Nanotextured Breast Implants: Not a Solution for All Seasons

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We read with interest the paper by Montemurro et al[1] evaluating the use of nanotextured implants compared with conventional textured implants in breast augmentation. The authors report the early surgical outcomes in both groups, noting complications and possible associations with patients' characteristics. This study was undertaken when nanotextured implants were introduced, in order to assess patient outcomes and evaluate the learning curve for working with these novel devices.

The authors report their results for 415 patients with a minimum of 1-year follow-up (mean, 26.9 months). The observed complication rate is 3.5% for patients with conventional textured implants vs 8.7% for patients with nanotextured implants. Reported complications for the nanotextured implants were mostly bottoming-out (12 out of 14). These complication rates decreased with time. Whenever new devices are introduced, one must look at the data critically as outcomes may be associated with a learning curve. The authors emphasize their reduction in complication rates, which they attribute to an improvement in patient selection, rather than the acquisition of a better understanding of how nanotextured devices behave in a pocket, although a refinement in dissection technique for very tight implant pockets was also necessary to minimize inferior and lateral migration.

We applaud the authors for clearly defining the characteristics of patients that can lead to an acceptable outcome with nanotextured implants: good soft tissue elasticity (small and firm breasts) and lower intended implant volume (less than 350 cc). This inevitably means restricting the use of these implants to a smaller group of patients. The authors have shown that after defining the criteria for better patient selection when choosing a nanotextured implant, the utilization of these implants severely decreased from 54.5% in the last time period of the published series to 19% (unpublished data). This is an important finding as surgeons adapt and choose devices that they are most comfortable with and can give them the best outcomes.

Every patient who seeks breast augmentation has different goals and presenting anatomy. Decision-making in breast augmentation represents a complex pathway, with a continuous need to balance the wishes of the patient and the tissue characteristics.[2] Choosing the right indication for each type of implant can be challenging even for experienced surgeons. The message of this paper is important for all surgeons but particularly for young plastic surgeons who can benefit from this experience when balancing marketing hype with reality. Excessive marketing should not affect the decision-making process of the surgeon and bias the interest of our patients; no advertising campaign should replace the importance of data and evidence. We would also underline how the term "nanotexturization" is simply an advertising slogan: these devices are in fact microtextured according to fundamental metrology (ie, pore depths are on the micrometer (1×10^{-6} m) scale), like all texturizations available on the market.[3]

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The study by Montemurro et al shows short-term follow-up data; long-term follow-up will clearly be beneficial. The absence of randomization could determine selection bias, the absence of blinding in outcome assessment could be associated with observation bias, and the use of a new device is inevitably associated with a learning curve. However, while waiting for long-term follow-up data and studies with a higher level of evidence, this study deserves full consideration from key opinion leaders in the field of plastic surgery, breast implant manufacturers, and the entire scientific community; it represents the best available evidence for the comparison between conventional textured implants and nanotextured devices. Current available data on these implants are mostly from noncontrolled case series and non–evidence-based "consensus" among experts.[4-10]

Moreover no data comparing so-called nanotextured breast implants with smooth implants are available in the literature. It would be advisable to compare these implants in a controlled study to better understand the performance and outcome of these devices.

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REFERENCES

1. Montemurro P, Tay VKS. Transitioning from conventional textured to nanotextured breast implants: our early experience and modifications for optimal breast augmentation outcomes. *Aesthet Surg J.* 2021;41(2):189-195.
2. Nava MB, Catanuto G, Rocco N. A decision-making method for breast augmentation based on 25 years of practice. *Arch Plast Surg.* 2018;45(2):196-203.
3. Brown T, Harvie F, Stewart S. A different perspective on breast implant surface texturization and anaplastic large cell lymphoma (ALCL). *Aesthet Surg J.* 2019;39(1):56-63.
4. Huemer GM, Wenny R, Aitzetmüller MM, Duscher D. Motiva Ergonomix round SilkSurface silicone breast implants: outcome analysis of 100 primary breast augmentations over 3 years and technical considerations. *Plast Reconstr Surg.* 2018;141(6):831e-842e.
5. Sforza M, Zaccheddu R, Alleruzzo A, et al. Preliminary 3-year evaluation of experience with SilkSurface and VelvetSurface Motiva silicone breast implants: a single-center experience with 5813 consecutive breast augmentation cases. *Aesthet Surg J.* 2018;38(Suppl_2):S62-S73.
6. Sforza M, Hammond DC, Botti G, et al. Expert consensus on the use of a new bioengineered, cell-friendly, smooth surface breast implant. *Aesthet Surg J.* 2019;39(Suppl_3):S95-S102.
7. Nava MB, Rancati A, De Vita R, Catanuto G, Rocco N. Clarification about "Expert consensus on the use of a new bioengineered, cell-friendly, smooth surface breast implant". *Aesthet Surg J.* 2019;39(12):NP538-NP539.
8. Quirós MC, Bolaños MC, Fassero JJ. Six-year prospective outcomes of primary breast augmentation with nano surface implants. *Aesthet Surg J.* 2019;39(5):495-508.
9. Munhoz AM, Clemens MW, Nahabedian MY. Breast implant surfaces and their impact on current practices: where we are now and where are we going? *Plast Reconstr Surg Glob Open.* 2019;7(10):e2466.
10. Nava MB, Catanuto G, De Vita R, Rancati A, Rocco N. Comment on: Breast implant surfaces and their impact on current practices: where are we now and where are we going? *Plast Reconstr Surg Glob Open.* 2020;8(2):e2639.