



PILOT STUDY

Cosmetic

Pilot Study: Hyaluronic Acid Filler Injection Techniques to Achieve Facial Balance in Asian Patients

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Background: Current standard beauty practices in East Asia focus on enhancing and refining Asian features within cultural normalities.

Methods: This pilot study presents injection techniques using hyaluronic acid filler (YVOIRE), focusing on East Asian facial balance factors (line, angle, and proportion of the face). The Balance-L injection technique is suggested to achieve single convexity of the outer contour. The Balance-A technique is suggested to modify the profile angles, and the Balance-P technique is suggested to modify facial proportions. Five East Asian female patients gave written informed consent for the procedures and use of their photographs. Physicians used the Balance injection technique as per the patients' concerns and desired outcomes.

Results: Adapting the Balance-L technique, nasolabial fold and marionette lines were treated to achieve a natural look in patient 1. A harmonious profile was achieved in patient 2 by treating forehead, nose, and chin guided by the Balance-A technique. Patients 3–5 were treated using the Balance-P technique. Overall sagging was corrected by treating the anteromedial malar in patient 3. In patient 4, a dimensionally balanced face was achieved by treating the nose, chin, frontotemporal junction, anteromedian malar, and deep pyriform space. A younger and tighter appearing face was achieved in patient 5 by treating the nose, nasolabial folds, deep pyriform space, nasal dorsum and radix, and cheek.

Conclusions: The Balance injection technique for hyaluronic acid filler administration may help the achievement of East Asian–specific beauty standards of contour, angle, and proportion. Further study is required to confirm the findings of this pilot study. (Plast Reconstr Surg Glob Open 2025;13:e6601; doi: 10.1097/GOX.0000000000006601; Published online 23 April 2025.)

INTRODUCTION

The human form has become a wellspring of inspiration for both the scientific and artistic communities for centuries. In fact, facial attractiveness, regardless of cultural, environmental, or historical factors, has been gauged through both mathematical and visual norms, such that aesthetic medicine is regarded as a merging of science and art.¹

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Despite differences in the perception of facial beauty, commonalities exist across ethnicities, age groups, and gender. In the past, cultural standards pointed to Caucasian features as the most ideal qualities. However, current standard beauty practices in East Asia are focused on enhancing and refining Asian features within their own cultural normalities. For instance, in a study conducted by Gao et al,² they summarized global standards of perceived facial attractiveness noting distinct aesthetic criteria by East Asians (eg, Chinese, Japanese, Korean).

A balanced face in Asians is perceived to be long and narrow, with a narrow jaw and an overall slender profile. The malar region (cheekbones) has a distinct horizontal curvature and a subtle vertical curvature. The nose

Disclosure statements are at the end of this article, following the correspondence information.

Limitations regarding long-term follow-up inherently exist in this article type.

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is described as having a high vertical height and a more prominent nasal pyramid. The lips are medially fuller with a well-defined Cupid's bow and a prominent upper lip. Finally, the jawline forms a characteristically obtuse angle.³

Harmony, balance, symmetry, and youthfulness have been proposed as core components of attractiveness. ^{4,5} It is essential to emphasize that aesthetic physicians take an integrated, balanced, and scientific approach to unveil intrinsic beauty in consideration of these parameters with regard to the overall appearance of the face. This approach assures a well-balanced outcome that meets patients' expectations. ^{6,7} Balance can be achieved by addressing analysis of several factors, including single convexity (Balance-L), angles (Balance-A), and proportions (Balance-P), based on the precise soft tissue landmarks of the face.

Progressing from 2-dimensional (2D) facial analyses, a recent study focused on East Asian faces, including Korean faces, reported 3D analysis of 19 facial soft tissue landmarks to identify and measure factors of facial balance (ie, line, angle, and proportion in the face).³ The study introduced a composite model referred to as the "3D Balance Asian Face for 2021," which can be regarded as an indicator for what East Asians perceive as attractive.³

Hyaluronic acid (HA) fillers have become the most common minimally invasive treatment of choice among patients in the Asia Pacific.⁸ Among the currently established brands, YVOIRE classic plus and volume plus (LG Chem Co., Ltd., Seoul, Republic of Korea) have been the subject of several studies focusing on achieving the goal of East Asian standards of beauty.⁹⁻¹¹ Among the highly concentrated HA polymers, YVOIRE is distinguished by a maximal rate of cross-linking, minimal modification in HA structure, and optimization of dispersion of the cross-linking agent.¹⁰ Although both YVOIRE classic plus and volume plus are recommended for facial volumization, classic plus is recommended for fine wrinkle correction and volume plus for deep wrinkle correction.¹²

In this pilot study, we present practice-based injection approaches to representative facial phenotypes in East Asian women using an integrated, balanced, and unique method focusing on the previously described facial balance factors: line, angle, and facial proportion.

MATERIALS AND METHODS

Five patients from East Asia who desired a youthful, overall balanced, and harmonious face were recruited and treated with filler injections (YVOIRE) to improve each facial balance factor using the Balance injection techniques. All patients provided written informed consent before the filler procedures and outcome analysis in accordance with institutional standards and the Declaration of Helsinki of 1975, as revised in 2008. Patients gave written consent for the use of their photographs. The first author administered HA filler injections to patients 1 to 3, and the second author to patients 4 and 5; measurements were performed using clinical photographs.

Takeaways

Question: What techniques can be used to inject hyaluronic acid filler to achieve facial balance in Asian patients?

Findings: Injection techniques for treating facial outer contour line, angles, and proportions, based on 3-dimensional analysis of East Asian faces, are presented. We demonstrate that these techniques can be used to achieve the desired balanced facial features in 5 patients representing typical East Asian facial phenotypes.

Meaning: Physicians and learning injectors can use, adapt, or refer to the practical tool "Balance injection technique" when applying hyaluronic acid, to support Asian patients' desires for an attractive and balanced face.

Injection Techniques

The Balance-L Technique (Line)

Based on current standards in East Asia, the facial shape of the ideally balanced outer contour should have a single convexity without any contour ridges. Using craniometric parameters, an imaginary convex line can be traced from the trichion arching down to the zygion, connecting to the gonion and inferiorly to the gnathion point. (See figure, Supplemental Digital Content 1, which displays an image showing that the outline of a balanced face should be contoured smoothly as a single convexity, http://links.lww.com/PRSGO/D895.)

This single convexity may be distorted due to aging and volume loss. Any distorted single convexity can be modified by treating the forehead, temple, posterolateral cheek, marionette lines, and jawline using the Balance-L injection technique (Table 1, Fig. 1). The therapeutic endpoint for the Balance-L technique is the achievement of facial single convexity without inflection.

The Balance-A Technique (Angle)

The angles between the forehead, nose, and chin on the side are known to affect facial harmony and may be adjusted to improve facial balance and attractiveness. The therapeutic endpoints of the Balance-A treatment are achieving a nasofrontal angle of 120 ± 5 degrees, nasolabial angle of 100 ± 10 degrees. An additional key point is the chin position relative to a vertical line drawn from the forehead protrusion point to the lower lip protrusion point. The chin being inside this line enables a young look, and the chin touching this line provides a preferable appearance (eg, "chic," "elegant" or "stylish"). (See figure, Supplemental Digital Content 2, an image showing ideal facial dimensions in profile view, http://links.lww.com/PRSGO/D896.)

The aims of Balance-A are to increase the vertical height of the nose and make the nasal pyramid more prominent; improve the protrusion of the sellion, pronasale and alar crest; and reduce the protrusion of the subnasale. Lips should also be less protruded along the labiale superius and inferius. The chin is also made to be less protruded at the pogonion, giving the appearance of a "distant" chin. Profile angles can be modified using the Balance-A injection technique (Table 2, Fig. 2).

Table 1. Summary of the Balance-L technique

Technique	Forehead	Temple	Posterolateral Cheek	Marionette Line	Jawline
Injection accessories	Cannula: 23G 5 cm	Needle: 23G or 25G sharp 3.8 cm Cannula: 25G 5 cm	Cannula: 25G 5 cm	Cannula: 25G 5 cm	Needle: 25G 1.3 cm Cannula: 25G 5 cm
Needle entry point	 2–3 mm over both lateral brow margins Middle of both medial brow lines 	Needle: 1 cm outward from lateral brow margin Cannula: intersection between 1 cm away from lateral orbital rim and 1 cm above zygomatic arch	Around medial end of sunken cheek	The lowest end of the marionette line	Needle: center line Cannula: upper chin, center line
Injection surface	Supraperiosteal and subgaleal layer	Needle: supraperiosteal layer Cannula: the space between the superficial and deep temporal fascia	Subcutaneous layer above parotid fascia	Subcutaneous layer	Needle: supraperiosteum Cannula: subcutaneous layer
Injection method	Aspiration and bolus injection Fanning and bolus injection	Needle: regurgitation and bolus injection Cannula: fanning and retro- grade injection	Fanning for fascia dissection and retro- grade injection	Fanning and retrograde injection	Needle: bolus injection Cannula: retrograde injection
Injection dosage	2–5 mL in total	1–2 mL on each side	0.5–1 mL on each side depending on the patient	0.5–1 mL on each side	0.5–1 mL on each side
Anesthesia	Nerve block (supratroch- lear/optical nerve) and it is recommended to inject local anesthetic at the needle insertion point	Apply topical anesthetic, and it treatment area	t is recommended to injec	t local anesthetic	c at the needle point

The Balance-P Technique (Proportion)

To achieve balanced proportion, relative proportions of the following factors from the vertical-fifths and the lateral view or facial profile of the horizontal-thirds are considered: (1) the forehead should not be longer than the upper one-third, (2) the temple should not be wider than the lateral one-fifth, (3) the highest point of the anteromedial malar should be within the scope, (4) the nose should not be longer or shorter than the mid one-third, (5) the nasal ala should be within the middle one-fifth, (6) the lower third should be shorter (1:1:0.8), (7) the philtrum should not be longer than half the chin length, (8) the lips should be longer than the middle one-fifth, and (9) the upper lip and lower lip should have a proportion of 2:3. (See figure, Supplemental Digital Content 3, which displays an image showing regions of the face evaluated to correct facial proportions, http://links.lww.com/ PRSGO/D897.)

Facial proportions can be rebalanced by using the Balance-P injection technique, which targets the facial locations of the tear trough, anteromedial malar, and nasolabial fold, along with the chin and nose (Table 3, Fig. 3).

Treatment

The treatment for patient 1 was focused on improving the imaginary convex facial line along the superolateral aspect of the face using the Balance-L injection technique (Table 1), the treatment for patient 2 was focused to improve the facial angle using the Balance-A injection technique (Table 2), and the treatments for patients 3–5 were focused to improve the facial proportion using the Balance-P injection technique (Table 3).

RESULTS

Patient 1

The patient was a 53-year-old Asian female, and her main concerns were her deep nasolabial folds. She desired a youthful, natural overall look. Hence, based on the Balance-L technique, the treatment was mainly focused on improving sunken temples, nasolabial folds, and marionette lines. Using a 23G 2.5-cm needle, 1.3 mL of YVOIRE volume plus was placed in each temple. A 25G 5-cm cannula was used to inject 0.6 mL of the same filler at the posterolateral cheeks and 1.6 mL at the nasolabial fold. An additional 0.6 mL of YVOIRE classic plus was injected along the nasolabial fold and 1 mL of the same was administered along the marionette lines. Close observation of the clinical images reveals that the outer facial line was improved to form a single convexity (Fig. 4).

Patient 2

The patient was a 38-year-old Asian female. Based on the Balance-A technique, her profile angles were corrected to meet the ideal range of the nasofrontal angle of 120 degrees and nasolabial angle of 95 degrees. For this, a 23G 5-cm cannula was used to inject 3 mL of YVOIRE volume plus in the forehead, a 25G 5-cm cannula to administer 0.3 mL of the same filler on the nose and a 27G 2.5-cm needle for 0.3 mL injection of the same filler at the chin. As shown, her profile achieved harmony, as the prominences of the lower lip and forehead are shown to intersect along a single vertical line (Fig. 5).

Patient 3

The patient was a 48-year-old Asian female, whose main concern was overall sagging in the face. Based on the Balance-P technique, using a 25G 5-cm cannula, 1.4mL of

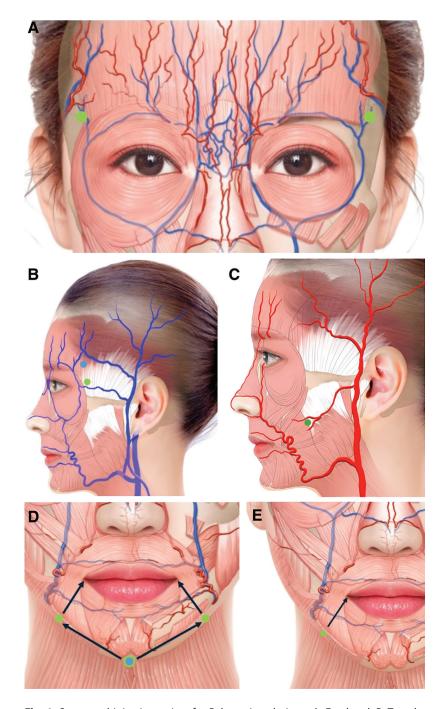


Fig. 1. Suggested injection points for Balance-L technique. A, Forehead. B, Temple. C, Posterolateral cheek. D, Jawline. E, Marionette line. The blue dot marks the needle entry point, and the green dot marks the cannular entry point.

YVOIRE volume plus was injected in the anteromedial malar to shift the highest point to a more ideal area (ie, region 3 in **Supplemental Digital Content 3**, http://links.lww.com/PRSGO/D897). Using a 30G 1.27-cm cannula, 0.4mL of YVOIRE classic plus was administered at the tear trough. YVOIRE volume plus 0.8mL was administered on the nose using a 25G 5-cm cannula, and 0.5mL was administered on the chin using a 27G 2.5-cm needle. Her relatively flat nasal bridge was shaped such that the intercanthal line was shifted to the lowest point in the nasal dorsum. Improving proportion

and volumes in the anteromedial malar, tear trough, and nose resulted in a more balanced look. (See figure, Supplemental Digital Content 4, which displays photographs of patient 3 before [A] and after [B] treatment based on the Balance-P technique, http://links.lww.com/PRSGO/D898.)

Patient 4

This patient desired a balanced and attractive look, and her major concerns were low nasal radix, chin retrusion, and deep nasolabial folds. Based on the Balance-P

Table 2. Summary of the Balance-A technique

Technique	Forehead	Nose	Chin	Lip
Injection accessories	Cannula: 23G 5 cm	Cannula: 25G 5 cm	Needle: 27G 2.5 cm	Needle: 30G sharp
Needle entry point	 2–3 mm over both lateral brow margins Middle of both medial brow lines 	Slightly (1–2 mm) below the nose tip	Protrusion: 1–2 mm above from the midpoint of inferior margin	Multiple points on dry lips and vermilion border
Injection surface	Supraperiosteal and sub- galeal layer	Supraperichondrial space Supraperiosteal layer	Supraperiosteal and subcutaneous layer	Submucosa (upper muscle)
Injection method	Aspiration and bolus injection Fanning and bolus injection	Aspiration Retrograde linear injection (do not cross over the intercanthal line)	Aspiration and bolus injection Fanning and bolus injection	Aspiration and bolus injection For the upper lip, bolus injection at the central tubercle For the lower lip, bolus injection at each side of slight lateral tubercles from the midline For the upper lip, usually inject linearly along with the vermilion border and Cupid's bow The thickness ratio of the upper lip to the lower lip is about 2:3
Injection dosage	2–5 mL in total	Maximum of 1 mL	0.5–1.5 mL	0.5–1 mL
Anesthesia	Apply topical anesthetic, a point treatment area	nd it is recommended to inject	After applying anesthetic, nerves may need to be blocked to reduce pain	

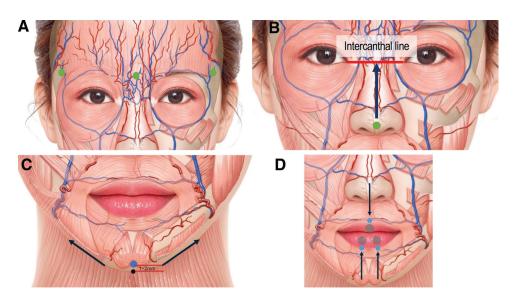


Fig. 2. Suggested injection points for Balance-A technique. A, Forehead. B, Nose. C, Chin. D, Lip. The blue dot marks the needle entry point, and the green dot marks the cannular entry point.

approach, 0.6 mL of YVOIRE volume plus was injected in the nose and chin. For nose injection, a 23G 5-cm cannula was used, and for chin, a 27G 1.3-cm needle was used. These injections achieved the ideal nasofrontal angle of 120 degrees with the prominences of the lower lip and forehead shown to intersect along a single vertical line. Using a 23G 5-cm cannula 1.6 and 0.6 mL of YVOIRE volume plus was injected into the frontotemporal junction and the anteromedial malar, respectively, on each side. A lifting effect through the mid-face soft tissue indirectly improved the nasolabial folds. Using a 27G 1.3-cm needle, 0.2 mL of YVOIRE volume plus was administered into the deep pyriform space, -and using a 23G 5-cm cannula, YVOIRE classic plus was administered in each nasolabial

fold to mitigate the nasolabial fold from the bottom. After treatment, the patient's overall look was significantly more balanced and attractive. (See figure, Supplemental Digital Content 5, which displays photographs of patient 4 before [A] and after [B] treatment based on the Balance-P technique, http://links.lww.com/PRSGO/D899.)

Patient 5

The patient wished to look younger and to have tighter skin, and her main concerns were lacrimal grooves, mid cheek grooves, deep nasolabial folds, and sagging of the middle face. Therefore, the treatment targeted the soft tissue lifting and augmentation in the middle face, with the nose finely injected, so that the whole face would be tighter

Table 3. Summary of the Balance-P Technique

Technique	Anteromedial Malar	Tear Trough	Nose	Nasolabial Fold	Chin
Injection accesso- ries	Cannula: 25G 5 cm	Cannula: 30G 2.5 cm	Cannula: 25G 5 cm	Cannula: 25G 5 cm	Needle: 27G 2.5 cm
Needle entry point	 Horizontal line from the nose tip Vertical line from 1 cm outside from the lateral canthus → Intersection of 1 and 2 	Primary correction using the anteromedial malar entry point 0.5–1 cm from the tear trough extension margin if additional correction is required	Slightly (1–2 mm) below the nose tip	l cm away from lateral end of naso- labial fold	1. Elongation: midpoint of infra margin 2. Enlargement: 0.5–1 cm left and right lateral to the midpoint of infra margin, respectively
Injection surface	Subcutaneous layer of the sub–orbicularis oculi fat	Supraperichondrial space Supraperiosteal layer	Supraperichon- drial space Supraperiosteal layer	Ristow space and sub- cutaneous layer	Periosteal and subcutane- ous layer
Injection method	Aspiration and bolus injection Fanning and bolus injection	Aspiration and bolus injection Fanning and bolus injection	Aspiration Retrograde linear injection (do not cross over the intercanthal line)	Fanning and retrograde injection	Aspiration and bolus injection Fanning and bolus injection
Injection dosage	0.5–1 mL on each side	Very small amount <0.1 mL on each side	Maximum of 1 mL	0.5–1 mL on each side	0.5–1.5 mL
Anesthesia	Apply topical anesthetic, a	Apply topical anesthetic only as needed			

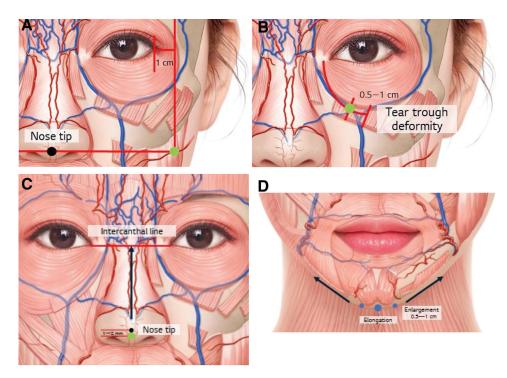


Fig. 3. Suggested injection points for Balance-P technique. A, Anteromedian malar. B, Tear trough. C, Nose. D, Chin. The blue dot marks the needle entry point, and the green dot marks the cannular entry point.

with proportional and 3D balance. Based on the Balance-P approach, 1.0 mL of YVOIRE volume plus was administered using a 23G 5-cm cannula in each side of the deep medial cheek fat and sub-orbicularis oculi fat, mitigating the 2 grooves from the lowest point of their formation. To treat the deep nasolabial folds, 0.5 mL of YVOIRE volume plus was administered into the deep pyriform space using a

27G 1.3-cm needle and 0.5 mL of YVOIRE classic plus using a 23G 5-cm cannula in each nasolabial fold. YVOIRE was injected on the nasal dorsum and radix using a 23G 5-cm needle. After the treatment, the grooves and folds became shallower and the intercanthal line was shifted to the lowest point in the nasal dorsum, resulting in a balanced, younger, and tighter face. (See figure, Supplemental Digital Content

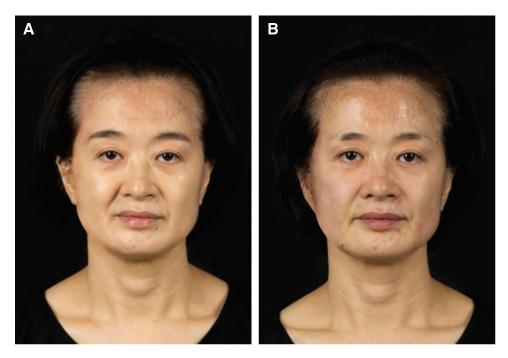


Fig. 4. Photographs of patient 1 before (A) and after (B) treatment based on the Balance-L technique.

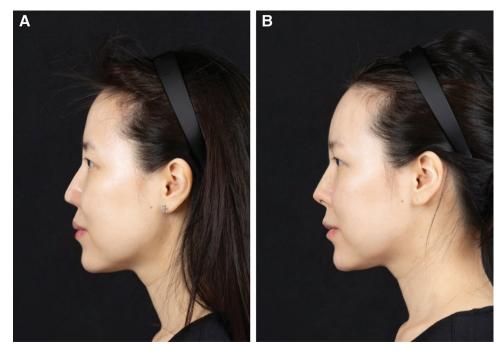


Fig. 5. Photographs of patient 2 before (A) and after (B) treatment based on the Balance-A technique.

6, which displays photographs of patient 5 before [A] and after [B] treatment based on the Balance-P technique, http://links.lww.com/PRSGO/D900.)

DISCUSSION

The Balance injection techniques as described in this pilot study are practical tools that learning injectors can refer to and adapt when facing patients seeking an attractive and balanced face. These techniques encompass major factors of contour, angle, and proportions in helping to achieve a balanced beauty for an Asian face.³ With this technique, multiple parts of the face can be treated to achieve harmonious facial beauty.

We have demonstrated the use of the Balance-L technique in achieving a youthful and natural overall look in patient 1 with the use of YVOIRE volume plus in the

temples and YVOIRE classic plus at the nasolabial fold and marionette lines. With the Balance-A technique, a harmonious profile was achieved in patient 2 with improvement in the nasofrontal and nasolabial angle using YVOIRE volume plus in forehead, nose, and chin. Overall sagging of the face was corrected in patient 3 using the Balance-P technique with YVOIRE volume plus in the anteromedial malar. In patient 4, the Balance-P technique achieved a dimensionally balanced and attractive face. YVOIRE volume plus was injected to nose, chin, frontotemporal junction, anteromedian malar, and deep pyriform space. A balanced, younger, and tighter face was achieved in patient 5 using the Balance-P technique and YVOIRE volume plus injections at nose, nasolabial folds, deep pyriform space, nasal dorsum and radix, and cheek.

Commonly used metrics for assessing facial shapes, such as the golden ratio and Phi mask, were created using Caucasian anatomies and represent Western conceptions of beauty.¹³ However, because beauty standards differ with race and ethnicity, applying the same standards to an Asian population may not be appropriate.^{13,14}

Some other approaches for HA filler injection technique in Asian patients have been suggested. Cui et al¹⁵ have suggested to follow the 2 "未来" Chinese pictographs as guides to injection sites to achieve overall beauty in Asian patients. However, this technique does not recommend the injection entry points or product volumes to be used. An expert consensus on HA filler for Chinese patients suggests injection techniques with recommended entry points and product volumes but only for the anterior frontal face. This approach focuses on nose and chin augmentation to form an attractive facial profile.¹⁰ Conventional filler injection methods focus on achieving ideal beauty in isolated facial areas using relatively smaller product volumes. 16 By contrast, the Balance injection technique seeks to enhance overall harmony and balance by designing each aspect to fit the patient's unique facial structure. Accordingly, it suggests the method of injection administration and appropriate volumes. Therefore, it may require more time and a higher amount of filler than targeted treatment for isolated facial areas.

Objective scales have been used to define facial attractiveness by measurement of facial proportions and the presence or absence of certain features. From these, 2D analyses of the face have been widely promoted, but they have a potential for inevitable measurement bias due to the use of nonstandardized photographs. Most 2D photogrammetric analyses are of nonstandard photographs and the measurements may not be reproducible and accurate. Three-dimensional analyses provide more accurate, reproducible, and reliable soft tissue landmarks and parameter measurements, providing means for investigators to overcome the 2D measurement bias. Digital techniques for measuring morphological parameters are being developed and may help to measure soft tissue and other facial parameters in the future.

The recommendations of the Balance injection techniques are based on scientific 3D analysis on angles and proportions of the composite attractive Asian face, called "3D Balance Asian Face for 2021," specific to Korean and

Chinese perceptions of beauty.³ The Balance injection techniques may therefore help the achievement of East Asian–specific beauty standards.

Patients from different countries within the Asia Pacific region have different preferences, and physicians have different treatment priorities when creating an ideal face shape. ¹³ The first patient consultation is crucial for the overall treatment path, understanding their expectations, and imparting information about the difference between their wants and their real needs. ¹⁷ Physicians can use Balance injection techniques as a communication tool during their consultation to achieve the aforementioned.

As treatment needs vary among patients, clinicians have the option to partially or fully apply the Balance injection techniques and recommended volumes to align with patient expectations. The volume of product used and the skin layer used for injection also affect the outcome of the treatment. Therefore, it is recommended for aesthetic physicians to assess the patient carefully before treatment and apply the suitable rationale and appropriate Balance injection technique, type of product, and product volume depending on the patient's needs and characteristics.

This study is limited by the number of patients; no long-term follow-ups; lack of objective evaluation scales, angles, or proportions; and the subjective and descriptive results. Objective endpoints to assess the change in facial convexity, profile angles, and proportions are necessary to show any significant improvement. Objective data would also help to validate the Balance injection technique and enable a broad comparison with the "3D Balance Asian Face for 2021." Another limitation of our study was the lack of patient and physician satisfaction ratings using quantifiable scales. These ratings are recommended to determine changes in the patient's perceived improvements and physician's satisfaction with the product and treatment. It is optimal to follow up with the patient through a series of visits to determine the need for touch-ups and the longevity of the product.

CONCLUSIONS

The results of this pilot study indicate that the Balance injection technique may help the achievement of East Asian–specific beauty standards of contour, angle, and proportion. However, to confirm the effectiveness of the Balance injection techniques in achieving these standards, further research using objective endpoints, larger sample size, longer follow-up, and a comparative analysis with existing techniques is necessary.

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DISCLOSURES

Drs. No, Jang, and Cong are employees of LG Chem Co., Ltd. HA fillers YVOIRE classic plus and YVOIRE volume plus were used in this study. Medical writing assistance was sponsored by

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