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LETTER TO THE EDITOR

Comments on: The Breast Implant ARC: An Algorithm for Determining the Position of the IMF in Breast Augmentation Planning

Natasha Habr[1] · Fadel M. Chahine[2] · Bishara Atiyeh[1]

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Beekman and Beekman [1] are to be commended for their efforts to develop a so-called simplified algorithm to determine the position of the infra-mammary fold (IMF) in breast augmentation surgery. We fully agree with the authors that the surgical incision is better located at the exact position of the IMF post-augmentation which in many patients if not most needs to be lowered and anchored to the chest wall. We agree also that the NAC should be located at the breast maximal point of projection [2].

The authors have been using exclusively anatomical implants and were relying on patients' choices using external sizers to determine the implant volume to be used. Then, applying a formula to calculate the NAC-IMF distance based on ARC of the anatomical implant plus a value *X* defined as 1/3 of overlying soft tissues, they transcribe the calculated distance onto the chest wall with a skin stretching maneuver.

✉ Fadel M. Chahine
Fadel@Chahine.md

Natasha Habr
Nh117@aub.edu.lb

Bishara Atiyeh
batiyeh@terra.net.lb

[1] Division of Plastic and Reconstructive Surgery, American University of Beirut Medical Center, Beirut, Lebanon

[2] Department of Plastic Surgery, Trad Hospital Medical Center, Beirut, Lebanon

Although it is imperative to respect patient wishes, it is our duty to advise each patient about the most appropriate implant size and volume that suits her based on breast width and height measurements taking into consideration skin and soft tissues laxity and dynamics. In our opinion, external sizers may be misleading. While their use is a common, it does not necessarily translate into the desired postoperative outcome because the final result of an implant involves interactions with the soft tissue envelope and skin stretch among other parameters. It must be noted also that by the *Y*-number described by del Yerro [3], round implants are indicated for most patients, anatomical implants being reserved for few.

In fact, the purpose of augmentation mammoplasty is not "to fill out the lower pole of the breast" as stated by the authors but rather to result in an aesthetically harmonious breast shape with optimal lower- and upper-pole fullness as described by Malluci and Brandford [4] with 45/55 upper-to-lower-pole fullness ratio. Patients, however, usually require more upper-pole fullness as emphasis has been traditionally placed on upper-pole fullness to indicate attractiveness. Moreover, estimating soft tissue thickness overlying a potential implant by measuring the amount of parenchyma as shown by the authors is misleading. After inserting the implant in a dual plane as they describe, soft tissues overlying the implant will be the pectoralis major muscle and breast parenchyma while what they are measuring is only parenchyma thickness of the lower breast pole, besides considering 1/3 of this measured thickness is arbitrary and not found. As for the position of the NAC in relationship with the anatomical implant maximal point of projection, it has already been described to be located superior to this point. The authors are to be commended for describing this fact in more detail and for pointing that this relationship varies with the parenchymal thickness.

We have described a few years ago a much simpler "Preoperative Assessment Tool for the Planning of Inframammary Incision and Implant Profile in Breast Augmentation" [5]. With our method, implant footprint dimensions are determined based on breast width and height and parenchymal thickness. Then depending on skin laxity, volume fill is determined for the chosen footprint. Nipple position after augmentation is estimated by asking the patient to elevate her arms and marked on the fixed presternal skin; this acts as a point of reference to determine the new IMF position. The position of the IMF is dependent on how the implant is positioned on the chest wall; thus, it is determined by implant footprint height not by its convex anterior surface nor by its width as per the measurement systems described by Tebbets [6, 7] and Randquist [8]. For a round implant, the IMF will be at 1 radius from the determined new nipple position and 55% of implant height for anatomical implants. We have described also a dermo-fatty flap at the upper incision border that greatly facilitates IMF anchoring to the chest wall with secure skin closure [5].

Compliance with Ethical Standards

Conflict of interest The authors declare that they have no conflict of interest to disclose.

Human and Animal Rights This article does not contain any studies with human participants or animals performed by any of the authors.

Informed Consent For this type of study informed consent is not required.

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