medial-to-lateral massage post-injection. This lifts the eyebrows subtly and restores youthful fullness below the eyebrow arch, to enhance the results of brow shaping with botulinum toxin A. Restylane was also injected into the deep dermis and subcutis of the supramedial midface through a 30G needle with anterograde serial puncture. It is helpful to periodically view the patient obliquely and from below when injecting the midface in order to avoid undercorrection or a shelf between the
cheek and lower eyelid due to overcorrection. In total, 2cc of Restylane were injected for volume replacement to this patient’s periorbital frame.

The patient was treated using a stock solution of 100 units of Botox diluted with 2.5cc of preserved normal saline. Using a 32-G needle to minimize tissue trauma, 18 units Botox was injected on each side into the orbicularis muscle lateral to and just over the orbital rim. The eyebrows were lifted with 4 units Botox administered on the right side and 2 units Botox on the left side subdermally into the orbicularis just lateral to the eyebrow tail on each side, along with 5 units Botox injected into the preprocerus region. To bring down the lower eyelid rims by a fraction of a millimeter and give the patient a wide-eyed look, 2 units Botox were injected subcutaneous-ly into the pre-tarsal orbicularis just below the ciliary margin in the mid-pupillary line on each side.7 Botox was also injected into the frontal region, with less Botox higher over the midbrow and more Botox lower over the medial and lateral brow, to arch the eyebrows. Botox was also injected into the neck for improvement of horizontal banding.

During the second treatment session, two weeks later, the patient expressed interest in treatment with a porcine collagen-derived dermal filler (Evolence®, OrthoNeutrogena).

In the immediate periorial frame, a large-particle NASHA filler (Perlane) was injected into the vermilion zones of the upper and lower lips and into the cutaneous lower lip using serial anterograde vertical puncture through a 27G needle. The porcine collagen-derived filler (Evolence) was injected by retrograde serial threading through a 27G needle into the mid-to-deep dermis at the mouth angles and into the labiomental groove, followed by external cutaneous and intraoral massage. In the peripheral periorial frame, Evolence was injected in the same manner into the nasolabial folds and into accessory rhytides on the lower face and midface. Perlane was injected supraperiosteally into the prejowl sulci through a 27G needle using serial threading technique followed by gentle massage. Perlane was also injected into the preauricular region through a 27G needle via serial anterograde puncture followed by massage. A total of 2cc of Perlane and 2cc of Evolence were injected.

To achieve lip effacement and improvement in the vertical periorial rhytides, this patient received treatment on the same day with a total of 7 units of Botox to the orbicularis oris at seven sites on the cutaneous upper and lower lips. One unit was injected into the posterior aspect of the depressor anguli oris and 1.5 units were injected laterally and inferiorly to this point on each side to elevate the mouth angles and lift the jawline. Two units were injected into the mentalis at two sites on the chin to improve chin dimpling (Figures 2 and 3).

At follow-up after her wedding, the patient stated that she was very satisfied with her results and that she had received many compliments on her wedding day.

Discussion

When restoring volume to the face with fillers, I find it helpful to mentally divide the face into a periorbital frame and immediate and peripheral perioral frames (Figure 4). This strategy permits accurate assessment of volume loss in the upper and lower face and helps to prevent underestimation of the amount of filler required for adequate volume restoration. I consider the superior midface to be part of the periorbital frame in all but the youngest patients who have not yet developed central facial volume loss. Although volume restoration to the midface requires extra filler, I find that patients are very receptive to this once I explain to them the aesthetic value of perfecting their facial contours. Injection of fillers into the immediate periorial frame, including the cutaneous upper and lower lips and mouth angles, accomplishes local lifting of the mouth. Filling of the peripheral periorial frame, extending to the preauricular hairline, provides more global lifting of the perioral region and lower face, including the oral commissures.

This patient’s treatment plan illustrates how NASHA and collagen fillers can be combined for effective volume restoration with minimal tissue trauma. Restylane, a hydrophilic small-particle NASHA, was used to lift and restore volume to the periorbital frame. Evolence, a nonhydrophilic, crosslinked porcine collagen-derived filler with minimal lifting effect, was used to fill rhytides and folds in the perioral frames. Perlane, a hydrophilic large-particle NASHA, was added to correct lip asymmetry, add lip fullness, and lift the lower face.

Fillers were not injected into the vermilion borders, the philtral columns, or
the cutaneous upper and lower lips prior to this patient’s wedding because these areas have a propensity for temporary swelling and bruising in some patients. Some degree of lip effacement was achieved through botulinum toxin A treatment. The patient had minimal pinpoint bruising and swelling after treatment during the first session with Restylane and Botox. She had no visible bruising and no swelling after treatment during the second session with Perlane, Evolence, and Botox; I find that this is usually the case when I combine these treatments. After the patient’s wedding, further aesthetic improvement was achieved through the injection of Restylane into her vermilion borders, her philtral columns, and her cutaneous upper and lower lips.

Adjunctive botulinum toxin A (Botox) therapy was indicated for this patient because she had rhytides with a hyperdynamic component. She was also treated with particle-free microdermabrasion with skin epi-infusion to improve skin texture and luster, with no downtime, immediately before her wedding. Cosmetic tattooing (permanent makeup) might also be helpful in further defining her vermilion borders and also in enhancing lip color.

Conclusion

Volume replacement to the periorbital and perioral regions must be performed with a high degree of precision, the challenge being to avoid suboptimal results through undercorrection or over-correction of volume loss, or through filler misplacement. Division of the periorbital and perioral regions into frames during pretreatment assessment facilitates an integrative approach to volume restoration and greatly increases the likelihood that the clinician can meet patient expectations.

Restylane and Perlane are particulate NASHA fillers that can be injected with a variety of injection techniques and depths to achieve optimal volume correction and significant lifting of the upper and lower face, with good contour stability and longevity of results. Interim results from a recent randomized, evaluator-blinded, multicenter study of 75 patients showed that effective correction of nasolabial folds with Restylane persisted for up to 18 months after initial treatment followed by retreatment at 4.5 or nine months.1 NASHA fillers such as Restylane, Perlane, and Juvederm® (Allergan) also possess the advantage of being correctable, even if misplaced, through the injection of hyaluronidase to enzymatically digest undesired filler or through simple extrusion of filler that has been placed too superficially.2

When Evolence, a crosslinked porcine collagen-derived filler, is selected for volume replacement to the face, I recommend the adjunctive use of NASHA fillers for two reasons. First, the manufacturer’s product information advises caution when injecting Evolence at the vermilion borders, and persistent collagenase-resistant nodules have been reported in some patients after injection of Evolence into the lips.4 Therefore, I do not inject Evolence into the vermilion borders or the lips. The product information also specifies that Evolence should be injected into the mid-to-deep dermis; thus I do not inject it into the periorbital region, where dermal thinness makes it challenging, if not impossible, to achieve consistent filler placement in a specific dermal zone. Contour irregularities may arise if filler is placed too superficially. As a general rule, the lips and periorbital regions should be included in facial volume restoration in order to achieve optimal results. Another filler must therefore be selected for volume restoration to these areas, and I consider particulate NASHA fillers to be ideal for this purpose.

The second rationale for adding a NASHA filler when using a crosslinked porcine collagen-derived filler is that patients who require facial volume replacement invariably also require facial lifting. While Evolence can be employed to fill rhytides, it provides little or no facial lifting. Lifting can be achieved through the addition of Perlane and Restylane, which can be implanted where appropriate at the junction of the dermis and subcutis, subcutaneously or supraperiosteally. It is interesting that neocollagenesis has been reported in separate studies following the injection of particulate NASHA (Restylane)5 or crosslinked porcine collagen-derived (Evolence)6 fillers into human skin. As such, I do not view particulate NASHAs and crosslinked porcine collagen-derived fillers as competitor products but rather as two distinct genres of filler with different properties and the potential for synergistic clinical effects.

Dr. Hema Sundaram has served as an Advisor, Clinical Investigator, Consultant, Speaker and/or Trainer for Allergan, Inc., ColBar LifeScience Ltd., and Medicis Pharmaceutical Corp. She has no stocks, shares, or other financial interests in these or in any other pharmaceutical or aesthetic device companies.