Accurate and Anatomic Midface Filler Injection by Using Cheek Implants as an Injection Template

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Joseph Niamtu, III, DMD, has indicated no significant interest with commercial supporters.

Contemporary cosmetic surgeons appreciate the concept of volume restoration in the rejuvenation of the aging face. Injectable fillers and fat have become a mainstay of reproducing youthful facial contours.[1–5]

Aging changes in the midface include volume loss from hard and soft tissue changes as well as the descent of the SOOF (superficial orbicularis oculi fat) and malar fat complex.[6,7] These changes produce midfacial hollowing and a gaunt appearance. Other exogenous factors such as medication induced lipoatrophy can mimic the atrophic changes of the aging face.[8,9] Rejuvenation of the midfacial region includes lifting procedures, skin-tightening procedures, implant placement, and injectable fillers.

Facial filler and or fat injection in the midface has many advantages for the doctor and patient including ease of placement, avoidance of surgery, adjustability, and the ability to individualize and custom contour for each patient. One problem that can exist with midfacial filler augmentation is the decision where to exactly place the filler or how much filler to place. Freehand estimation and injection can produce asymmetry or inconsistent filling and it is advantageous to have a template to better define the areas of desired and intended filling. Midfacial implants have undergone many advancements over the past 20 years including the availability of anatomically diverse shapes and sizes. These anatomic implants were designed to imitate youthful volumetric facial contours. The available selection of implants include those that are intended to augment the submalar area, the malar area, or a combination of both. These implants are anatomic in three-dimensional form and are designed to fill atrophic spaces in the midface. The size and shape of the implants can be used for templates on the face to define boundaries and approximate volume for filler or fat injection.

Actual silicone implants or implant sizers (silicone implant analogues intended for try on but not for implantation) can be used to trace the desired area of intended filler injection on the midfacial skin. Implantech (Ventura, CA) manufactures an array of midface implants in multiple shapes and sizes. The submalar implant series is intended to provide augmentation of the atrophic inframalar areas (below the cheek bones and above the lip; Figure 1A). The malar shell implants are intended to provide augmentation more laterally by augmenting the lateral malar and zygomatic areas (Figure 1B). A combination implant is available that augments both of these areas simultaneously (Figure 1C).

The patient is given a mirror and the injector and the patient decides on the desired areas of augmentation. The patient "tries on" the various implant shapes to assist in the treatment area selection. Once decided, the implant is held in place and traced with a surgical skin marker (Figure 1A).

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Figure 1. (A) The submalar implant configuration that augments the inframalar area. (B) The malar shell type implant that is designed to augment the lateral malar area. (C) The combination implant configuration that is designed to augment both the submalar and lateral malar regions.

The resultant outline serves as a template for the injector to assist in the decision process of where to put the filler and how much to inject (Figure 2). The implant shapes are three-dimensional and feathered on the edges, and their approximate configuration can serve as an estimation of the filler volume required and where to bulk it up or thin it out.

The injection can usually be performed with topical anesthesia or minor nerve-blocking techniques if significant volume of deeper injection is required.[10] Mimicking the size and shape of the specific implant configuration has assisted the author in midfacial rejuvenation with injectable fillers and fat (Figure 2). Figure 3 shows a patient immediately after injecting the right side with the left side untreated to show the augmentation. The augmentation within the template markings on the patient's right side shows significant and well-formed filling. This picture is shown not as a final treatment result as some swelling may be present,

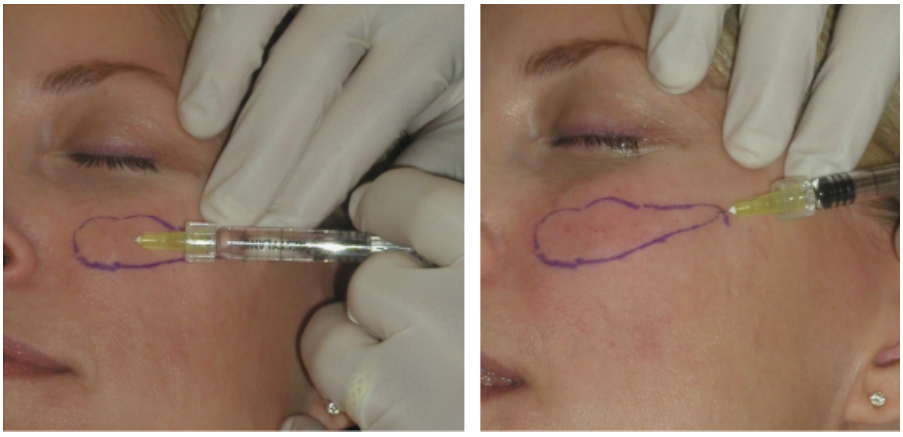

Figure 2. Once the surgeon and patient decide on an acceptable configuration, the implant is traced and the filler is anatomically injected within the tracing confines.

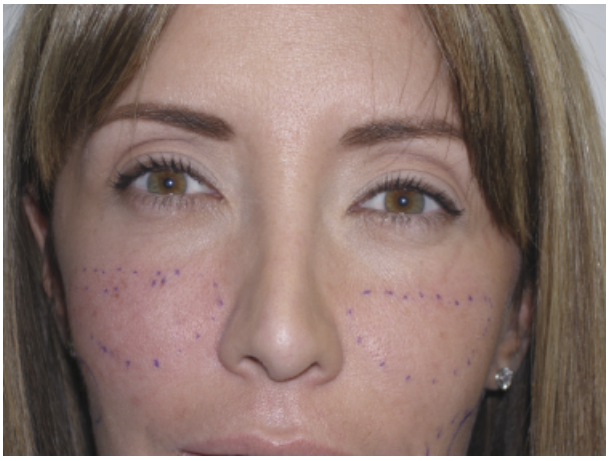

Figure 3. This patient is shown after injection of her right side only to illustrate the aesthetic filling of the right midface versus the untreated left side.

but rather to appreciate the treated versus untreated side.

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COMMENTARY

The author presents a novel concept to aid injectable midface contouring. Pretreatment freehand marking of cheek hollows with a surgical marker may give a more tailored approach to a patient's specific need. In certain cases, however, using a cheek implant as an injection template may better assist physicians and patients in visualizing a possible outcome. Hyaluronic acids, calcium hydroxylapetite, poly-L-lactic acid, and liquid silicone are the most commonly used fillers for cheek contouring and should all be injected into the immediate subdermal plane or deeper for an optimal cosmetic result in this location. Injecting more superficially may create dermal contour irregularities.

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