



Controversy When Choosing the Anatomical Plane for Post Mastectomy Breast Reconstruction

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Dear Editor,

We congratulate the authors for the study entitled “Acute Postoperative Complications in Prepectoral versus Subpectoral Reconstruction following Nipple-Sparing Mastectomy” by Avila et al. (1).

The use of implants, tissue expanders, dermal matrix, and fat grafts to improve physical appearance and reduce symptoms in post-mastectomy breast reconstruction has taken great importance. Usually, there is a controversy about which plane the breast implant should be located, either pre-pectoral or subpectoral. Subpectoral positioning reduces the presence of animation deformity, contractures, pain, mobilization of the implant, or the presence of subsequent complications such as reconstructive failure (1, 2).

It should be noted that both techniques have similarities, such as approach, the preference of the surgical plane, the use of tissue expanders before the intervention, and the addition of dermal matrix to the reconstructive process. The role of external factors, namely comorbidities (Obesity, diabetes), procedures (radiotherapy, chemotherapy), smoking, and the prosthetic material, must also be considered key factors for surgical outcomes (1, 3).

Avila et al. (1) reported that although the subpectoral plane is the most common, the use of the pre-pectoral plane has achieved great popularity as this technique improves the dissection of the flap, causing less perfusion damage. It also synergies with the acellular dermal matrix for the posterior coverage of the prosthesis, which has achieved advantages such as reducing capsular contracture, animation deformity, pain reduction, and improved appearance of the upper pole of the breast. The most important aspects of achieving positive outcomes include maintaining a plane of dissection anterior to the mammary capsule, avoiding subjecting the dissection flaps to high temperatures, and limiting retraction. They also concluded that subpectoral planes presented a higher flap necrosis rate than the pre-pectoral reconstruction (1).

Caputo et al. (2) carried out a retrospective study with 94 patients submitted randomly to mastectomies with different surgical approaches with subsequent reconstruction with insertion of breast implants in the various planes. Complications and postoperative symptoms were evaluated, as well as the impact on quality of life. It was observed that the pre-pectoral approach had a beneficial effect on the patient's quality of life, sexual well-being, and aesthetic satisfaction (2).

In conclusion, the use of the subpectoral plane for implant positioning in postmastectomy reconstruction is still widely accepted. The pre-pectoral plane has brought new challenges as well as more questions about the best technique. Studies have shown that the pre-pectoral technique decreases the rate of less desired outcomes. There is an aesthetic improvement, a good impact on quality of life, and the rate of postoperative comorbidities decreases.

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References

1. Avila A, Bartholomew AJ, Sosin M, Deldar R, Griffith KF, Willey SC, et al. Acute Postoperative Complications in Prepectoral versus Subpectoral Reconstruction following Nipple-Sparing Mastectomy. *Plast Reconstr Surg* 2020; 146: 715e-720e. (PMID: 33234947) [\[Crossref\]](#)
2. Caputo GG, Zingaretti N, Kiprianidis I, Zanfisi C, Domenici L, Parodi PC, et al. Quality of Life and Early Functional Evaluation in Direct-to-Implant Breast Reconstruction After Mastectomy: A Comparative Study Between Prepectoral Versus Dual-Plane Reconstruction. *Clin Breast Cancer* 2021; 21: 344-351. (PMID: 33308993) [\[Crossref\]](#)
3. Schwartz JC. Mastectomy and Prepectoral Reconstruction in an Ambulatory Surgery Center Reduces Major Infectious Complication Rates. *Plast Reconstr Surg Glob Open* 2020; 8: e2960. (PMID: 32802654) [\[Crossref\]](#)