

occur.^{1,4} Achieving a planned osteotomy line is important for aesthetic and functional outcome of surgery; unfortunately, this is not always easy to accomplish. During osteotomy, the surgeon attempts to localize guidance of the osteotomy by forceful palpation, but sometimes this is not possible because of edema or thick skin. Some surgeons prefer to reinject the local anesthetic agent before osteotomy, which may make locating the osteotome more difficult.

We thought that lateral osteotomy could be performed more easily with an osteotome incorporating a laser or light source. This means that if an electrical system produces a laser or a powerful light and it takes off from the guide part of the osteotome through the skin, surgeons can easily estimate the osteotomy line by following the light that appears beneath the soft tissue (Fig. 1). The osteotomes used in surgical practice are considered to be sufficient in size to incorporate a lighting system within its power supply, a small round battery.

As we know, the osteotome is like hitting with a hammer to cut bone, so it can be considered to have a harmful effect on the lighting system. However, we also know that according to physical rules, the force applied by the hammer is conducted to a sharp edge that cuts bone. Therefore, the lighting system is not expected to be damaged. If the system is placed strictly into the body of the instrument, the system can be protected while the force is conducting.

We have only imagined the instrument and expect to produce the device as soon as possible. In surgical

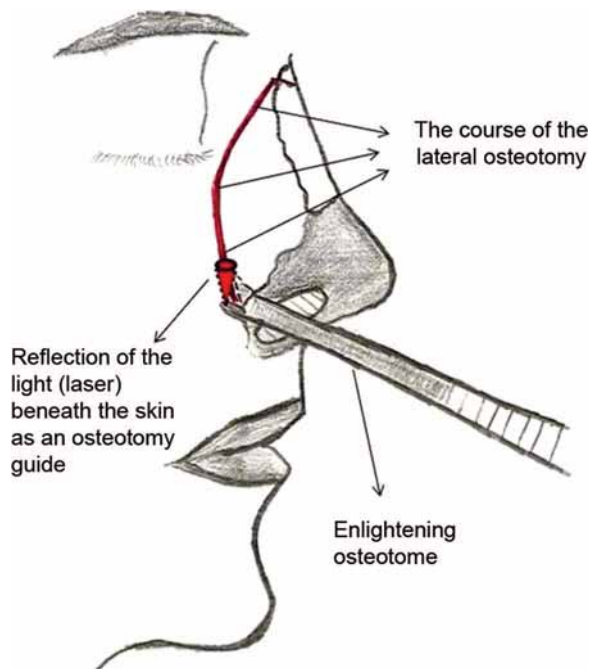


Fig. 1. The reflection of light beneath the soft tissue can help the surgeon to achieve the best osteotomy. It can make the osteotomy easier and more accurate, with a lower rate of unexpected complications.

practice, we think it might be a useful and reliable guide, especially for young surgeons. Experienced surgeons may also benefit from it when the skin is too thick or when palpation of the osteotome becomes too difficult because of edema.

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Angioedema after Treatment with Injectable Poly-L-Lactic Acid (Sculptra)

Sir:

Poly-L-lactic acid, marketed as Sculptra (Sanofi-Aventis, Bridgewater, N.J.), is a commonly used dermal filler for treatment of lipoatrophy and facial aging. Complications of poly-L-lactic acid injection are rare, with the most common being temporary bruising and swelling and the formation of subcutaneous papules.^{1,2}

We report the case of a 59-year-old woman who presented with depleted malar volume and facial aging and

who desired management with dermal fillers. The patient's medical history was significant for hypertension for which she was taking lisinopril, and she denied any history of medication allergies or sensitivities.

Local anesthesia was achieved with 1% lidocaine with 1:100,000 epinephrine and topical lidocaine/prilocaine. Poly-L-lactic acid was injected into the bilateral malar areas, marionette lines, nasolabial folds, and periorally. Cross-linked hyaluronic acid plus lidocaine was used for lip augmentation.

The patient returned to the clinic approximately 2 hours later with significant edema of the lips and perioral area (Fig. 1). She was transported immediately to the hospital, where she was admitted and treated with intravenous corticosteroids, famotidine, and diphenhydramine. The swelling resolved slowly, and she was discharged to home after 24 hours. The patient returned to the clinic 1 week later with satisfactory resolution of her edema (Fig. 2). The patient later had revision hyaluronic acid dermal injections with no adverse effect.

In this patient with severe angioedema following the use of dermal fillers, there are two types of angioedema that must be considered: allergic and angiotensin-converting enzyme inhibitor related. Allergic angioedema is considered a type I or immediate hypersensitivity reaction and occurs following immunoglobulin E-mediated release of histamine, leukotrienes, and prostaglandins. This leads to vasodilation and extravasation of fluid from the vasculature into the subcutaneous tissue, resulting in edema, often in the head and neck.³

Angioedema caused by angiotensin-converting enzyme inhibitor is thought to occur by means of an



Fig. 1. The patient showed lip and perioral edema 2 hours after injection.



Fig. 2. The patient is shown 1 week postoperatively, with satisfactory resolution of the edema.

accumulation of bradykinin in predisposed individuals using an angiotensin-converting enzyme inhibitor, which increases vascular permeability, resulting in edema of the face, lips, upper airway, and gastrointestinal tract.³ This can occur hours to years after starting an angiotensin-converting enzyme inhibitor.^{3,4} Local trauma can also induce a bradykinin response, which may be synergistic with the angiotensin-converting enzyme inhibitor, and angiotensin-converting enzyme inhibitor angioedema has been reported to occur after intubation, dental procedures, and lip biting.⁵

Immediate hypersensitivity reactions to dermal fillers are uncommon. To our knowledge, dermal fillers have not been described to induce an angiotensin-converting enzyme inhibitor angioedema, although certainly one would expect bradykinin release after a dermal injection. In the case of our patient, the fact that she received subsequent injections of hyaluronic acid without any adverse effect suggests that the angioedema may have been an effect of the poly-L-lactic acid itself. Patients undergoing injections with poly-L-lactic acid should be advised of a possible allergic reaction and monitored appropriately. In addition, practitioners administering dermal fillers to patients on angiotensin-converting enzyme inhibitor therapy should be aware of the fact that the local trauma from injection could potentially induce angiotensin-converting enzyme inhibitor angioedema. This also has implications for the injection of dermal fillers by marginally or unsupervised aestheticians or injectors, as severe adverse reactions such as this can be fatal if not managed appropriately.

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PATIENT CONSENT

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

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The Subliminal Difference: Treating from an Evolutionary Perspective

Sir:

The meaning of beauty, although ethereal in conception, has served as fodder for debate for some of history's greatest intellectuals. Although philosophers from Confucius to Plato have postulated into its metaphysical realm, perhaps a more utilitarian perspective has greater relevancy to aesthetic medicine. Beauty, from an evolutionary perspective, is an adaptive trait integral to our species' survival.

The subliminal difference technique consists of non-surgical treatments that highlight the eyes and deemphasize the lower third of the face (Fig. 1). The upper one-third of the face was injected with onabotulinum-toxinA, elevating the lateral third of the brow, reducing forehead wrinkles, and opening the eyelid aperture, causing a subconsciously projected message of friend-

liness and fertility. The eyelashes were treated with bimatoprost, further enhancing the eyes. Calcium hydroxylapatite in the cheeks pedestals the eyes and draws attention away from the lower third. Onabotulinum-toxinA into the masseters further deemphasizes the lower third by narrowing the width of the mandible, allowing the lips, which are subtly augmented with hyaluronic filler, to be further noticeable. The skin was homogenized, plumped, and toned following fractionated carbon dioxide treatment. The result is a face that conveys femininity, youthfulness, and beauty while remaining subtle, natural, and within the context of her age.

Understanding the subtleties of beauty through the evolutionary lens in which it was shaped is paramount to treatment. Unfortunately, we perhaps spend a disproportionate amount of time on technique, sometimes to the disregard of knowing what makes someone attractive and why. In its most basic essence, beauty serves as a subconscious form of communication, signaling our health, vitality, and ability to reproduce. However, obvious cosmetic interventions may be counterproductive, interfering with the subconscious message.

Facial characteristics are processed in primitive neural pathways in the amygdala and posterior cingulate cortex.¹ Emphasizing specific facial characteristics or increasing symmetry through nonsurgical interventions can result in a more favorable first impression.^{2,3} These slight yet perceivable differences are important throughout nature, as more symmetrical individuals have faster growth rates, higher fecundity, and better survival rates.⁴

The eyes also contain an enormous amount of evolutionarily relevant information, exemplified by the perceivable pupillary dilation of sexually aroused female subjects.⁵ A narrow, smaller lower third is a sexually defining dimorphic trait that maintains focus on the eyes. The preference for women with large eyes, small chins, and a minimized lower third is evolutionarily preserved and consistent across cultures. A smaller facial framework also highlights the lips, which serve an important evolutionary role for signaling female fertility.

Humans look for contrast, and to the brain, heterogeneous skin with dark spots and wrinkles suggests aging and disease. Thickened, homogenous skin is evolutionarily preferred and has been correlated to attractiveness, health, and youth.⁶

As cosmetic providers, we have many tools available to us. At times, it may be most appropriate to use surgical treatments and at other times to use nonsurgical and sometimes nothing at all. Understanding beauty within the context of an evolutionary adaptive trait puts our patients' goals in perspective. Using evolutionary science as our roadmap, the destination is more clearly defined.

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