

approaches do not allow patients to select their breast implants, this advance does *not* limit the ability of patients to be fully responsible for ultimately selecting their breast implant size, but rather it allows them to be fully informed and educated about the current state of the art in breast augmentation before they make their decision.

The opinion that quantifiable breast analysis is nonproductive is not only false but will likely produce a multitude of problems in the next 1 to 2 years, when a variety of new shaped devices become available for use. Optimal outcomes with more sophisticated devices require strict, dimensionally based preoperative analysis and planning and meticulous intraoperative technique.

And what about patient recovery, outcomes, and reoperation rates? How many patients would rather return to full normal activities within 24 hours compared with the recovery experienced by the average augmentation patient?<sup>2,3</sup> Do we direct residents to the peer-reviewed and published tools to deliver these outcomes, or do we ignore significant advances to the patient experience while restating the principles that produced a 20 percent reoperation rate in the latest premarket approval submission?<sup>4</sup>

The future of plastic surgery is in the hands of our young and developing surgeons. Dr. Brody's expertise and contributions in breast surgery are significant; however, this editorial sends the wrong message, especially to the young plastic surgeon. Advances in breast augmentation have been significant in the past 5 to 10 years, and a dramatically better experience is available for all patients. Delivering improved patient outcomes and a vastly improved patient experience requires forward-thinking and appropriate mentors, open minds, and effort. The last two ingredients are undoubtedly present in today's young plastic surgeons. The first ingredient depends on the messages we send them and the tools we provide to them.

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#### BRODY'S ARTICLE ON "THE PERFECT BREAST"

Sir:

I am a grateful former resident of Dr. Garry Brody, but I respectfully dare to take issue with my mentor on his editorial, "The Perfect Breast: Is It Attainable? Does It Exist?" (*Plast. Reconstr. Surg.* 113: 1500, 2004).

It is an interesting choice of words to write that a colleague "has extensively proselytized the use of chest/breast ratios." Proselytization is imposing *your faith* upon another. However, this surgeon has published extensive quantitative analysis of breast augmentation surgery. Dr. Brody uses this word to pejoratively dismiss conclusions that were based on *quantified empiric data*. The triumph of data over faith is what distinguishes science from all other intellectual endeavors. If we are to even pretend we are scientists, we must avoid using our own beliefs to condemn empiric data.

Dr. Brody argues that since we cannot define the perfect breast, and since we have no meaningful control over breast shape, we should focus only on volume. But even though we might not be able to define the standard *perfect breast shape*, we can look at an individual patient's breasts and identify what would make a *better breast shape for her*. And even if we cannot all agree about what would constitute a perfect or better breast shape, we should agree about *unattractive breast shapes* (e.g., visible edges, disproportion, and stretch deformities). Avoiding these (often uncorrectable) iatrogenic deformities should be as important as striving for the perfect shape.

I have seen that my operative choices do profoundly affect long-term breast shape (e.g., implant shape, size, fill, and projection; pocket location; parenchymal scoring; and so on), as well as the need for secondary surgery. I have also observed that when tissue characteristics are ignored for the sake of size, unattractive deformities are more likely to occur. My experience is different from that of Dr. Brody: I believe we can improve breast shape (and damage it as well). Dr. Brody is correct that this shaping power is limited, but it is sufficient to allow us to be breast shapers and not just breast stuffers.

He is correct that existing implants give limited control over shape. As an investigator in both the Inamed and Mentor core trials of form-stable cohesive silicone gel-filled implants (the 410 and the CPG), I can report that rather than being subject to deformation by gravity and the forces of the breast, these implants maintain their shape and impart it upon the breast. We are at the dawn of an era in which we will have an unprecedented ability to control shape. That is why Dr. Brody's editorial is so timely.

Dr. Brody says that we should not be "playing Pygmalion" when it comes to choosing size, but instead allow our patients to pick the volume that they wish to have. I disagree. I feel it is not merely appropriate but ethically mandatory for us to detail the trade-offs of Brobdingnagian augmentations to patients. After discussion of these issues, I have had only the rare patient choose implants as large as those he commonly uses. While traction rippling, visible edges, excessively lowered inframammary folds, parenchymal atrophy, synmastia, bottoming-out, and stretch deformities requiring mastopexy are all possible with moderate-size implants, these problems are exacerbated by implant size. Discussing these topics is not playing Pygmalion; it is achieving informed consent.

I think that when patients size themselves by filling a brassiere until they achieve their desired appearance, they risk being overaugmented. As Dr. Brody discussed, clothing extensively shapes the bosom and a society's concept of the ideal breast. Even the Wonderbra comes in a 38D! The goal many patients have today is, as Dr. Brody would agree, one dependent on the amplifying effects of these brassieres. If a

patient fills up a standard brassiere until she achieves that look, she will be asking for more volume than necessary. If natural D-cup women wear these brassieres, why cannot augmented women?

Dr. Brody tells us not to be a “Henry Higgins to our Eliza Doolittle patients.” I suppose if one thinks that Eliza would have been better off if she had remained on the street as a flower peddler, then one should acquiesce to patient size requests without regard for tissue characteristics. I, for one, feel that Henry Higgins improved Eliza Doolittle’s life, and I am not ashamed to offer patients my opinions as to the consequences of their choices.

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### REPLY

Sir:

First of all, let me thank Dr. Dowden for his kind words. It is nice to know that I have at least one kindred soul.

Drs. Tebbetts and Adams, however, take issue with my philosophy, stating that “it may... be illogical, incompetent, potentially damaging to patients, and medicolegally indefensible to give patients ‘what they want’ without ensuring that they simultaneously understand ‘what they are likely to be getting,’ especially long term.” Harsh words. Perhaps Dr. Tebbetts in his concern did not note those parts of my editorial where I emphasized that patients should be reminded that the breasts, natural or augmented, are the most changing organs in the body. They change with puberty, weight gain and loss, stage of the menstrual cycle, pregnancy, nursing, age, menopause, and, of course, implants. The degree of influence of each of these factors depends on the individual genetics and biology of each patient and is thus unpredictable. Dr. Tebbetts also asks what I meant by “consequences” of the patient’s size choice. There are three separate statements referring to the need to fully inform patients of the consequences, that is, possible outcomes, both good and bad. As this was not a treatise on what a patient needs to know, I did not elaborate, as I assumed, apparently incorrectly, that the reader would understand that the “consequences” of any operation are the essence of informed consent.

I do apologize to Dr. Tebbetts for misquoting him and omitting the reference for the quote. I was referring to his chapter in *Clinics in Plastic Surgery* in July of 2001, on page 434,<sup>1</sup> where he states, “I am also considering strongly another endpoint—limiting implant size for primary augmentation to 350 ml. Currently I require any patient who desires an implant greater than 350-ml volume to sign extensive, detailed informed consent documents that detail all of the risks and tissue compromises that exist long term...” It seems to me that the surgeon’s communicated disapproval of the patient’s desires can only intimidate the patient into submission and may ultimately detract from her satisfaction with the outcome. Once the surgeon agrees to the procedure he should enthusiastically embrace her decision to maximize the ultimate goal—her self-esteem. I could not in good conscience perform a procedure that I did not believe was right.

Dr. Tebbetts, by his own words from the podium, limits his practice to a select group of uncomplicated, straightforward patients. However, his comments imply that his results are

applicable to all comers. Most of us are willing to treat the complicated problems as well, customizing the procedure to the patient’s individual problems and concerns, many of which do not lend themselves to ideal outcomes or to standardized measurements and ratios.

Drs. Adams and Teitelbaum suggest that the three simple tape measurements introduced by Tebbetts are scientific while a volume measurement is not. Dr. Teitelbaum corrected my English where I used *proselytized* when a better word would have been *popularized*. I will return the favor. Where he states that “[Dr. Tebbetts’] conclusions were based on *quantified empiric* data” I think I know what he means, but I would remind him that *Webster’s* defines empiric as “*rely(ing) on practical experience.*” I claim no more or less. In fact it takes very complicated math to convert surface area to volume and is impossible from three surface measurements of the uniquely complex surface of an individual breast. I would remind them that while the volume enlarges by the cube of a *perfect* (emphasis intended) hemisphere, the surface area enlarges only by the square. Calculating the volume or area of the multiple variable contours of different sizes of shaped implants would require a separate formula or direct three-dimensional measurement scans of each one and cannot be calculated from three simple measurements (Fig. 1).

Dr. Adams also referred to “having patients stuff their brassieres with rice bags or water-filled Ziploc bags.” This is a misquote, suggesting that he has not read my article on the subject.<sup>2</sup> The “stuff” in my editorial refers to what the patient uses at home to get the look she wants. That, of course, does not provide any usable volume measurement. To reiterate, I recommend underfilled, soft, “baggie”-like bags of water that can fill every nook and cranny of the brassiere for accuracy. Rice, Ziploc bags, and implant sizers leave too much dead space for precision. The patient is also instructed to purchase a brassiere that has a full cup, with no padding, and that is made of nonstretch material. Of course, even these do not provide complete accuracy, so that the final measurements should be taken by the surgeon with the

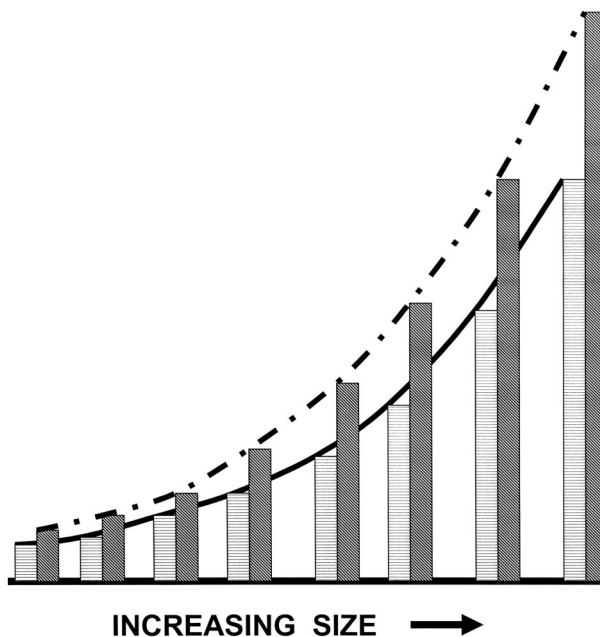


FIG. 1. Rate of change of surface area compared with volume with increasing implant size (solid line,  $\square$ , surface area; broken line,  $\boxtimes$ , volume).

patient in front of a mirror. She can then again try different volumes within a range that the brassiere provides with her clothes on before giving final acceptance, thus ensuring accuracy. Adherence to these parameters results in very precise measurements. Fewer than 1 percent of my patients later request a size change. (It is interesting to note that both manufacturers report that reoperation for size change is approximately the same for up and down sizing.)

I am curious as to how Drs. Tebbetts and Adams can "scientifically" evaluate tissue characteristics. I have in the past spent more than 400,000 federal dollars in collaboration with the best materials scientists at Jet Propulsion Laboratories to study the viscoelastic characteristics of in vivo human skin and scar. We found that both skin and scar have more complex elastic characteristics than any known material. These properties vary with posture, age, direction of stretch or compression, time, Langer's lines, and anatomic location from millimeter to millimeter. This makes analysis challenging, interpretation questionable, and prediction impossible.<sup>3-5</sup> There is a property of viscoelastic materials such as skin and silicone elastomers called thixotropia. This is the phenomenon by which these materials stretch under tension or load and then either reset at a new length if the pressure is relieved or continue to creep if the pressure is maintained. Thus, the shell that is inflated to the "ideal" volume at surgery may actually enlarge in relation to the saline volume and thus feel softer than when inserted and/or present with wrinkles.

Yes, Dr. Adams, added weight may indeed accelerate sag, but who can predict whether the aging implanted breast will end up as a "rock in a sock" from the implant weight and lack of fixation to the chest wall or as a "Snoopy" deformity due to the natural tendency to ptosis of the original breast over a fixed device? Dr. Teitelbaum, only time will tell if this will happen to the cohesive product, but I predict that it will as it certainly did for the foam-covered devices. Should these women not get pregnant or nurse for fear of distorting our plastic surgical masterpieces? Perhaps we shouldn't offer face lifts to patients because the wrinkles will return with time? Certainly we see young women who are willing to have surgery and resultant scarring to reduce their large breasts, but what we do not see in our offices are the silent majority who accept and even delight in their ample or small bosoms. What are we operating on, large or small breasts or the relative minority of women who are unhappy with themselves and concerned enough to seek our services? There does happen to be a woman with her own lifestyle, personal goals, and sense of self attached to these bosoms.

I am disappointed that the evidence of history seemingly does not impress Drs. Tebbetts and Adams. What will we do if fashion, yes, fashion, changes and the breasts of the A-cup pseudoptotic flapper era again become in vogue? Will we be augmenting our income by de-augmenting our patients' breasts? It was said by Willie White, my professor, that plastic surgeons do not live long enough to truly see what they have wrought. Dr. Adams claims an experience of 10 years, but I have just seen a patient I augmented in 1967 who was content with her sag and accepting of her contracture. I have never seen patients "furious about their ptosis," ripples, and palpable edges if they have been appropriately informed. Surely they do come back for correction of these problems, which are more related to aging or the inability of a very small-breasted woman to mask the ripples and edges of a saline implant placed in the submammary plane. They were sometimes upset, but only with the U.S. Food and Drug Administration, which prohibited the use of gels for primary augmentations, which would have minimized the problem from day 1. When only smooth gels were freely available, ripples were

almost never seen. Only when the polyurethane and the textured devices became popular did ripples surface as a concern.

We live in a multicultural, multiethnic society in which there is no single standard of beauty. Tattoos, fluorescent hair, shaved heads, studs in every bodily projection and orifice, and scarification are the norm in some subcultures. More implants are sold in coastal America than in the Midwest. Many African Americans, at least in Los Angeles, prefer full hips rather than the slim lines of the classic fashion model. We cannot put our patients in the single mold of our personal mind's eye, but must be conscious and understanding of their own goals and desires. We must also, of course, evaluate as best we can the maturity of the woman's decision-making process to maximize the quality of her outcome.

Dr. Teitelbaum, please reread my comments on surgical shaping. I never denied you permission to improve the contour, but only stated as you did that our ability to control shape is limited. Also, remember that Eliza Doolittle was unhappy with her transformation until love was added to the equation.

Dr. Adams, I am not concerned about our young plastic surgeons. They are, by virtue of our very specialty, independent thinkers like yourself and Dr. Teitelbaum who, if we train them well, will make up their own minds from their own experiences no matter what we write here today.

Finally, yes, subjectivity and empiricism are promoted in my piece because that is what my editorial was about. There is no quantifiable measure of breast beauty. It is all in the eyes of the beholder (and holder), whose views we must respect. DOI: 10.1097/01.PRS.0000157536.44587.C8

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#### VIEWPOINTS

##### A SIMPLE DEVICE FOR CLEANING THE HAIR AFTER SCALP SURGERY

Sir:

The scalp is an extremely well-vascularized structure. Both surgery and trauma can cause severe bleeding.<sup>1,2</sup> Although this bleeding can be arrested intraoperatively,<sup>2</sup> the clotted blood remains in the hair, matting it together. This results in unsightly dried blood in the hair, which can cause irritation to the patient