

Review Article

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BODY AND BREAST: SHAPE, VOLUME AND IDENTITY



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Abstract

The female breast is a multifaceted anatomical and symbolic structure that has attracted interest across anthropology, art, and medicine throughout history. The concept of the “ideal breast” remains subjective and shaped by temporal, cultural, and individual factors. In both aesthetic and reconstructive breast surgery, it is essential to acknowledge that patients and surgeons may hold differing expectations. Furthermore, the natural asymmetry of the human body challenges the notion of perfect symmetry, shifting the surgical goal towards achieving optimal similarity rather than absolute equality. From a morphological perspective, breast shape is evaluated in relation to the chest wall and spine, with ideal proportions frequently defined as a 45/55 distribution between the upper and lower poles. Nipple-areola complex positioning and size ratios are also critical to aesthetic outcomes. In terms of volume, excessively small and large breasts can disrupt body harmony and impact self-perception and social interaction. Surgical planning should therefore be tailored to align patient expectations with anatomical feasibility. Beyond anatomical considerations, the breast holds profound psychosocial significance, contributing to perceptions of femininity, sexuality, and identity. Mastectomy, particularly when not accompanied by reconstruction, can trigger deep psychological distress. Regardless of age or cultural background, each woman’s relationship with her breasts is deeply personal and must be respected. The surgeon’s role extends beyond technical expertise to include empathy and shared decision-making, ensuring that the patient is fully informed and empowered in choosing the most suitable reconstructive option.

Keywords Anatomy • Breast cancer • Breast shape • Breast volume • Sexual identity

INTRODUCTION

Breast is one of the multidimensional components of the female body, and it has attracted the attention of many fields of science and art throughout history. Anthropology, art, and medicine have each attempted to answer the following questions from their own perspectives: Does the

concept of the “perfect breast” exist, and if so, what does it look like? When the answers obtained so far are evaluated, it becomes evident that differences in time, culture, and origin prevent reaching a single conclusion (1).

Even within the same period and society, the concept of the “perfect breast” is sub-

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jective and varies among individuals. For example, in a surgical procedure performed for aesthetic purposes or for reconstruction after cancer treatment, the expectations of the patient and the surgeon may differ significantly (2). Anyone involved in breast surgery should be aware that breast perception varies from person to person. Otherwise, a surgeon who believes they have performed a highly successful operation may still face an unhappy and dissatisfied patient.

Another factor that complicates defining the concept of the “perfect breast” is that the breast is a paired organ. Since in a naturally developed human being, the two breasts are never absolutely identical in shape and volume, this asymmetry should be identified by the physician before any breast surgery, and the patient should also be made aware of it (1, 3). During preoperative discussions, instead of promising “absolute equality” between the two breasts, the goal of achieving “as much similarity as possible” should be emphasised (Figure 1).

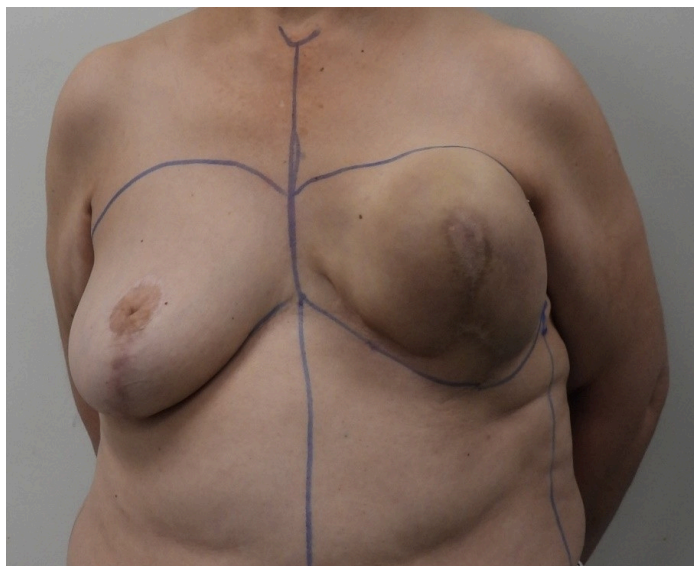


Figure 1. The breasts of a left sided breast cancer patient are demonstrated. The patient is in the second postoperative year and the breast are not absolutely equal.

Since the detailed anatomy of the breast is a topic for another study, in this paper, the breast will be evaluated under the subheadings of shape, volume, and identity from the perspective of Plastic, Reconstructive, and Aesthetic Surgery.

Effects on clinic and research

Shape

The breast should be proportional and harmonious with the whole body (4). Its shape cannot be considered independently of the chest wall on which it is positioned and the spine that supports the body (1). Possible deformities or asymmetries in these structures determine the relationship between the two breasts. Therefore, before evaluating the breast itself in terms of shape, the patient's

chest wall and spine must be examined. If these structures are overlooked, it becomes very difficult to make the breasts resemble each other through surgery.

Several studies have attempted to translate breast shape into numerical values (5-7). Mallucci and Branford evaluated photographs of 100 different breast models published over a year in the same visual media outlet, considered to represent the aesthetically ideal breast, and performed specific measurements using computer analysis (6). Statistical evaluation of these measurements revealed significant common features: the ratio between the upper and lower poles should be 45/55, the nipple should point upward at a 20-degree angle relative to the meridian, the upper pole should be straight or slightly concave, and the lower pole should be convex (6). In another study, the same authors investigated the validity of these ratios for the general population (7). They digitally modified photographs of a female breast into four upper-to-lower pole ratios (35/65, 45/55, 50/50, and 55/45) and asked 1315 participants to select the most aesthetically ideal one (7). Regardless of gender and ethnic background, the majority considered the 45/55 ratio ideal (7). Thus, both surgeons and laypersons tend to perceive such proportions as ideal. Targeting such a ratio after breast surgery may result in a more acceptable breast shape. However, as Swanson has emphasised, surgical planning should not rely solely on absolute numerical ratios but must also consider individual patient preferences (Figure 2) (8).



Figure 2. The right breast of a breast reduction patient is demonstrated preoperatively. The relationship between the upper and the lower poles was deranged and the patient became a candidate for aesthetic breast surgery.

Another key determinant of breast shape is the position of the nipple-areola complex (5, 9, 10). Generally, it is accepted that the nipple should be located at the most projecting point of the

breast and should not be tilted (8). According to anthropometric measurements by Liu and colleagues, in the ideal breast, the distance from the sternal notch to the nipple is 21–21.5 cm, whereas the distance from the nipple to the inframammary fold averages about 8 cm (5). Lewin and colleagues, using a method similar to that of Mallucci et al., presented photographs with varying nipple-areola complex positions to 1000 women and 1000 men (7, 9). By dividing the breast into x and y coordinates, they attempted to determine the aesthetically ideal nipple-areola position (9). Both male and female participants emphasised the vertical axis as the most important determinant (9). Men tended to prefer higher nipple positions, whereas women chose slightly lower positions (9). Younger participants of both genders also preferred higher nipple positions (9). Overall, the consensus was that the nipple should ideally be positioned at the vertical midline of the breast and slightly lateral in the horizontal plane (9). Therefore, the nipple position must be discussed with the patient before aesthetic or reconstructive surgery to evaluate whether their expectations are surgically achievable.

Although the ratio of the nipple-areola complex to the breast as a whole is scarcely mentioned in the literature, it is an important determinant of surgical outcome (10). Hauben et al. assessed 37 women aged 20–64 years and calculated the horizontal proportional relationships between their nipple-areola complexes and breast dimensions. These ratios were independent of age, height, weight, and body mass index. They found the areola/breast ratio and the areola/nipple ratio to be 1/3.4 and 1/3, respectively (10). From a surgical perspective, such proportions should be maintained in aesthetic procedures or in Mastectomy where the nipple-areola complex is preserved to ensure internal harmony of the breast shape.

In today's globalised world, and particularly in our country, which is a leader in health tourism, patients from diverse geographical regions seek treatment. Broer et al. sent photographs depicting different breast shapes and nipple-areola positions to 614 plastic surgeons from 29 countries and analysed their preferences (11). They found that the surgeon's country of residence significantly influenced their choices (11). Considering that surgeons are also part of their own societies, those who serve international patients must determine shared surgical goals with their patients before surgery to achieve mutually satisfying results.

Volume

Significant asymmetry between the two breasts can be problematic, as can breasts that are disproportionately small or large relative to the body. Procedures such as breast reduction and augmentation are performed to address such issues, enhancing both aesthetics and function. Similarly, in reconstructive surgeries performed after breast cancer treatment, the aim is to make the volumes of the two breasts as similar as possible.

Breast volume plays an important role not only in a woman's self-perception but also in how she is perceived by the opposite sex (12). It influences perceptions of age, attractiveness, sociability, and professionalism (12, 13). Tantleff-Dunn's video study involving 318 healthy women and men demonstrated the effect of breast volume on men's perceptions of female attractiveness (12). Each participant watched four videos of the same actress delivering a professional speech, but with digitally altered breast sizes in each version (12). Participants were asked to evaluate the woman's appearance professionally and socially in each video (12). Although female participants were unaffected by the variations, male participants perceived the woman with medium-sized breasts as more professional and attractive (12). This indicates that postoperative breasts should avoid extremes of being too small or too large and should instead be in harmony with the patient's overall body proportions.

In preoperative consultations, expectations regarding postoperative breast volume must be clearly discussed. Limitations may exist depending on the chosen reconstructive technique. For example, implant-based reconstructions are constrained by implant volume and may not achieve the larger sizes possible with autologous tissue reconstruction. In short, the patient's volume expectations often dictate the choice of reconstructive method.

Identity

The female breast is not merely an anatomical structure but also carries meaning beyond its role as an organ. Concepts such as beauty, motherhood, vitality, sexuality, and body image contribute to the construction of female identity (14, 15). In societal terms, the breast is viewed both as a source of sexual desire and as a primary symbol of motherhood (14).

Webb and colleagues stated that a woman's relationship with her breasts is rarely one of complete harmonies (14). Some women may perceive their breasts almost as separate entities. While some choose to ignore their breasts, others express strong dissatisfaction. This "dialogue" between woman and breast begins at puberty, as breast development is one of the earliest changes of adolescence (14). The dialogue may deepen despite a diagnosis such as breast cancer, presenting a profound challenge to female identity. Chan described the absence following mastectomy as not only a physical wound but also a psychological one (15).

The devastating effect of mastectomy on female identity has been extensively discussed in the literature (16). Piot-Ziegler et al. conducted psychiatric interviews with 19 patients with breast cancer who had undergone mastectomy at various times (16). The majority reported that they felt their bodies had lost structural integrity. Even after reconstructive surgery, this perception persisted, with significant differences noted between preoperative and postoperative body images (16). According to Piot-Ziegler,



mastectomy profoundly impacts female identity, leading women to question their existence and selfhood (16). Surgeons working with this vulnerable patient population must be aware of these identity struggles. Otherwise, even a technically successful surgery may fail to achieve its intended purpose in the patient's inner world, resulting in dissatisfaction.

One of the greatest mistakes would be to evaluate the importance a woman places on her breasts based on her age or perceived sociocultural background. Since the breast is an essential component of body image, it remains important for women of all ages, and the misconception that reconstruction is unnecessary for older patients must not be accepted by any breast surgeon. Some women, due to sociocultural reasons, may not emphasise their breasts in social life, but this does not mean they do not view their breasts as part of their identity. Alinejad Mofrad and colleagues reviewed studies on the sexual lives and body images of mastectomy patients living in Iran (17). Their review showed that women considered their breasts as symbols of femininity, and breast loss negatively impacted their sexual lives and body images (17).

CONCLUSION

Options and timing for post-mastectomy breast reconstruction are highly variable. Reconstruction may be performed simultaneously with mastectomy or delayed. Reconstruction may not be performed at all, with patients instead using external prostheses inside a bra or nothing at all. Both prosthetic and autologous tissue options are available. The key condition in all these scenarios is that the woman must be included in the decision-making process (14). The woman must be fully informed and make her own decision consciously regarding her reconstruction. She should always be made aware that she has options and that she is never condemned to an identity crisis.



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Conflict of Interest The authors have no conflict of interest to declare

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