Framing the Breast

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A large number of brilliant Brazilian plastic surgeons and the flamboyant, ingenious Mendieta have described, in detail, the concept of buttoc frames, techniques for safer buttock augmentation with implants and autologous fat redistribution between the zones of the buttock region.1

After listening to Mendieta lecture on numerous occasions and operating by invitation in Rio de Janeiro, it has become clear to us that sharing knowledge through medical publications alone is dependent on the descriptive accuracy of the authors, and the quality of surgical outcomes is often very subjective within different cultural groups. By describing frames and overlying soft tissues accurately, we can better understand the myriad and diverse human appearance and, in particular, what constitutes beauty. The attractive buttock is clearly defined,2 but there is no such tool available to describe the female breast.

The skeleton is the foundation to which the muscles and soft tissues adhere and over which the skin and breast tissue naturally change with aging and physiological changes. The region of the breast can be divided descriptively into 8 units (Figure 1), very similar to the units of the buttock described by Centeno.3 From these 8 units, the general frame of the breast region can be further analyzed and described. The skeletal frame is obviously related to adolescent development of the thoracic skeleton into adulthood, as seen on transverse section (Figure 2). How the soft tissues attach to and cover the frame dictate the external visual appearance of the breasts. In addition, analysis of a longitudinal section of thoracic skeleton helps define the projecting vectors of the chest (Figure 3) and explains the positioning and appearance of the breast on the chest wall. For example, a negative vector skeleton needs a higher-projecting implant to produce a reasonable augmentation, in contrast to a positive vector skeleton, which may need only a small profile implant to produce a full augmentation. It also explains why there may be an anatomical reason why a submuscular implant is inappropriate, especially in those with a high chest positive vector and a lower chest negative vector. These patients usually have a high and, often, asymmetric insertion of the pectoralis major muscle, and deformity may result.

Clinical examples of women with varied longitudinal positive and negative thoracic skeletal vectors as well as differently shaped transverse frames are shown in Figures 4-8. The soft tissue’s appearance over the skeletal frame is largely responsible for any inadequacies the patient may perceive and, subsequently, seek to improve. Subdividing the anterior chest into units highlights the need for surgeons to understand and consider the breast as a proportionate part of the entire anterior chest wall.

The breasts should be confined within units 4 and 5. If desired, these units could be further subdivided according to general volume, size, shape, or position of the breasts on the chest wall. This includes, for example, lateral displacement, ptosis, asymmetry, or macromastia. Understanding the influence that large or ptotic breasts have upon the other six units is the key to obtaining a desirable result from surgery. The clinical application of this framing technique in breast augmentation, mastopexy, fat grafting, and reconstruction is shown in Figures 9-12. The classification unit system takes into account the lateral inframammary fold, located between junctions 4 and 7 and junctions 5 and 8, particularly when there is a soft tissue subluxation and displacement from “normal” postural positions (ie, when large breasted women or those with “empty sac” breasts lie flat). It also is relevant in the cases of post-mastectomy patients; consideration has to be given for positioning a reconstructed breast in units 4 and 5, yet the remaining chest wall appearance also needs to be balanced.

The attractive buttock has a full, high upper projection; a mid-lateral dip; an apposed natal cleft; and a short medial buttock crease.3 This is very similar to the appearance intended for a breast with the use of a bra (in addition to its...
Figure 1. Centeno units applied to the breast.

Figure 2. Descriptive skeletal frames of the thorax affecting breast shape. The frame and the breast parenchyma and overlying skin dictate the end result after augmentation.

Figure 3. Longitudinal chest vectors (A: neutral; B: negative; C: positive; D: mixed) affecting overlying breast shape. A high chest positive vector often indicates a high pectoralis major origin. Submuscular implants are less likely to give a good result.
Figure 4. A 25-year-old nulliparous female presenting with significant aesthetic problems. This demonstrates an asymmetric thoracic skeleton and “U” shaped transverse frame. There is an asymmetric breast diameter, shape and volume in units 4 and 5 creating an asymmetry of chest wall within units 3 and 6. Prominent lower costal cartilages, especially in unit 8, and a high positive thoracic vector in units 1 and 2 indicate that the pectoralis major muscle has a high origin. Differential augmentation and left mastopexy is required for improvement.

Figure 5. Oblique view of the chest of a 24-year-old woman requesting breast augmentation, showing negative upper and positive lower, longitudinal chest vectors. The patient has a “Heart” transverse frame with sunken units 4 and 5, giving the impression that she is small-breasted.
Figure 6. (A) A 39-year-old woman with an “Oblong” transverse frame and a negative longitudinal vector. She has empty upper poles units 4 and 5 and a wide, flat unit 3. Units 7 and 8 are covered by ptotic breasts and will be improved with breast elevation back to units 4 and 5. (B) Same patient, oblique view. (C) Same patient, side view.

The breast is lifted to show upper pole volume (units 1 and 2), displaced medially to show a narrower cleavage (units 3 and 6), which narrows the bulk of the breast and increases the central breast’s volume to fill the bra cup (units 4 and 5), and also shows a higher breast, revealing more of units 7 and 8. This is also the desired effect after a mastopexy or augmentation, which can be achieved either by using autologous fat grafts or breast implants. Removal of a bra causes a loss of upper pole fullness, widening of the breast itself, and varying degrees of droop, depending on breast tissue laxity and nipple tethering. The objective of surgery should be to make the patient comfortable with not only the size and shape of her breasts, but also with their positioning on the chest wall.

Mendieta’s clinical examples of fat graft harvest from buttock units 1 and 2 (in V-framed women) or units 7 or 8.
Figure 7. (A) A 40-year-old woman with a “Round” frame. Asymmetry of units 1-8 is mainly the result of a smaller, higher, slightly ptotic breast in unit 5. Nipple heights are significantly different, and she has difficulty balancing bra cup sizes. (B) Same patient, side view. (C) Same patient, left arm raised. (D) Same patient, both arms raised.

Figure 8. (A) A 25-year-old woman with an “Oblong” frame and a neutral longitudinal chest vector. There is significant displacement, asymmetric volume, and ptotic breasts in units 4 and 5. There is gross widening of units 3 and 6 (ie, a broad pre-sternum). (B) Same patient, both arms raised. (C) Same patient, side view. (D) Same patient, side view, both arms raised.
Figure 9. (A) A 29-year-old nulliparous woman who felt that her breasts were lacking volume. She has a “Heart” frame. (B) Same patient. Postoperative result 3 months after implantation. Augmentation improved the appearance within all units, 1-8, and disguised the heart-shaped central dip in units 3 and 6.

Figure 10. (A) A 41-year-old nulliparous woman who presented 7 years after augmentation with sudden swell syndrome of the left breast with a textured implant. Units 7 and 8 are occluded by heavy ptotic breasts in units 4 and 5, but unit 2 is mainly full due to the acute swelling. (B) Same patient, both arms raised. (C) Same patient, removed implant, showing two distinct capsules around the implant. (D) Same patient, the removed implant, after removal of the inner nonadherent shell.
Then auto-grafting the harvested fat to units 4 and 5 to correct ptosis and restore buttock volume can be logically applied to breast contouring with fat grafts. This is of relevance, for example, for women who have oblong frames and broad chests with prominent axillary fat pads, yet also have a small ptotic breast and a narrow pelvis. Augmentation with implants is often excessive and disappointing, in these cases, and fat transfer is very acceptable. The principle of breast units and frames also applies to reduction and is particularly good for describing an asymmetric breast. We agree with Centeno that Aesthetic Unit Classification is a vital tool that can help improve surgical outcomes, and also that a universally comprehensive tool, such as the one presented in this article, enables surgeons to speak a common language. Along with the international move to register every patient receiving breast implants, why not also implement this tool to monitor long-term outcomes?

Disclosures

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References