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Commentary

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# Commentary on: Volumizing Viaducts of the Midface: Defining the Beut Techniques

Joel E. Pessa, MD, FACS

The authors of the manuscript "Volumizing Viaducts of the Midface: Defining the Beut Techniques" reveal their mastery of fat compartments and anatomical spaces by providing a comprehensive approach to midface rejuvenation.[1] The discussion will focus on the ports, techniques, and concepts inherent in the authors' approach to facial augmentation.

The authors' technique is a noteworthy departure from earlier attempts at midface rejuvenation that relied on en bloc repositioning of soft tissue. Rather than visualizing the midface as "malar fat," the authors view the midface as a set of independent compartments and spaces, each of which contributes to overall morphology. Their use of ports or viaducts is a direct extension of this concept. Three ports enable access to the compartments and spaces that may require augmentation.

This approach to facial rejuvenation by augmentation specifically addresses shape, support, and structure prior to augmentation of folds and creases. The authors suggest this approach improves the final dynamic result. In addition, augmentation of key regions as a preliminary step may decrease the volume required to improve some creases. The example of deep cheek fat augmentation and the nasolabial crease supports an approach directed primarily at support and secondarily at creases and wrinkles.

This approach may also help to limit one of the most common unsolved problems in facial augmentation: prolonged refractory edema. If one dissects either the nasolabial crease or the vermillion white roll carefully under high power magnification, large lymphatic vessels will be noted to travel parallel within these structures. This is in keeping with the concept that creases do not occur sporadically nor in an arbitrary manner, but rather form over subsurface structures, including lymphatic vessels. Malar edema after injection of the nasojugal crease is well recognized: large lymphatic vessels travel in the boundary between the infra-orbital fat and malar fat compartments. Less well recognized is prolonged edema after injection of the nasolabial crease and white roll, easily distinguished by blunting of the cutaneous-vermilion lip and philtral columns. Any approach that decreases the volume of filler required to address creases probably also decreases the incidence of this potential complication.

The first port described is the medial midface viaduct, located 1.5 cm inferior and lateral to the alar base in the nasolabial crease. The goal of volumization through this port is to increase anterior cheek projection and to efface the tear trough by augmentation of deep medial cheek fat, medial superficial fat, pre-zygomatic and medial pre-maxillary spaces, and the superior nasolabial compartment. All of these provide a sound approach to achieve the stated goals.

However, two suggestions may be helpful when addressing the medial midface by this approach. First, it is extremely important to state the disclaimer that there is no good evidence that any fat compartment ages differently from another. At this time all suggestions are based on clinical interpretation: these clinical impressions may prove to be correct or incorrect with time. However, it is fairly certain that the summation of changes in fat compartments and spaces (and skin and muscle) leads to apparent medialization of adipose tissue in the aging midface. This observation has a direct effect on clinical practice.

Aging results in a more pronounced nasolabial fold and diminished cheek projection. Another way to state this observation is to say the medial cheek becomes more prominent, and the middle cheek less prominent, with age. Probably all of the fat compartments are losing volume over time but, for whatever reason, there appears to be an increased volume in

Dr Pessa is a plastic surgeon in private practice in Abilene, TX.

**Corresponding Author:**
Dr Joel E. Pessa, 1442 Tanglewood Rd, Abilene, TX 79605, USA.
E-mail: jepessa@gmail.com

the medial cheek compartments (nasolabial fat and superficial medial fat).

Any volume injected into these medial compartments thus tends to increase the apparent medicalization of adipose tissue noted in the aging midface. For example, Ingallina has suggested preferentially augmenting the lateral portion of the deep cheek fat (Dr FM Ingallina, personal communication, January 2014). The deep cheek fat has at least two parts: a medial and lateral component. Lateral deep cheek fat augmentation increases cheek projection, diminishes the apparent jowl, and over time avoids contributing to the increased prominence of the nasolabial fold. Per Ingallina's recommendation, we advise avoiding the technique of deep medial cheek fat augmentation.

The second suggestion regards the possible augmentation of anatomical spaces. The buccal space was first described by Juvara in 1895.[2] Since then, other spaces have been described, particularly in the head and neck, as they contribute to the spread of soft tissue infections. Mendelson and Wong have added to this body of knowledge with a description of additional spaces in the face as they apply to safe planes during rhytidectomy.[3] However, it is uncertain at the present time how anatomical spaces change with age, and any attempt at increasing their volume should be approached with caution.

The authors point out that a potential complication of attempts to augment deep cheek fat is increased jowling. This complication most likely occurs when the buccal space, located immediately lateral to deep lateral cheek fat, is inadvertently entered. The observation that an increased volume of buccal fat noted during infancy is associated with a greater degree of jowling supports this conclusion. Other anatomical spaces may behave in a similar fashion, and I suggest that the augmentation of any anatomical space should be performed cautiously and while constantly evaluating the effect.

The second port described is a middle midfacial viaduct that provides access for blending the lid-cheek junction. The technique entails port placement within the nasojugal groove or crease. Augmentation of the middle superficial fat, medial suborbicularis oculi fat (SOOF), and the orbital space is performed. In our hands, medial SOOF and middle superficial fat augmentation has proven beneficial. As the authors point out, injections into deep fat, such as SOOF, can safely be performed in a relatively linear fashion. More superficial injections, due to the lack of overlying soft tissue, require more passes to safely disguise and blend the volume of injected filler material. One suggestion is that augmentation of deep fat near the lower lid, such as SOOF, should be performed prior to superficial injection due to the increased safety and diminished chance of particulate breakdowns and subsequent light refraction problems (Tyndall effect).

The caveat regarding judicious volume augmentation of spaces also applies to injection of filler into the orbital space. The authors describe injection between the orbital septum and orbicularis-retaining ligament. One of the postulated mechanisms of increased intraorbital fat prominence with aging is that the volume of the orbital space increases. Caution is warranted when attempting to augment this and other spaces.

The third midfacial augmentation port described is the lateral midfacial viaduct, with access 1.5 cm inferolaterally to the lateral canthus. The targets for augmentation through this port include lateral SOOF, the lateral pre-zygomatic space, infraorbital fat, and the submalar space.

The authors state two goals for augmentation through this port: increased lateral cheek projection and effacement of the v-deformity. Augmentation of the lateral pre-zygomatic space is suggested to increase lateral cheek projection. This region may be one of the most complex and least understood regions of facial anatomy. There are two, and perhaps more, components to deep lateral fat. Accurate filler placement within the deep lateral fat is the key to improving cheek projection. One tip is to inject not on the bone of the maxilla, but rather 1 to 2 cm above (superficial) the bone, because the deep lateral fat is not in contact with the maxilla, periosteum, or pre-periosteal fat. This requires that the clinician analyze the result in real time while injecting. More basic research is needed to define the role of pre-zygomatic space and deep lateral fat augmentation.

The authors complete his algorithmic approach to midface voluminization by advocating superficial injection to improve creases and lines. The authors' sequence of injection, providing support and structure first, limits and decreases the requirement for superficial injection of creases. The complications associated with crease injection—prolonged and refractory edema—are likely to be decreased.

This article provides one of the first algorithms for midface augmentation. Whether one agrees or disagrees with any of the particular techniques is of less importance than the authors' approach, which treats the midface as a set of interlocking pieces, each of which contributes to overall morphology. This is perhaps the article's most important contribution to the existing body of knowledge. A number of interesting questions arise, and certainly suggest additional basic research to further define the how the anatomy of compartments and spaces contribute to shape in the aging face.

## Disclosures

The author declares no potential conflicts of interest with respect to the research, authorship, and publication of this article.

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