Reply: Quality-of-Life Outcomes between Mastectomy Alone and Breast Reconstruction

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Reply: Quality-of-Life Outcomes between Mastectomy Alone and Breast Reconstruction: Comparison of Patient-Reported BREAST-Q and Other Health-Related Quality-of-Life Measures

Sir:

We thank Dr. Barone et al. for their comments on and interest in our publication on quality-of-life outcomes between mastectomy alone and breast reconstruction.[1] We thank them for sharing their experience. We are glad to read that they agree with our results. Furthermore, we appreciate the opportunity to react to their comments.

Barone et al. mentioned that they deal mainly with women from two age groups: younger than 40 years and older than 60 years. This is not our experience. In our practice, we treat patients in all age groups. In our study, we had approximately 24 women younger than 40 years, 92 women aged 40 to 60 years, and 22 women older than 60 years.

We understand Barone et al. when they state that in the younger age group the aesthetic outcome is of greater concern than in the older age group. We believe that the cancer treatment should receive similar attention in all patients, irrespective of age. We do not agree with Barone et al. on their strict division into age groups. In our practice, we see women younger than 40 years refusing reconstruction and women older than 70 years who insist on undergoing reconstruction. Even though age seems to have an influence on satisfaction with outcome,[2] we cannot take only age as an indication or contraindication for reconstruction or for a different approach.

The general health status, the woman's expectations, and the information provided about reconstruction are more important factors in the reconstruction decision-making process. We fully agree with Ho et al., who conclude in their recent article[2] that "Patients' levels of satisfaction with preoperative information and their interaction with their plastic surgeon significantly influence satisfaction with their breasts and overall outcome."

We totally agree with Barone et al. on the importance of the quality-of-life assessment before and after surgery using the BREAST-Q instrument. It is the only available case-sensitive and -specific instrument for the evaluation of the decision-making process in breast reconstruction. Preoperative evaluation of the baseline quality of life helps us and the patients to better understand the patients' desires, better inform our patients, and possibly achieve satisfactory results. We are conducting a prospective study in our department to examine the quality of life at baseline and several times during the follow-up period after breast reconstruction. The evidence-based results would empower future breast cancer patients and enable them to make a more informed decision.

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Three-Dimensional Simulated Images in Breast Augmentation Surgery: An Investigation of Patients' Satisfaction and the Correlation between Prediction and Actual Outcome

Sir:

Drs. Donfrancesco et al.[1] report that their patients feel that three-dimensional simulation is very accurate. Notably, the authors themselves do not make this claim. Nevertheless, they promote this method as a revolutionary office tool. Is it time to invest in such a system?

Methodologic issues merit comment. The authors do not provide the number of patients selected for this analysis compared with the total number of breast augmentations performed. The time frame of the study is not reported either. What percentage of women did not return for follow-up photographs and surveys at 6 months? The inclusion rate (ideally ≥80 percent)[2] is needed to determine whether the reported experience is likely to be representative of all patients. In comparing conversion rates, the authors reference a series of 151 consecutive patients consulted without this imaging method. This group would have served nicely as a control to assess any possible benefit in implant sizing. Why did the investigators forego this opportunity?

A crucial consideration is the measuring device.[3] Instead of taking measurements, the authors survey a panel of plastic surgeons and nurses who compared nonstandardized photographs with simulations. These observers opined that the images were equivalent in only 18.7 percent of the cases studied. There were numerous dissimilar findings, reported in 36 categories, which the authors candidly enumerate.[1] The simulations were particularly unreliable in predicting the appearance of the cleavage area.[1] In 28.6 percent of cases, the simulations appeared better than the actual results, a liability that the authors recognize as a "challenge." They incautiously (from a medicolegal perspective) comment that, in patients with suboptimal characteristics such as asymmetry and ptosis, the simulated image can appear "deceitfully good."[1] The authors claim that "seeing what the breasts will appear like with several types of implants" is a benefit, but they present no data comparing simulations by implant type (all were McGhan Style 410 implants).

Lack of accuracy of simulations is not surprising. The authors point out that "there exist no validated instruments at present designed to evaluate the similarity of three-dimensional images and the actual operated breasts that address specific mammometric parameters." To correlate with actual breast shape changes after augmentation, a standardized measurement system with well-defined parameters is needed. Such a system is now available[4] and has been used successfully in two-dimensional frontal and lateral renderings of breast measurement data.[5] (Although the authors' system uses a three-dimensional reconstruction, the images themselves are two-dimensional.) Next, real measurement data are needed.[5] By entering this information, a database may be constructed and used to inform the simulations.

We know from measurements that the inframammary crease[6] and lower pole level descend after breast augmentation.[5] The breast area, upper pole projection, breast projection, and lower pole width increase; the nipple level is unchanged; and the areola width increases approximately 1 cm.[5] The simulations show some of these changes, with magnitudes that differ from actual results, but not others (e.g., simulations do not depict areola widening) (Fig. 1).

Photographic standardization is mandatory. The postoperative photograph shown in the authors' Figure 4 is 19 percent magnified compared with the simulation. These images may be easily matched for size and orientation using the basic measurement functions contained in the same Canfield software used by the investigators. When this difference is corrected, the simulated breast size appears larger than the actual postoperative breast size (Fig. 1). Ideally, the authors would also standardize arm positioning. It is difficult to exactly match the degree of rotation, making oblique images of less value.[4] Lateral images, not used by the

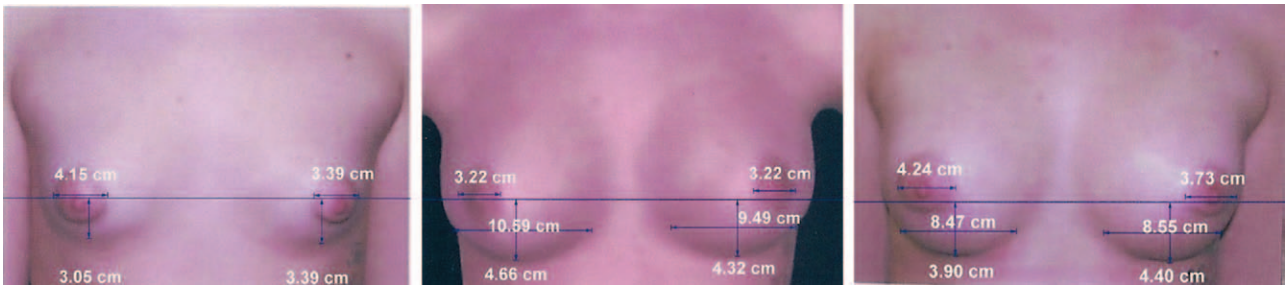

Fig. 1. This illustration depicts the frontal images from the authors' Figure 4 corrected for size and orientation using Canfield Mirror 7.1.1 (Canfield Scientific, Inc., Fairfield, N.J.). software. The images depict a patient before (*left*) and 6 months after a breast augmentation (*right*), and a simulation (*center*). The orientation-matching function corrects a 25 percent reduction in size of the simulation compared with the preoperative image and an 11 percent size reduction of the postoperative photograph compared with the preoperative photograph. The program also corrects a 2 degree tilt (*right*). Lower pole measurements are superimposed. The simulation overestimates breast size and the descent of the right lower pole level, which is the same as the inframammary crease level in this patient. It overestimates postoperative lower pole width and underestimates postoperative areola diameter. The simulation reasonably depicts the nipple level, which is slightly elevated in this patient after surgery. An internipple distance of 20 cm was used for calibration. (Adapted from Donfrancesco A, Montemurro P, Hedén P. Three-dimensional simulated images in breast augmentation surgery: An investigation of patients' satisfaction and the correlation between prediction and actual outcome. *Plast Reconstr Surg.* 2013;132:810–822.)

authors, are best for measuring breast area, breast projection, upper pole projection, and nipple level.[4]

The authors conclude[1] that "if they could go back in time they [patients] would choose the same implant again." However, 19 percent of their patients reported that they would have preferred a different implant size, usually larger, despite having undergone three-dimensional analysis. Other studies using preoperative breast measurements and bra inserts to gauge implant size report patient size dissatisfaction in the range of 16 to 20 percent.[7,8] Evidently, the simulations do not improve the reliability of implant sizing.

Practical measures to improve the quality of evidence include (1) reporting the inclusion rate, (2) photographic standardization, (3) an objective measuring device,[4] and (4) a control group.[3] In fact, all of these desirable methodologies were available to these researchers and would have enabled a level II study with greater reliability and possibly different conclusions.

The authors conclude that three-dimensional imaging is a useful tool for improving their "conversion rate." From a scientific standpoint, the conversion rate is irrelevant. Should plastic surgeons be encouraged to purchase tools that patients perceive as advantageous but are of no proven value? Three-dimensional imaging may be in our future (or maybe not if television broadcasting is any indication). If real patient data are entered with frontal and lateral references, it may be possible to develop a system that can truly simulate surgical changes and relate them to implant size (shape may be more of a challenge). If successful, such a system would improve on perceived value and represent a real advance. In the meantime, perhaps plastic surgeons are best advised to show patients actual before-and-after photographs of women with similar breast characteristics and candidly inform them that computer simulations cannot yet accurately predict surgical changes of the breasts, particularly when there is a degree of breast sagging, and their actual result is likely to differ from a simulation.

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Analgesic Efficacy of Lidocaine for Suction-Assisted Lipectomy with Tumescent Technique under General Anesthesia: A Randomized, Double-Masked, Controlled Trial

Sir:

I read with interest the article entitled: "Analgesic Efficacy of Lidocaine for Suction-Assisted Lipectomy with Tumescent Technique under General Anesthesia: A Randomized, Double-Masked, Controlled Trial," by Danilla et al. in the August of 2013 issue of this *Journal*.[1] The authors should be commended for conducting a scientific, prospective study on the use of amide-derived local anesthetics in liposuction. The study design facilitated a case-control comparison based on laterality of the injected lidocaine tumescent fluid.

The study was terminated early after it became clear that the lidocaine-treated side demonstrated a small but significant decrease in pain compared with the control side. Unfortunately, the authors dismiss this finding as clinically insignificant, and despite their evidence, they report abandoning the use of lidocaine in the liposuction wetting solutions. Instead of abandoning the use of lidocaine, this study should have reinforced the use of lidocaine and stimulated interest in further study on its clinical significance.

The small effect observed with the lidocaine-treated side likely underestimates the true efficacy and clinical significance of the observed pain reduction. First, systemic lidocaine decreases reported pain and narcotic use (which is presumably why according to the protocol intravenous lidocaine was not permitted to be administered by the anesthesiologist).[2] As is well documented, there is significant systemic absorption of infiltrated lidocaine present in wetting solutions; this systemic lidocaine likely reduced the global pain score and affected pain levels on both sides.[3] Second, gate theories of pain suggest that prevention of pain with a sodium channel blockade (e.g.,