

Lower Face Rejuvenation with Injections: Botox, Juvederm, and Kybella for Marionette Lines and Jowls

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Summary: A 55-year-old woman requesting noninvasive rejuvenation of the lower face received multimodal injections in a single office visit to rejuvenate the jowls. The patient experienced no adverse events other than self-limiting bruising at the hyaluronic acid injection site and minimal edema. The outcomes were evaluated as follows: (1) by the patient using the self-rated Face-Q assessment and (2) by 5 plastic surgeons (none of whom were the author of this study) based on the WAS scale and before and after photographs to evaluate the corners of the mouth and the marionette lines. This case study report suggests that the combined use of neuromodulator, hyaluronic acid dermal filler, and synthetic deoxycholic acid can rejuvenate the lower face as a minimally invasive alternative to surgery to the satisfaction of the patient and 6 plastic surgeons (including the author). (*Plast Reconstr Surg Glob Open* 2017;5:e1551; doi:10.1097/GOX.0000000000001551; Published online 9 November 2017.)

CASE REPORT

The facial rejuvenation paradigm has shifted away from treating 2D hyperdynamic facial lines to a 3D approach with multiple modalities.¹ Botulinum toxin has been used off-label for relaxation of the depressor anguli oris (DAO) muscle, uplifting the lateral oral commissures and mitigating the rhytids created by frowning.² Botulinum toxin treatment of the DAO potentiates soft-tissue filling of the marionette lines by softening the contortional effect of the DAO.³ Injectable deoxycholic acid (Kybella) has been used safely and effectively for submental fat reduction.⁴ Treatment of the lower cheek-jowl fat is an off-label treatment. HA (Juvederm Ultra) has been used since 2003 for filling facial lines and is found naturally in skin, connective, epithelial, and neural tissues.⁵ HA provides volume by absorbing water.

A patient received multimodal injections in a single office visit to rejuvenate the jowls with the sequence (1) botulinum toxin, (2) hyaluronic acid, and (3) deoxycholic acid.

The DAO muscle was injected with 2 units of Botox midway between the commissure and the mandible. The injection was kept 1 cm lateral to a plumb line from the lateral commissure to avoid the depressor labii muscle as

well as above the margin of the mandible to avoid the marginal mandibular nerve. Injection too medial could weaken the depressor labii and injection too high the risorius, both leading to asymmetric smile.¹ The lateral platysma also contributes to the frown and may compensate after blocking the DAO.²

The marionette line spanning from the lateral commissure to the mandibular rim was injected with hyaluronic acid into the mid-deep dermis with a 30-gauge needle to fill lines and restore volume thereby camouflaging the jowls.

The subcutaneous-fat-rich jowl area was injected within a right triangle with the 3 vertices, 1 cm lateral to the oral commissure, 1 cm above the mandibular border, and 1 cm anterior to the masseter border. During injection, the 0.5 in. 30-gauge needle was inserted perpendicularly and 0.1 cc was injected subcutaneously 1 cm apart.

The patient experienced no adverse events other than bruising at the injection site and minimal edema, expected temporary side effects of HA and Kybella.

The patient completed the Face-Q Satisfaction with Facial Appearance⁶ assessment at 3 months. Overall scores based on the 10 facial questions show she rated her facial appearance at 44% before and 84.5% after multimodal injections. This significant improvement is illustrated in before and 3 months after photographs (Figs. 1, 2). Qualitatively, this patient wrote "I am very happy."

Independent evaluations by 5 plastic surgeons used before and after photographs and the standardized WAS assessment (0 = no wrinkles; 5 = very deep wrinkle, redun-

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Fig. 1. Fifty-five-year old woman before and 3 months after bilateral injection of 2 units of Botox to each DAO, 1 syringe of Juvederm Ultra to each marionette line, and 0.4 cc of Kybella to each jowl. She also had Volbella 0.55 ml injected to each tear trough.



Fig. 2. Oblique view of 55-year-old woman before and 3 months after bilateral injection of 2 units of Botox to each DAO, 1 syringe of Juvederm Ultra to each marionette line, and 0.4 cc of Kybella to each jowl. She also had Volbella 0.55 ml injected to each tear trough.

dant fold).⁷ The result patterns mirrored those of the patient; overall improvement averaged 2 points (range, 1–3). Qualitatively, their comments were unanimously positive, for example, “to me the result is notable: excellent correction of the marionette lines” and “Great result considering no surgery.”

DISCUSSION

Aesthetic patients received over 10 million injectable procedures in 2016,⁸ which underscores the popularity and acceptance of injections. Botulinum toxin and hyaluronic acid injections have been the top 2 nonsurgical procedures for the past 8 years. Expectations should be set for repeated

injections leading to a cumulative effect or maintenance. Injections foster a long-term patient relationship and opportunities to offer adjunct noninvasive procedures such as photo-rejuvenation or energy-based skin tightening. The patient had a Volbella injection in the tear trough, which may have influenced her satisfaction with her overall facial appearance; however, the assessment by plastic surgeons focused only on the corner of the mouth and marionette line and improved 2 points on WAS. Injection of the upper face at the same time as the lower face is mutually beneficial.

Patients need to be educated to expect bruising, swelling, and pain. Patients should be fully informed about the possibility of issues with the facial nerve end branches, marginal mandibular and possibly buccal. Adverse events of submental injection of Kybella include marginal mandibular nerve paresis, which was 4.3% of 250 patients injected and the symptoms were mild, temporary, and resolved without intervention. The patient should be asked to smile to identify asymmetry before injection of Kybella.⁹ Ideally, patients should have thick lower face skin and excess subcutaneous fat otherwise injection of Kybella could result in more rhytids of the lower face, which would be an undesirable outcome. More than 1 injection spaced at least 1 month apart may be necessary for the desired effect.

For successful rejuvenation of the lower face, a direct injection approach is arguably more effective than the distant lateral plication of facelift, which is likely to be relaxed by movement such as expression, speech, and eating. Repetition of a surgery such as facelift is a major undertaking financially, emotionally, and physically and revisionary procedures can be construed as a failure of the operation. Whereas botulinum toxin and hyaluronic acid are expected to be repeated procedures for maintenance and fine-tuning.

CONCLUSIONS

This innovative case report suggests combined injection of neuromodulator, HA dermal filler, and deoxycholic acid can rejuvenate the lower face with patient

satisfaction and professional assessment of improvement. However, formal, multicenter study is needed to make any recommendations about best practices and patient safety. As always, practitioners should proceed with caution in off-label uses and in combination therapies.

PATIENT CONSENT

The patient provided written consent for the use of her image.

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