
Discussion

Cohesive Silicone Gel Breast Implants in Aesthetic and Reconstructive Breast Surgery

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During the past 10 years in the trenches of resident education, I have often thought a prerequisite required reading for surgical residency should include Lance Armstrong's biography, *It's Not About the Bike: My Journey Back to Life*.¹ His achievement of full recovery from cancer to win the world's hardest sporting event, the 1999 Tour de France, is inspiring to say the least. In the end, the reader learns that it really is not about the bike but about more important issues of life, overcoming adversity, family, and determination, that are truly important.

Similarly, advances in aesthetic and reconstructive breast surgery have provided enhanced patient experience and outcome, but it is really not about the implant. The real advances currently available to plastic surgeons are in patient education/informed consent, clinical decision making and planning, surgical technique, and postoperative management. These significant advances have nothing to do with the implant.

Nevertheless, this report by Brown et al. gives us a glimpse into the future and suggests that some future advances in implant-based procedures may actually be about the implant. The article details the senior author's experience with the enhanced cohesive gel devices. The study is well conducted and my comments are meant only for constructive assessment.

The authors state the various benefits of cohesive gel implant including maintenance of shape and upper pole fill, decreased rippling, and less chance for gel filler escape. All of these are valid, but what is not mentioned is the reason why all of the above is possible; the cohesive gel filler allows for control of distribu-

tion of fill within the implant and subsequently the distribution of fill within the breast. This is a critical concept that explains many of the benefits of these implants.

Regarding the authors' clinical planning of the size and type of implant for the breast augmentation patients, it would be useful to know specifically how they arrive at these decisions. The authors state, "Implants were selected on the basis of the application of bi-dimensional principles. . . implant style and size were selected using anatomical measurements defining breast height, desired breast width, nipple position in relation to the sternal notch and inframammary fold, volume of breast tissue, and anterior stretch of breast tissue." Using quantifiable parameters to determine breast implant size is logical and the authors should be commended for using this philosophy; however, it seems the system being used is the first generation bi-dimensional system where the surgeon determined "desired breast width," cleavage, and so forth, and forced the tissue to the desired result. This system has now evolved through a second-generation¹ and now a third-generation system.² The critical difference is that initial planning decisions are made on the basis of individual breast tissue characteristics, not on what the patient or surgeon wants.

It would also be interesting to learn more about the selection of heights and projections from the matrix in the augmentation subgroup. The original 410 implant was designed as the full height, moderate projection (FM) implant because of factors related to ideal distribution of fill in the breast. The evolution of the matrix (particularly medium- or low-height

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implants) deviates from these ideal distribution of fill parameters in the augmentation patient. The authors have used different cells of implants for their cosmetic augmentation patients, and it would be interesting to know what their selection criteria were.

The authors currently report a 3 percent reoperation rate at 21 months. It will be interesting for them to report more long-term follow-up on this study group, but the early results compare favorably with the 20 percent reoperation rate from the Food and Drug Administration's Premarket Approval saline and silicone studies over the past 10 years.

Furthermore, it has always been my opinion that many implant complications were related to the person placing the implant, not to the device. Can an implant reduce complications? The authors also make an assumption that the character of the cohesive filler may produce less soft-tissue stretch in the inferior pole of the breast. This notion is interesting yet logical based on controlling the distribution of fill in the implant and breast and, as stated, will require longer term follow-up.

Similar reductions in the incidence of capsular contracture have also been seen and may be related to similar filler attributes; specifically, the increased resistance of the filler to an inwardly deforming capsule. I disagree with the authors that a reduction of capsular contracture has anything to do with less gel bleed, as gel bleed in an enhanced cohesive gel implant is the same in previous gel devices because this is a function of the contained silicone oils and shell permeability to them.

Also noted by the authors and perhaps the most beneficial potential attribute of these implants is shell fatigue. It is feasible that these implants may last much longer than all previous implant types. Furthermore, many if not all of the questions raised at the Food and Drug Administration hearings about gel implant rupture and "silent rupture" are irrelevant when form-stable enhanced cohesive devices are used.

A critical concept is that all of the previously mentioned benefits are applicable to an enhanced cohesive gel device. As the gel filler is softened (cross-linked less), the form stability of the implant is reduced and the control of the distribution of fill is nullified. Patients and

surgeons both should be educated that these potential benefits only exist for implants that fit the above criteria. The tradeoffs of an enhanced cohesive gel implant are discussed by the authors, including a slightly firmer feel than a standard gel implant and higher cost. In the end, we must all become students of implant technology and science and assess every individual implant for what its face value truly is. A "softer" implant is not necessarily better or worse depending on its benefits and tradeoffs; however, it is different from these enhanced cohesive gel devices in many ways.

The authors should be congratulated on an excellent series using the enhanced fifth-generation cohesive gel devices. It does seem that it may be about the implant after all. Using defined patient education and informed consent, objective tissue-based implant size and type selection, and precise atraumatic pocket dissection with particular emphasis on maximizing long-term soft-tissue coverage, the authors have demonstrated excellent results, with a low risk of complications and reoperations. Using these techniques and devices, patients and surgeons worldwide are obtaining superior results compared with any previous implant device.

The unique combination of benefits of this device will make it a novel and much anticipated breast implant device at the upcoming Food and Drug Administration 410 Premarket Approval hearings likely to be held in late 2005. Despite its clouded past, the future of breast implants remains bright on the horizon.

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