Cosmetic approach to the Asian population

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Abstract
The types of cosmetic procedures favored by Asian individuals are unique and tailored to their anatomical differences. Thus, a customized approach is taken for different cosmetic procedures, ranging from neurotoxins and fillers to nonablative fractional resurfacing. The purpose of this review article is to identify the different types of cosmetic procedures commonly sought by Asian individuals and to understand how these different procedures are customized toward their aesthetic preferences. This review integrates the findings from multiple clinical trials available on PubMed. The procedures listed are those that are mostly performed in dermatology offices.

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During a cosmetic consult, it is important for the provider to consider the cultural background of the patient in order to understand which features are aesthetically preferred. For example, many individuals from Asia, including China, Japan, Korea, and Southeast Asia, favor certain features that are not commonly desired or needed in Western countries. In this paper, we will systematically address different in-office procedures and how they can be tailored to address the aesthetic concerns of the Asian population.

Use of fillers for nonsurgical rhinoplasty
The Asian nose is anatomically different from that of European/Middle-Eastern individuals due to a wide, low dorsum and poor nasal tip projection. Most Asian patients seeking nasal reconstruction aim to have a higher, narrower nasal dorsum and a better-defined tip. Thus, the method for attaining what is considered an attractive nose in the Asian population is to augment the nasal dorsum and tip. Indeed, nasal dorsum augmentation is one of the most desired procedures among Asians seeking surgical nasal reconstruction. A heightened dorsum is considered to be a more Western-style nose.

Although surgery is the gold standard for cosmetic reconstruction of the nose, there are consequences and possible side effects that prevent individuals from seeking surgical treatment. For example, using autogenous materials may have less risk of infection compared to alloplastic materials, but there can still be scarring and donor site morbidity. Additionally, many patients with surgical correction may experience changes over time that will require revision. Thus, a nonsurgical alternative has gained popularity in the past decade and is more realistic for most patients wanting to address smaller issues such as dents and ridges along the nose.

Because the Asian rhinoplasty involves augmentation, as opposed to the reduction involved in Middle-Eastern nasal reconstruction, the use of fillers for serial injections has been investigated. Rokhsar et al (2008) subcutaneously injected calcium hydroxylapatite (CaHa) filler to improve the contour and structure of the nose (Figure 1). CaHa is naturally found in human bones and teeth and, thus, is compatible with human tissue. Common insertion sites include the nasion, rhinion, ala, and supertip. The CaHa-based implant used in the study, Radiesse (Merz North America, Inc, Raleigh, North Carolina), had been shown in larger trials to last from 12 to 24 months and is considered a safe and well-tolerated agent for facial soft-tissue augmentation. The study had 14 patients who were followed at 2 weeks and 6 months. At 2 weeks, all of the patients reported the highest satisfaction level, and at 6 months, 13 of the 14 patients reported the highest satisfaction score rating. These rates are much higher than the satisfaction rates with any surgical rhinoplasty. The 2 main complications were bruising and edema, which only lasted up to 1 week. About one-third of the patients in the study requested “touch-ups,” and, in general, patients were more reassured when offered the option of free touch-ups.

It is important to note that while the filler material can be used to heighten the dorsum of the Asian nose to create a more aesthetically pleasing outcome, this will not correct respiratory issues or other medical indications for rhinoplasty. Additionally, the injector has the option of choosing alternative formulations of fillers, such as hyaluronic acid (HA).

Although both HA and CaHAs are used off-label for the nose area, the best way to decide on a filler is by considering the location of the defect and the thickness of the soft tissue. Each filler product is characterized by certain properties, such as hydrophillicity, elasticity (G prime), and longevity. HA fillers, such as Juvederm Ultra...
(Allergan, Irvine, California) and Restylane (Medicis Aesthetics, Scottsdale, Arizona) are temporary and can be easily reversed with hyaluronidase. Restylane has a high G prime, which means it can resist deformation under pressure and is less hydrophilic, meaning that it is less likely to absorb water and expand after injection. Thus, Restylane would be a good option for an area of the nose where the skin is thin, such as the dorsum or the nasal sidewall. In general, the thick areas of the nose are near the nasion and toward the nasal tip. Some physicians still prefer Radiesse, a CaHa filler, because of its greater viscosity and G prime and the fact that you may see more dramatic results with less volume. However, the CaHas are not reversible, and, because they are particulate in nature, irregularities can develop. Regardless of the type of filler, the injector should aim for the deep fatty layer directly above the periosteum on the bony network and directly below the superficial muscular aponeurotic system of the nose (where blood supply extends from the internal and external carotid artery systems). One reason for this is that the superficial injections can be palpable and visible. The other more important reason is the intra-arterial embolization leading to necrosis of tissue and blindness due to retinal artery occlusion. Thus, the patient should be warned about possible blindness.

**Fractional resurfacing for facial hyperpigmentation**

There have been many studies concerning fractional resurfacing in the Asian population. In one study, 30 female Asian patients were treated with Fraxel SR 750 at different fluencies and density settings, and it was found that patients treated with higher densities were more likely to develop swelling, redness, and hyperpigmentation than patients treated with higher energy levels. Thus, the density and energy level have to both be reduced in Asian patients undergoing nonablative fractional resurfacing in order to reduce the risk of postinflammatory hyperpigmentation (PIH). In one study by Chan et al (2010), 47 Asian patients with atrophic facial scars were treated with nonablative fractional resurfacing with pulse energies as high as 70 mJ, and the treatment was deemed to be effective and safe for improving acne scarring, skin texture, and overall irregular pigmentation.

**Neurotoxin for facial contouring**

Another common cosmetic treatment sought by the Asian population is alteration of the hypertrophic masseter muscles in order to produce an aesthetic narrowing of the face. Although physicians have used several drastic modalities such as surgical excision of the masseter muscle versus radiofrequency ablation of the nerve innervating the masseter muscle, the advent of Botox (onabotulinumtoxin A) has provided a less invasive modality for Asian patients. For treatment of masseteric hypertrophy, some authors have recommended injecting 3 points symmetrically on each side of the face. The anterior and posterior borders of the masseter muscle may be identified by having patients clench their teeth, and the injector can then aim for below the ear lobe-mouth corner line and about 1.5 cm above the border of the mandibular angle. The 3 injection points can be 1 cm apart. The amount to inject and the maintenance variation among injectors. In a study by Lee et al (2013), 89 units of abobotulinum toxin A (Dysport) were used successfully, which is equivalent to 35.6 units of Botox. The following figure can display the results after 2, 8, and 12 weeks (Figure 2). In one study by Ahn et al, 20 Asian patients were treated with an initial 25 units of Botox injected at the inferior masseter border, with maximum narrowing seen by 1-2 months, and about half the patients required a second injection to achieve the optimal aesthetic results. Maintenance reinjections were required around 6-8 months.

**Blepharoplasty**

The anatomy of the upper eyelid in the Asian patient has distinct features not seen in the Caucasian patient. For example, the preseptal fat in the Asian upper eyelid does not exist in the Caucasian eyelid. As a result of trying to obtain a more Westernized look, a levator plication, or double eyelid surgery, is one of the most common cosmetic eyelid surgeries in the Asian population. Additionally, due to the distinct anatomical differences, certain cautionary measures have to be taken with the Asian blepharoplasty. In the Asian upper eyelid, care has to be taken to preserve the function of the levator aponeurosis, and, thus, sutures must be carefully placed outside of this area (Figure 3). Additionally, the placement of the crease and the measurements of excision must preserve function of the upper eyelid while obtaining the desired aesthetic outcome (Figure 4). Once the location of the double eyelid line is determined at a good height from the eyelash, an appropriate excision width should not exceed 10 mm, as the average Asian double eyelid line is around 6-8 mm. In the aging individual, the surgeon must also consider degree of forehead sagging, excess skin folds on the eyelid, and the degree of sagging of the lacrimal glands. Compared...
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to the amount of skin excised from the Western eyelid, there should be less excised from the Asian eyelid (Figure 5). Additionally, suture placement in the Western patient is generally in S-shaped lines extending with a slow slope along the lateral edge; however, in the Asian eyelid, it is preferred to place suture lines along eyelid margins and avoid the ascending slope along the lateral edge.14

Skin lightening

As mentioned previously, PIH is a common condition in the Asian population and, in fact, is more commonly seen than in the Caucasian populations. PIH is caused by the increased pigmentation in the dermal/epidermal layer following an inflammatory reaction such as acne. Thus, the treatment regimen for acne in Asian patients should incorporate the prevention or treatment of hyperpigmentation.

Unfortunately, other cosmetic procedures in the Asian populations can also lead to PIH. For example, following laser hair removal with the 1064-nm Nd:YAG or treatment of facial nevi with the 1064-nm QS Nd:YAG, intense PIH can be seen in Asian individuals that is often worse than the original nevi that were treated. Even nonlaser procedures such as chemical peels can lead to significant hyperpigmentation in Asian patients.15

The provider must be cautious when performing cosmetic procedures in Asian individuals. Skin-lightening topical agents are highly sought after products in Asian countries. The first line of treatment for PIH is to start with topical treatments such as hydroquinone, which can be used safely for up to 6 months. For example, following laser hair removal with the 1064-nm Nd:YAG or treatment of facial nevi with the 1064-nm QS Nd:YAG, intense PIH can be seen in Asian individuals that is often worse than the original nevi that were treated. Even nonlaser procedures such as chemical peels can lead to significant hyperpigmentation in Asian patients.15

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Recently, some case studies in Asian countries have shown that repetitive intense pulsed light treatments followed by low-fluence Q-switched ruby laser can decrease the risk of hyperpigmentation. In the 3 cases treated by Cho et al, there was minimal downtime, and the posttreatment erythema lasted for several hours.16 Although there is still little data to support the procedure, this idea of “laser toning” with low fluence (1.6-3.5 J/cm²), large spot size (6-8 mm), and multiple passes with the QS 1064-nm Nd:YAG has become more popular in Asian countries.15 There is still large variation in the interval and total number of treatments recommended. The clinician should note, however, that there have been reports of spotty hypopigmented macules occurring with the low-fluence QS 1064-nm Nd:YAG laser. In a study by Chan et al looking at 14 Chinese patients who were treated with “laser toning” for skin rejuvenation or melasma, all of the patients developed facial mottled depigmentation. The patients received 6 to 50 treatments, with an average of 22 treatments. None of the 5 patients treated for melasma demonstrated significant improvement of their melasma.17 Thus, although there is always a risk for rebound hyperpigmentation with laser use for facial rejuvenation, the best approach is to maintain conservative energy settings for Asian skin (Figure 6) and to reduce the risk of hyperpigmentation with pre- and postoperative topical therapies. The concept of sun protection should be highly emphasized, beginning at least 6 months before laser treatments and continuing after treatment as well. In terms of lightening agents, it is still controversial and not well proven if the use of pretreatment lightening agents is beneficial to prevent PIH after laser procedures.
Conclusion
We have discussed different cosmetic concerns and cosmetic procedures that are common among Asian individuals. Although many Asian individuals seek a more Westernized appearance, the physician must appreciate the baseline skin type and facial anatomy of the Asian individual in order to customize routinely used office procedures to achieve the satisfaction of the patient.

References