

The Story of Lips: Tissue Augmentation 2007

Arnold William Klein, MD

The current plethora of available filling materials can be overwhelming to the patient and physician. Although none of the currently available implants is perfect, it is important for physicians to remember that choosing the proper filler is only the beginning of the task. Proper injection technique is also crucial to achieving aesthetically pleasing results.

One reason for the increased interest in filling agents is the US Food and Drug Administration (FDA) approval of botulinum toxin type A for improvement of the glabellar frown. Indeed, botulinum toxin type A is one of the greatest advances in the minimally invasive treatment of the aging face to come along in the past 15 years.¹

Soon after its approval, botulinum toxin type A awakened the search for agents that work equally well in the lower face. When botulinum toxin type A is used in the upper face in conjunction with fillers in the lower face, remarkable results can be obtained. Indeed, the physician is able to produce a more youthful and rested appearance without surgery. Although the introduction of many new implantable materials has also led to their increased use, many have been more hope than help. And, unfortunately, several have been formulas for disaster. This quest for a more natural and rested (ie, youthful) look has become one of the central themes of soft tissue augmentation. Faces should be restored in the 3-dimensional fuller manner rather than the surgically pulled, flat, 2-dimensional look that is produced by an aggressive and overly tight face-lift.

In 2007, filling agents are about subtle lip enhancement, which is, in fact, the number one indication for injectable fillers.² The lips are the aesthetic focus of the lower face and are one of the most prominent female facial landmarks that attract males.³ Additionally, affordable outpatient surgery has replaced much of the expensive hospital-based surgery, and the less invasive techniques

provide a whole new repertoire of therapeutic options. Courses in cosmetic surgery techniques are becoming increasingly popular at medical meetings among almost all specialties, and increasing numbers of physicians are being trained in cosmetic surgery and are offering cosmetic services as part of their office practices. As a result of all the foregoing developments, physicians have a much larger armamentarium of techniques and materials with which to improve facial contours, ameliorate wrinkles, and stall the telltale signs of the aging face.

Since the earliest experiments with filling substances in the late 1800s, physicians have searched for an ideal bioinjectable material. For a substance or device to be amenable for soft tissue augmentation by the general medical community, it should possess certain attributes. It must have both a high "use" potential, producing pleasing cosmetic results with a minimum of undesirable reactions, and a low "abuse" potential, in that widespread and possibly incorrect or indiscriminate use would not result in significant morbidity.⁴ It must be nonteratogenic, noncarcinogenic, and nonmigratory. In addition, the material must provide predictable, persistent correction through standardized implantation techniques. Ideally, by observing someone inject a certain substance, a physician should be able to learn how to use it and produce predictable results. Finally, if not autologous, the substance, agent, or device must be approved by the FDA.

There are 2 basic types of wrinkles (rhytides): dynamic and static.⁵ Dynamic rhytides are caused by action of the muscles and include glabellar, crow's-feet, and nasolabial (in part) and forehead wrinkles. Static rhytides are caused by exogenous sources, such as smoking, gravity, and the sun. Dynamic and static wrinkles can be seen together in areas such as the forehead and cheeks. Dynamic rhytides are normally best treated with botulinum toxin injections, which have replaced filler substances as the treatment of choice for crow's-feet and glabellar and forehead lines. An understanding of the anatomy of these wrinkles will help the physician determine whether botulinum toxin alone will do the job. Combining botulinum toxin therapy with resurfacing or filler substances can often dramatically improve efficacy.

The choice of an appropriate implant, whether solid or injectable, requires a thorough understanding of the

Dr. Klein is Professor, Medicine/Dermatology, David Geffen School of Medicine, University of California, Los Angeles.

Dr. Klein is a consultant for OrthoNeutrogena; a consultant and investigator for Allergan, Inc; an investigator for Anika Therapeutics, Genzyme Pharmaceuticals, and Medicis Pharmaceutical Corporation; and an investigator for and shareholder of SkinMedica.

materials available and the etiology of the wrinkle. Fine, superficial rhytides respond best to therapy at the intra-dermal level. Deeper, more substantial wrinkles typically have a subcutaneous component, with or without a facial-muscular element, and are best approached from the subcutaneous space. Oftentimes, a wrinkle will have both a superficial and a deep component, such as the nasolabial fold, and both of these components must be addressed to obtain optimal results.

Physicians should counsel patients on the risks and benefits of injectable substance therapy. Each physician should inform prospective patients about skin testing, the treatment procedure, and treatment expectations. The simultaneous use of 2 products can often provide optimal results. The cosmetic result not only can be improved, but the longevity of the results can be increased. For example, using a layering technique with Zyderm® over Zyplast® can provide a more complete aesthetic correction and maintain that correction longer than either product alone.

The facial features that men, cross-culturally, are attracted to in a woman are a large, smooth forehead, a small nose, round eyes (big, wide apart, and with prominent eyelashes), small lower face (heart-shaped taper to the jaw), and large lips with a plump vermillion border.³ When we look at a person's face, the focus of the lower face is on the lips.

The lower face and the lips in an aging face are the most important areas to restore, but they are the least amenable to surgical restoration. Based on my experience, it was this lack of improvement to lips in postoperative face-lift patients that suggested that bovine collagen could be used for this purpose. Even with the pull of a face-lift, the lips remain small and slowly drift to the bottom of the face as dental and bone support deteriorate. With aging, both lips become thinner, and the ends of the upper lip hang down, causing prominent labiomandibular grooves. The loss of volume in the face is responsible for the observed changes in appearance. My lip-augmentation technique has evolved into an understanding of how lip enhancement must be done. Above all, it must never be detectable. Lips are about volume but, more important, shape. Fillers are about volume restoration. Lip enhancement must also include volumetric enhancement of the lower third of the face. Rebuilding the lower third of the face takes time. If the material is injected in 10 minutes, it will look like a 10-minute job. Proper injection takes time.

The following are some criteria for evaluating the aesthetic lip in the well-proportioned face. The length of the

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A

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B

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C

Figure 1. In a well-proportioned face, the upper lip should be 18 to 20 mm from the nose, and the lower lip should be 36 to 40 mm from the chin (A). A line from the mid nares to the chin (the Steiner line) should just barely touch the upper and lower lips (B). The nasolabial angle (NLA) should range from 85° to 105° (C).

closed, relaxed mouth should equal the distance between the medial aspect of the irises. The ratio of the mucosa show of the upper to the lower lip should be 1:1.6. The interpupillary line and commissural line should be parallel when the mouth is relaxed. The distance from the base of the nose to the upper lip should be 18 to 20 mm, and the distance from the lower lip to the point of the chin should be 36 to 40 mm (Figure 1A). These distances change as the face ages and therefore need to be restored. A line from the mid point of the nose to the chin (the Steiner line) should touch the upper and lower lips (Figure 1B). The nasolabial angle should range from approximately 85° to 105° (Figure 1C). The most



Figure 2. When performing injections, the physician must create buttresses from the jaw to the lip, injecting sequentially to support the lips and restore their vertical height.

important aspect of lip augmentation involves restoring the ends of the lip and building buttresses at these ends to restore the height loss (Figure 2). This also corrects the labiomandibular grooves. It is important to inject the lips to maintain the “ski-jump” edge (the Glogau-Klein point) of the upper lip (Figure 3). Always begin injections at the labiomandibular groove, injecting slowly while stretching the lip with the opposing fingers to ensure a firm surface against which to inject (Figure 4). To ensure optimum product flow, always inject from right to center and then from left to center (Figure 5). Oftentimes, using a combination of products can result in an improved aesthetic result. One should always balance the treatment by refilling lost space in the nasolabial folds, as well as the lower third of the face.

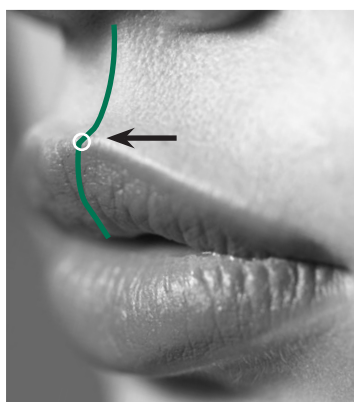


Figure 3. The perfectly shaped lip, showing the Glogau-Klein point. Notable features of the perfect lip include: upper lip shape and length, cupid's bow and philtral columns, lower-lip volume, distance from the nose to the upper lip and from the chin to the lower lip, angle between the nose and the lip, balance of the upper and lower lips, lower-lip support, texture.

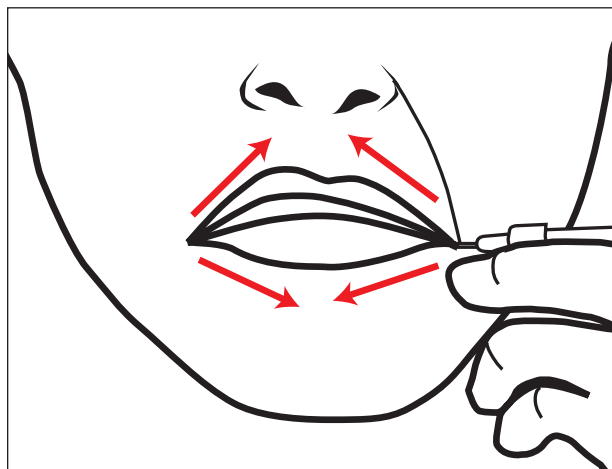


Figure 4. It is important to stretch the lip to ensure a firm surface against which to inject. Injections should begin at the labio-mandibular groove.

batches are biologically pure with low protein loads, which make them the ideal filling substance.⁶ The first HA product was approved by the FDA in 2004 for soft tissue augmentation, and since then several others have been approved for cosmetic application.^{7,8}

Discussion

Wrinkles come in various shapes and sizes, and treatment needs to be specifically tailored to the anatomy of the individual region.⁵ Failure to determine the precise cause and depth of a wrinkle will put the physician at a distinct disadvantage before treatment is even begun. The search for the perfect material to eradicate rhytides, smooth scars, and fill traumatic defects continues. New products appear frequently, and sometimes they fail to fulfill the promise of a better alternative to what we use now. This

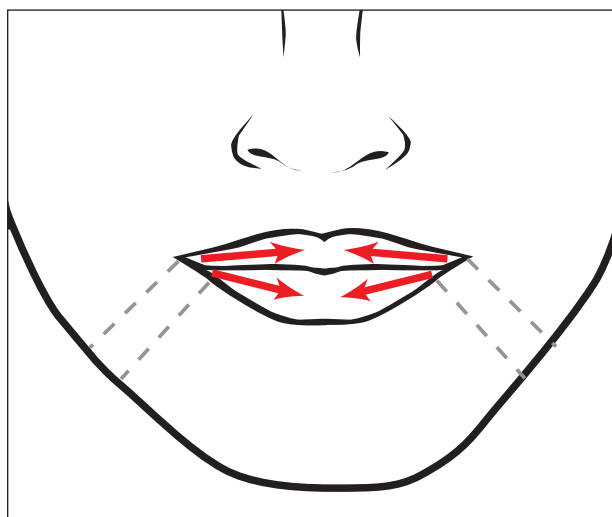


Figure 5. The patient is injected from right to center and then from left to center to assure optimum product flow.

is why we, as physicians and guides for our patients, must resist jumping on the bandwagon of every new fad or implant material that comes along. Although one must be familiar with all of the techniques, materials, and options, it is preferable to become very proficient in only 2 or 3 different methods so that you can provide your patients with options while still being experienced in the techniques that you use. It is really not what you use that is most critical, it is how you use it. Of course, safety should be the primary concern when using any implant material; thus, do no harm. As newer products develop, the methods of soft tissue enhancement will continue to change, hopefully bringing improved results to patients.

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