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Breast

# Not Just a Linear Closure: Aesthetic Flat Closure after Mastectomy

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**Summary:** Currently, there is an increasing trend in women seeking aesthetic flat closure after mastectomy. To date, there is no plastic surgery literature on specific techniques to achieve an aesthetic flat closure after mastectomy. As plastic surgeons, we need to continue to innovate and to iterate new surgical techniques in our reconstructive armamentarium to address the desires of and to optimize the outcomes for our reconstructive breast surgery patients. Herein, we seek to delineate key considerations and employed techniques for reconstructive plastic surgeons performing aesthetic flat closure after mastectomy. Namely, it is crucial to listen to the patient, and to fully understand the patient's concerns, wishes, and particular aesthetic desired. From a technical perspective, the key surgical pearls include completely obliterating the inframammary fold, ensuring the same size and flap thickness bilaterally, appropriately de-fatting medially on the chest wall to allow for a smooth contour, obviating any presence of dog ears medially or laterally with precise tissue excision, and confirming that the incisions are entirely symmetric bilaterally. Intraoperatively, it is important to sit these patients up to assess soft tissue re-draping, and to confirm that there are no dog ears nor any excess tissue that could compromise the perfectly flat aesthetic chest closure. With the increasing demand for flat closures after mastectomy, plastic surgeons need to be keen on employing modified surgical techniques to best optimize the desired aesthetic flat closure reconstructions for these patients, as these reconstructions are not simply linear closures. *(Plast Reconstr Surg Glob Open 2022;10:e4327; doi: 10.1097/GOX.0000000000004327; Published online 18 May 2022.)*

## INTRODUCTION

Currently, there is an increasing trend in women seeking aesthetic flat closure after mastectomy. In fact, the National Cancer Institute officially added "aesthetic flat closure" to their dictionary of cancer terminology.[1] Recently, Baker et al surveyed their subset of patients who sought no traditional breast reconstruction following mastectomy, instead opting for "going flat," and reported that 74% of their survey respondents were happy with their decision.[2,3] Interestingly, Baker et al identified that up to 22% of women experienced "flat denial," which meant that they were not offered the reconstructive option for a flat closure, not supported in their decision to pursue a flat closure, or did not undergo the agreed-upon surgical procedure and were left with excess skin when the desire to go flat was expressed to the surgeon.[2,3] However, despite the patient demand for this procedure, there is a paucity of literature on addressing technical aspects of the aesthetic flat closure after mastectomy.[4] To date, there is no plastic surgery literature on specific techniques to achieve an aesthetic flat closure after mastectomy. As plastic surgeons, we need to continue to innovate and to iterate new surgical techniques in our reconstructive armamentarium to address the desires of and to optimize the outcomes for our reconstructive breast surgery patients. Herein, we seek to delineate key considerations and employed techniques for reconstructive plastic surgeons performing aesthetic flat closure after mastectomy, as it is not simply a linear closure.

## SURGICAL TECHNIQUE

Preoperatively, the patients are approached with attentive listening to their reconstructive goals, and to what *they envision* as a successful "flat" closure result. In our experience, for patients that have previously undergone mastectomy surgeries and are now seeking revision surgery, these prior mastectomies have predominantly resulted in either

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*Received for publication September 28, 2021; accepted March 30, 2022.*

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DOI: 10.1097/GOX.0000000000004327

**Disclosure:** *The authors have no financial interest to declare in relation to the content of this article.*

excess tissue in the lower poles of the breast or medially on the chest wall. The best revision procedures utilize bilateral breast flap advancements and judicious tissue excision. The reconstructive surgeon should be behooved to design an excision that will allow for an appropriate resection of the excess lower pole tissue, while balancing the need to close the wound by advancing the upper flap inferiorly to achieve a desired tight, flat closure (Fig. 1). It is of utmost importance that the final incisions are symmetric bilaterally. Additionally, given the recent interest in aesthetic flat closure, this procedure detailed below can be performed at the time of initial mastectomy as well in conjunction with the breast surgeons using the same enumerated technique below. The only modification is that the markings are made preoperatively by the plastic surgeon for the breast surgeon's mastectomy incision to optimize the subsequent aesthetic flat reconstruction outcome.

Intraoperatively, the surgical areas should be carefully marked, and then injected with 0.5% lidocaine with 1:200,000 epinephrine solution. The old mastectomy incisions can be opened bilaterally with 10-blades using the marked excision. The inferior flap should be elevated to the inframammary fold with careful attention to fully obliterate the inframammary fold by cauterizing below the inframammary fold. Because the inframammary fold should be obliterated, a final scar in the inframammary fold may risk the appearance of a persistent inframammary fold with scar healing, or an aesthetically displeasing result that is too low on the chest wall (Fig. 2). Additionally, the superior mastectomy flap should be mobilized extensively to provide for proper rotation. The thickness of the upper and lower breast flaps should be equal. Importantly, the surgeon should be very cognizant of the presence of bilateral medial dog ears as well as excess lateral tissue in the lower flaps, as these two aspects of the closure can be particularly disconcerting to patients, and often viewed as chest wall deformities. A crucial component of the technique is thoughtful medial de-fatting on the chest wall to facilitate a smooth contour to the closure (Fig. 3). In certain circumstances and with appropriate preoperative discussion, the best option to mitigate the presence of any dog ears can be a single excision with the incision from mid-axillary line to mid-axillary line utilized to provide a completely flat closure.

### Takeaways

**Question:** What are the surgical maneuvers to employ to optimize the outcomes for reconstructive breast surgery patients desiring an aesthetic flat closure?

**Findings:** The key surgical pearls are to completely obliterate the inframammary fold, ensure the same size flap thickness bilaterally, appropriately de-fat medially on the chest wall to allow for a smooth contour, and obviate any dog ears with precise tissue excision.

**Meaning:** With the increasing demand for flat closures after mastectomy, plastic surgeons need to utilize modified surgical techniques for aesthetic flat closure reconstructions, as these are not simply linear closures.

Notably, a key intraoperative maneuver when performing these aesthetic flat closures is to sit the patient up on the operating room table to assess how the soft tissues redrape when in a standing position. The plastic surgeon should be prepared to use staples to temporarily close, and to sit the patient up multiple times in the operating room until the proposed closure is entirely flat and linear.

Regarding details for the closure, drains are essential. Following meticulous hemostasis, either 19-French or 15-French Blake drains are placed through lateral stab wounds in each side of the chest, and sutured with 2-0 nylon. For our chest wall closures, buried 2-0 Vicryl sutures are used in the deep tissues, followed by buried 2-0 Vicryl sutures in the dermis, and finally a running intradermal 3-0 Monocryl in the skin. For dressings, our preference is for Steri strips along the incision followed by Telfa and

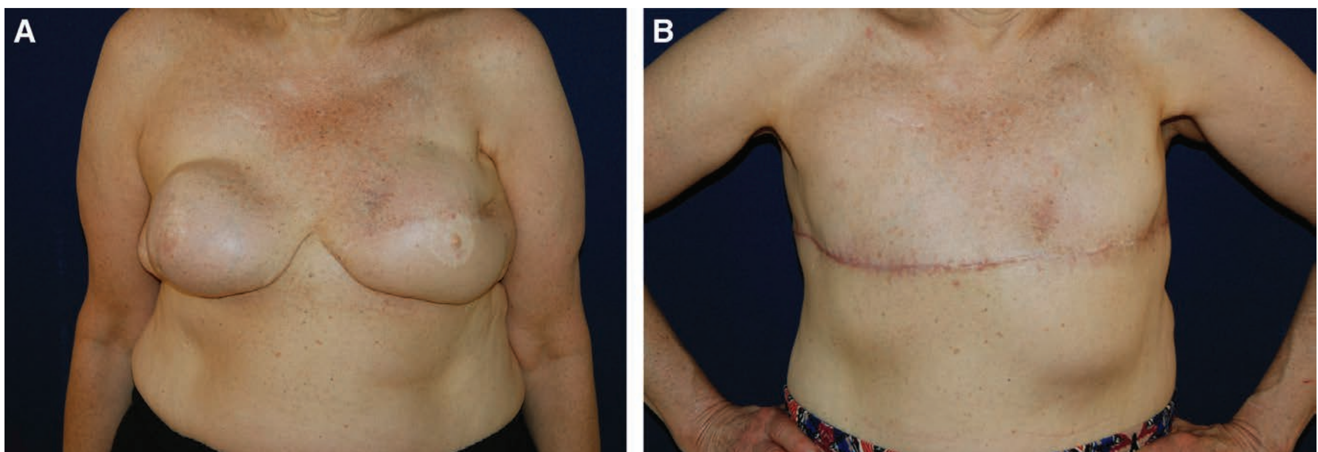


**Fig. 1.** This is a 59-year-old female patient (BMI 28) who has a history of left breast cancer and BRCA mutation s/p 16 prior operations on both breasts for breast reconstruction, shown preoperatively (A). Notably, the patient has been treated with bilateral mastectomies and left breast radiation, and had severe capsular contracture on the right breast. The patient was seeking implant removal, and an aesthetic flat closure. B, The same patient pictured at her 2-month postoperative follow-up after bilateral mastectomy with aesthetic flat closure by the senior author, N.K.

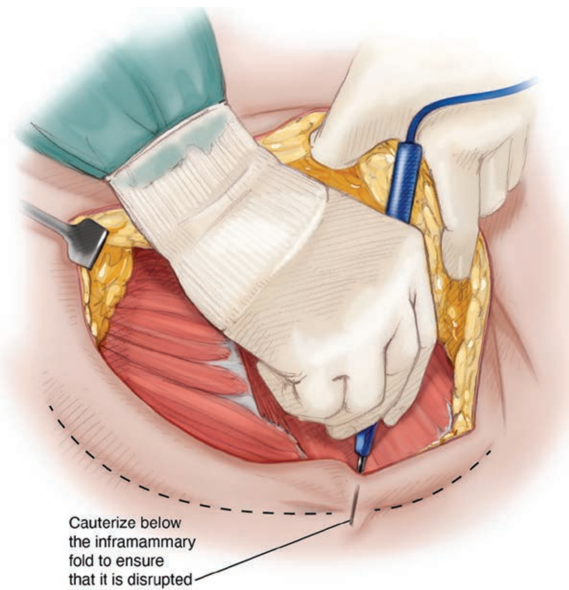


**Fig. 2.** This illustration depicts how the inferior flap should be elevated to the inframammary fold with careful attention to fully obliterate the inframammary fold by cauterizing below the inframammary fold.

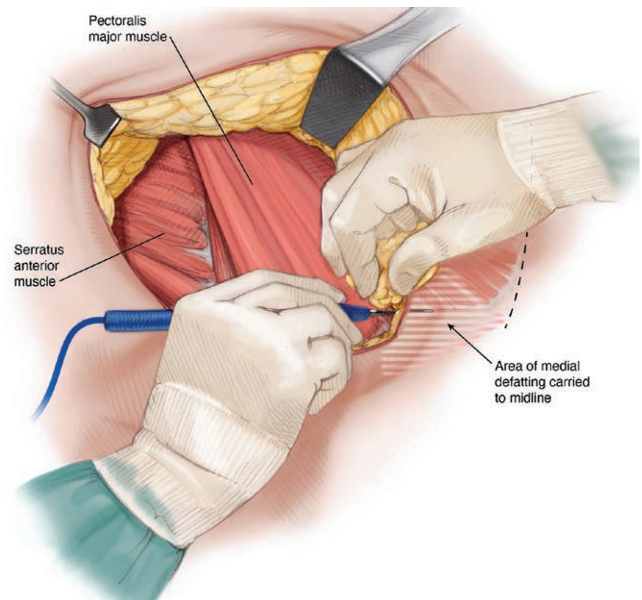


**Fig. 3.** A crucial component of the technique is thoughtful medial de-fatting on the chest wall to facilitate a smooth contour to the closure, as demonstrated in this illustration.

Tegaderm for revision procedures, and for bacitracin followed by Telfa and Tegaderm if the aesthetic flat closure is at the time of index mastectomy.

Moreover, to optimize the aesthetic outcomes in obese patients, the following maneuvers are advised: (1) judicious lateral de-fatting is necessary to mitigate dog ears, specifically, aggressive lateral fat direct excision can be performed while ensuring that the flaps are not too thin; (2) axillary liposuction can be utilized to contour the lateral chest wall to provide smooth definition to the final flat chest closure; (3) tailor tacking is key in these patients in order to ensure that there is no lateral dog ear, and to obviate the need to extend the lateral chest incisions onto the back, which is aesthetically displeasing to patients.

## SURGICAL PEARLS

First and foremost, it is crucial to listen to the patient, and to fully understand the patient's concerns, wishes, and particular aesthetic desired. From a technical perspective, the key surgical pearls include completely obliterating the inframammary fold, ensuring the same size and flap thickness bilaterally, appropriately de-fatting medially on the chest wall to allow for a smooth contour, obviating any presence of dog ears medially or laterally with precise tissue excision, and confirming that the incisions are entirely symmetric bilaterally. Intraoperatively, it is important to sit these patients up to assess soft tissue re-draping, and to confirm that there are no dog ears nor any excess tissue that could compromise the perfectly flat aesthetic chest closure.

## CONCLUSION

With the increasing demand for flat closures after mastectomy, plastic surgeons need to be keen on employing modified surgical techniques to best optimize the desired aesthetic flat closure reconstructions for these patients, as these reconstructions are not simply linear closures.

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