

Safely Shaping the Breast After Implant Removal and Total Intact Capsulectomy Using the Mammary Imbrication Lift and Fixation Technique

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Abstract

Background: Implant-based breast augmentation is one of the most popular plastic surgery procedures performed worldwide. As the number of patients who have breast implants continues to rise, so does the number of those who request breast implant removal without replacement. There is little in the current scientific literature describing total intact capsulectomy and simultaneous mastopexy procedures.

Objectives: Here, the authors present their current method using the mammary imbrication lift and fixation technique after explant and total capsulectomy.

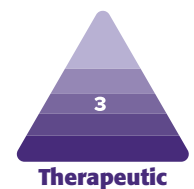
Methods: Between 2016 and 2021, a total of 64 patients (mean age: 42.95 years; range, 27-78 years) underwent the described mammary imbrication lift and fixation technique with bilateral breast implant removal and total capsulectomy.

Results: Mean follow-up was 6.5 months (range, 1-36 months). Postoperative complications included minor cellulitis in 1 patient (1.6%), late onset hematoma with infection in 1 patient (1.6%), fat necrosis and pulmonary embolism in 1 patient with prior history of thromboembolic events (1.6%), and breast scar irregularity in 4 patients (6.2%) who required subsequent minor scar revision or steroid injections. Two patients (1.6%) underwent revision surgery with bilateral breast fat grafting to improve shape and add volume.

Conclusions: The mammary imbrication lift and fixation technique described here can safely and simultaneously be performed with a total intact capsulectomy and explant procedure. This technique avoids wide undermining, intentionally opening the capsule, performing subtotal capsulectomy, and preserving blood supply to the breast tissue and nipple with low complication rates.

Level of Evidence: 3

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Implant-based breast augmentation was the second most popular cosmetic procedure performed by members of the American Society of Aesthetic Plastic Surgery in

2021, according to the National Plastic Surgery Statistics.¹ More than 1,800,000 breast augmentations were reported worldwide in 2018 by the International Society of Aesthetic

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Plastic Surgery.² Although breast augmentation has high percentages of patient satisfaction,³⁻⁵ breast implants are associated with a significant rate of local complications requiring reoperation.⁶ An estimated 20% of patients develop problems or complications related to the procedure, including capsular contracture, rippling and wrinkling, implant displacement, asymmetry, late hematomas, and neoplasm.⁷ Since the discovery of breast implant-associated anaplastic large cell lymphoma (BIA-ALCL) in 1997,⁸ there has been more significant media exposure and a greater public awareness. One recent survey demonstrated that 66.7% of patients with breast implants reported concerns regarding BIA-ALCL and 35% strongly considered removing their implants due to this.⁹ Silicone gel breast prosthesis rupture rates have been reported between 8.7% and 24.2% at 10 years.^{10,11} Increased patient communication and advocacy through social media groups has led to an increasing number of patients presenting to plastic surgeons with implant-related systemic illness, now labeled as “breast implant illness” (BII).^{12,13}

According to the American Society of Plastic Surgeons 2019 Plastic Surgery Statistics Report, breast implant removal among breast augmentation patients is up 15% from 2018. Surgeons reported 33,764 breast implant removals among breast augmentation patients in this survey.¹⁴ The growth of social media has become a well-known and documented initial source of education for patients seeking eventual surgical consultations.¹⁵ Anecdotally, the senior author has seen an ever-increasing number of such patients requesting implant removal specifically total intact capsulectomy, or what social media groups often refer to as an “en bloc” capsulectomy. Over the past several years, more patients specifically requested this procedure for a number of reasons, including having calcified Baker Grade IV capsular contractures, silicone implant ruptures, recently recalled textured breast prosthesis, and concerns for BIA-ALCL and BII. Breast implant removal, or explant, often leaves the breast with a deflated area of central hollowing, significant subsequent breast and skin laxity, loss of projection, loss of conical shape, and proportional excess in the lateral breast. Breast implant explantation alone places the patient at significant risk for resultant breast skin excess with rippling and nipple inversion, as the pocket collapses down to the chest wall. Total capsulectomy with explantation likely increases the risk of these deformities, as more soft tissue is inevitably removed with the implant. Total capsulectomy of submuscular implants requires more dissection and reasonably would present greater risk for pneumothorax, muscle edge bleeding, and injury to deep vascular structures including the thoraco-acromial and subclavian arteries. Past publications have described various mastopexy and auto-augmentation techniques to minimize complications, improve breast aesthetics, and correct the soft-tissue deflation expected after

breast implant explantation.¹⁶⁻²² The techniques described in these publications all utilize wider undermining and/or subtotal or piecemeal capsulectomy techniques for submuscular breast implant removal. Unfortunately, there is a paucity of information published in the scientific literature on treating breast explantation patients with a total intact capsulectomy, including technical maneuvers to minimize subsequent deformity risk. The following describes a reproducible, simple and safe series of steps that allows total and often intact capsulectomy through a large optical window, as well as, subsequent breast shaping with a mammary imbrication lift and fixation technique utilizing all absorbable suture material. This is intended to help treat patients who have decided to “quit breast implants.”

METHODS

A retrospective review was conducted of 64 consecutive patients treated by the senior author from 2016 to 2021. Patient data were deidentified, and thus, no patient consent was necessary for the use and analysis of their data. The mean age of the patients treated was 42.95 years (range, 27-78 years). All 64 patients underwent breast implant explantation with total capsulectomy and mastopexy, utilizing the mammary imbrication lift and fixation technique for shaping. Submuscular implants were present in 57 patients (89%) prior to surgery. Implant type was found to be silicone in 66% of patients and saline 34% of patients. Subglandular implants were noted in 7 patients (11%). A total of 128 breast implants were removed from 64 patients with total capsulectomy and an attempted intact procedure prior to the mammary imbrication lift and fixation technique. The size of the breast implants removed ranged from 175 to 800 cc (average 360.66 cc). Volume could not be determined for 2 implants placed over 30 years ago, due to rupture and loss of old medical records (Table 1). No patients were smokers.

The indications for surgery included the desire to not have breast implants anymore and smaller breasts in 18 patients (28.1%), breast implant associated pain in 56 patients (87.5%), deformity and firm capsular contracture in 48 patients (75%), implant rupture in 11 patients (17.2%), recurrent seroma in 8 patients (12.5%), implant malposition or rippling in 25 patients (39%), and symptoms or fear of acquiring BII in 47 patients (73.4%; Table 2). Ten patients (15.6%) had simultaneous fat grafting to the breasts performed during the same surgery.

Operative Technique

Markings are performed with the patient awake and standing straight in the upright position with arms at the sides. The chest midline, current inframammary fold, and breast

Table 1. Patient Demographics

Demographics	N
No. of patients (number of breasts)	64 (128)
Age (range)	42.95 (27–78)
Submuscular implant (%)	57 (89%)
Subglandular implant (%)	7 (11%)
Breast implant size (cc) (range)	360.66 cc [175–800 cc]

meridian are marked first. A line is drawn from the bottom of each current inframammary fold across the inferior sternum and xiphoid region. For patients with breast implants that have severely bottomed out onto the abdominal wall, a cephalic implant displacement is performed to determine the intended inframammary fold and this is marked instead. If a patient has a pre-existing scar in or below the current inframammary fold, an attempt to excise or raise this scar may be made. Still, this can be difficult and in these situations, the patient should be fully consulted prior to surgery regarding the high risk of a visible scar below their fold and bra–bikini line. The cephalic apex of the new areola position is determined by lifting the areola up to the desired location on the breast meridian and marking the apex, as prior described by Dennis C. Hammond while performing a circumvertical skin mastopexy.²³ Also a “Hammond Plumb Line” is often dropped using a level tape measure along the apex of both planned peri-areolar incisions. This is checked with the patient standing straight and the tape measure used to mark a line that parallels the inframammary fold. This intended new areola apex line lies approximately 5 to 6 cm above and parallel to the intended inframammary fold. The patient is then marked as a vertical scar mastopexy with an “inverted-T” extension. The inferior-most aspect of the planned incision is typically at least 2 to 3 cm above the pre-explant inframammary fold. Sometimes, this must be made significantly higher with bottoming out, as the risk of scars falling onto the abdomen below the bra–bikini line is higher. Any prior breast-fold scars are taken into account, and excision with elevation is typically indicated. As many patients typically demonstrate great concern for visible scars while wearing swim suits, or a low plunging dress, the medial and lateral limits of the inverted-T extension and the potential visibility are taken into account. To do this, a line is dropped vertically at the medial and lateral most aspects of the intended inframammary fold, where it appears that the fold is of adequate depth and the subsequent scar will still be well hidden and covered by a bra or an open dress (Figure 1). The inverted-T extension skin-fold takeout can be adjusted

Table 2. Surgery Indications

Indication for surgery	N (%)
Desire for implant removal/smaller breasts	18 (28.1%)
Breast implant–associated pain	56 (87.5%)
Deformity and firm capsular contracture	48 (75%)
Implant rupture	11 (17.2%)
Recurrent seroma	8 (12.5%)
Implant malposition or rippling	25 (39%)
Symptoms or fear of breast implant illness	47 (73.4%)

and chased up to this point intraop, but does not extend past it. If the patient already has a wide pre-explant anchor scar, the scar excision is planned with the slightest extension possible. All efforts should be made to avoid scars encroaching toward the sternum. Avoiding dog ears but allowing some bunching and scalloping of closure at the breast-fold meridian seems to be a better compromise with less long-term visibility and easier secondary correction, if needed.

All patients received perioperative antibiotics with surgery performed under general anesthesia. If circumferential fat harvest and grafting are to be performed, prone to supine positioning is used and the fat is harvested prior to breast surgery. Patients are then positioned supine and arms are well padded and secured to arm boards.

The areola are then cookie cutter stamped, scored, and de-epithelialized for approximately 5 mm circumferentially around. A vertical score is then made from the inferior areola incision down to the level of the anticipated breast-fold rise. The inverted-T extension is then started, but not fully extended to the anticipated length in an effort to keep the final scar shorter (Figure 2). The vertical score is then de-epithelialized approximately 5 mm medial and lateral. Once an adequate “cuff of dermis” is achieved, further de-epithelialization is then delayed until implant removal and the full extent of the skin laxity is better appreciated. Every effort is made to preserve the dermis layer for both vascularity and future suture purchase strength. Needle-tip cautery dissection is then guided by head-lamp illumination and smoke evacuation through the often thin breast gland tissue to the anterior implant capsule. The gland is divided the entire length of the initial incision inferior to the areola, along the midline of the vertical incision and along the short inverted-T-fold extensions. Through this large optical window, a total capsulectomy is performed with the breast implant inside. An effort is made to remove the entire capsule with total complete intact capsulectomy. Through the larger optical window allowed with a mastopexy, this can be performed intact the vast majority of the time. In cases where patients have had many prior

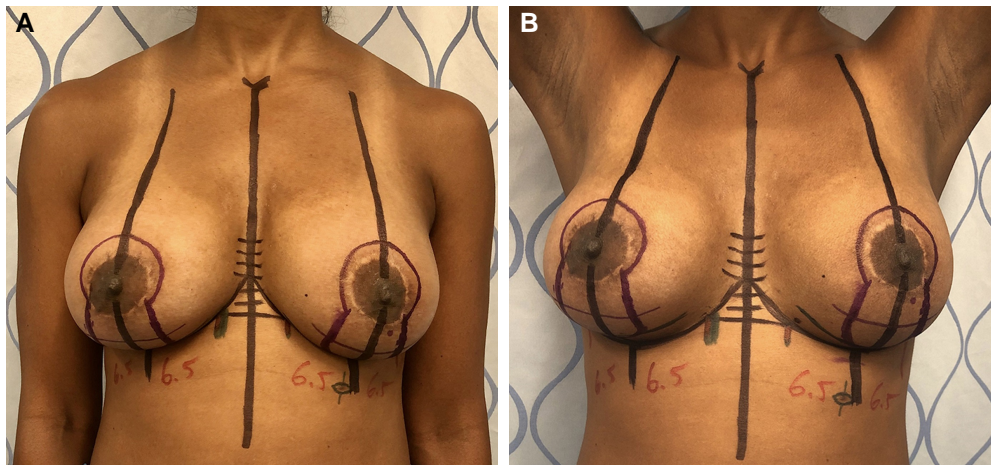


Figure 1. A 44-year-old female patient marked for planned total intact capsulectomy and mammary imbrication lift and fixation technique (A) with arms at side and (B) arms raised. Notice the transverse line on the lower pole of each breast estimates the new fold position. The vertical lines 6.5 cm medial to the breast meridian, mark the limitation of the planned fold scar determined intraoperative.

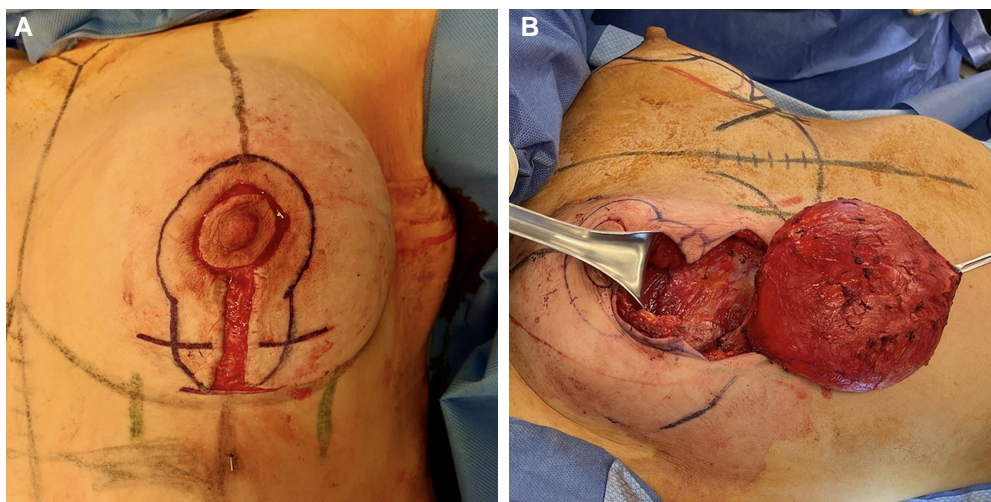


Figure 2. In this 41-year-old female patient, an (A) Inverted-T extension is initially scored, but the limitations of the fold extensions are left to be determined after explant and then (B) the inferior vertical incision with initial short fold extension is made.

submuscular breast surgeries, adherent capsule formation to the underlying intercostal muscles and overlying subclavian artery tributaries should be taken into account. The fold scar can be extended to improve the optical window and maintain safety in the submuscular plane. This inferior approach with adequate visibility may also help preserve the blood supply to the nipple-areola complex in thin patients with multiple prior surgeries.

If dissection still appears dangerous and an excessive risk for pneumothorax or vascular injury, the capsule is opened and the implant removed with total capsulectomy completed in this way. This is usually not necessary though with the vast majority of cases. The superior capsule dissection often seems easier with the implant in place and

the capsule intact. Preop MRI study to rule out intracapsular rupture with silicone implants is recommended and may help with guidance in this matter. After total capsulectomy, implants and capsules are handed off to the back table. As occult silicone implant rupture can be present, even despite a negative preop MRI, intact capsules are left to be opened after all wounds are closed.

Once total capsulectomy is performed, hemostasis is ensured with a long tip spatula cautery, head lamp, and smoke evacuation system. The patient is then sat upright 90° and tailor tacked along the prior marked inverted T with the initial emphasis on the planned vertical plication. This tailor tacking intraop allows tightening and adjustments to be made for better symmetry prior to final skin excision. This allows

fluidity and the ability to compensate and adapt after often unexpected changes are better realized with implant removal. As often implant size and prior operative reports cannot be obtained before surgery, unexpected asymmetry and dynamic breast shape change is typical with breast explant surgery. For this reason, much of the final markings and the amount of skin to be excised are determined in the operating room after implant removal.

Once the bilateral tailor tacked breast shape is determined to be acceptable, the patient and operating room table are returned to the flat position. Tailor tack staple lines are marked and hashed. Staples are removed and de-epithelialization of the marked region is then performed. In order to facilitate the de-epithelialization of the subsequent lax and explanted breast soft-tissue envelope, a sterile saline-filled breast implant sizer is placed into the cavity and inflated prior. A saline sizer of similar volume or slightly larger volume than the removed implants is ideal (Figure 3). This allows for greater resistance during epidermis removal and better preservation of the underlying vascular dermis. Dermis preservation is not only ideal during this procedure to optimize blood supply, but also provides much-appreciated future suture purchase strength. The temporary saline sizer used as described facilitates de-epithelialization similar to breast tourniquet compression during a breast reduction.

Once de-epithelialization is complete, saline sizers are removed. Dilute long-acting local anesthetic is injected to block intercostal nerve branches. If fat grafting is planned and the patient has had a subglandular explant, fat transfer is now performed by injecting into the pectoralis major with a blunt 14 gauge cannula under direct visualization. If the patient had submuscular implants, adequate soft-tissue thickness below the nipple-areola complex, and a relatively thick and intact pectoralis major muscle, then the muscle was repaired. To do this, the pectoralis muscle is separated from the overlying breast gland for several centimeters. The leading muscle edge is then sutured back down to the chest wall with 2-0 Vicryl (Ethicon, Inc., Somerville, NJ). If the soft-tissue envelope is very thin below the nipple-areola complex, or the muscle has been significantly damaged during prior surgery, the muscle is left in position in order to avoid the risk of vascular embarrassment. If further fat transfer is planned, and there is an adequate soft-tissue envelope to do so, it is performed prior to final closure as will be described. Hemostasis is again confirmed and drains are placed bilateral. Of note, quilting sutures to the posterior pocket are not typically used during this procedure. If utilized, care must be taken in order to avoid any puckering of sometimes thin overlying superficial tissues. Closed suction drains are always utilized to help collapse the pocket. Closure is started with a key suture or temporary staple at the inverted-T junction. Mammary imbrication lift and fixation is then achieved by plicating the de-epithelialized dermis and deep gland with a series

of buried interrupted 2-0 polydioxanone suture (PDS; Ethicon, Inc.) imbrication sutures. These sutures are placed initially to close the mastotomy deep gland opening, and then placed in a series of wider vertical rows of imbrication until the optimal shape is achieved and the vertical scar epithelial edges are in close approximation (Figure 4). Once the vertical wound edges are in close approximation and the breast shape is obtained, the breast-fold component of the wound is then closed over the drain using 2-0 PDS suture (Ethicon, Inc.) again for deeper imbrication. Superficial dermal closure of the inverted T is completed with 3-0 Monocryl (Ethicon, Inc.) suture.

The de-epithelialized areola aperture is then marked with a wagon wheel pattern using 8 cardinal points. An interlocking PDS purse-string suture is then used to cinch down the areola aperture and compensate for the wider outer de-epithelialized circumference. This is performed in a similar manner to that described by Hammond with the interlocking Gore-Tex (W. L. Gore and Associates, Flagstaff, AZ) suture, except that a long-term absorbable 2-0 PDS suture is substituted for the permanent Gore-tex (Figure 5).^{23,24} Though the permanent Gore-tex suture is considered superior in preventing areola stretching and spread, all patients in this series were given the option and favored the use of an absorbable suture material instead. PDS was chosen to substitute due to its long-term absorption and extended wound support. Additionally, no further undermining is usually performed as many patients have relatively thin tissues below the nipple-areola complex. After the interlocking PDS purse-string suture is placed, the patient is then sat upright again. The areola circumference is then stamped for symmetry and position with an inked cookie cutter. The patient is then returned to the supine position and final areola edge de-epithelialization, and inset with absorbable suture material is completed. If further fat grafting is to be performed, this is now done with injection into both muscle and breast tissue layers. Blunt 14 gauge fat transfer cannulae are inserted between the deep dermal sutures prior to subcuticular closure with the drain on suction. After final skin closure, all incisions are covered with skin adhesive, surgical tapes, and a gentle compressive bra.

All capsules are sent for pathology. Any clinically suspicious seroma fluid within the capsule is sent for microbiology, and cytology if of significant volume. Larger seromas are sent for US-guided aspiration prior to surgery in order to rule out malignancy. Drains are typically removed at 1 week postop, or when drain output is <25 cc per day.

RESULTS

The mean age of the patients treated was 42.95 years (range, 27-78 years). All 64 patients underwent breast implant explantation with total capsulectomy and mastopexy utilizing the mammary imbrication lift and fixation technique

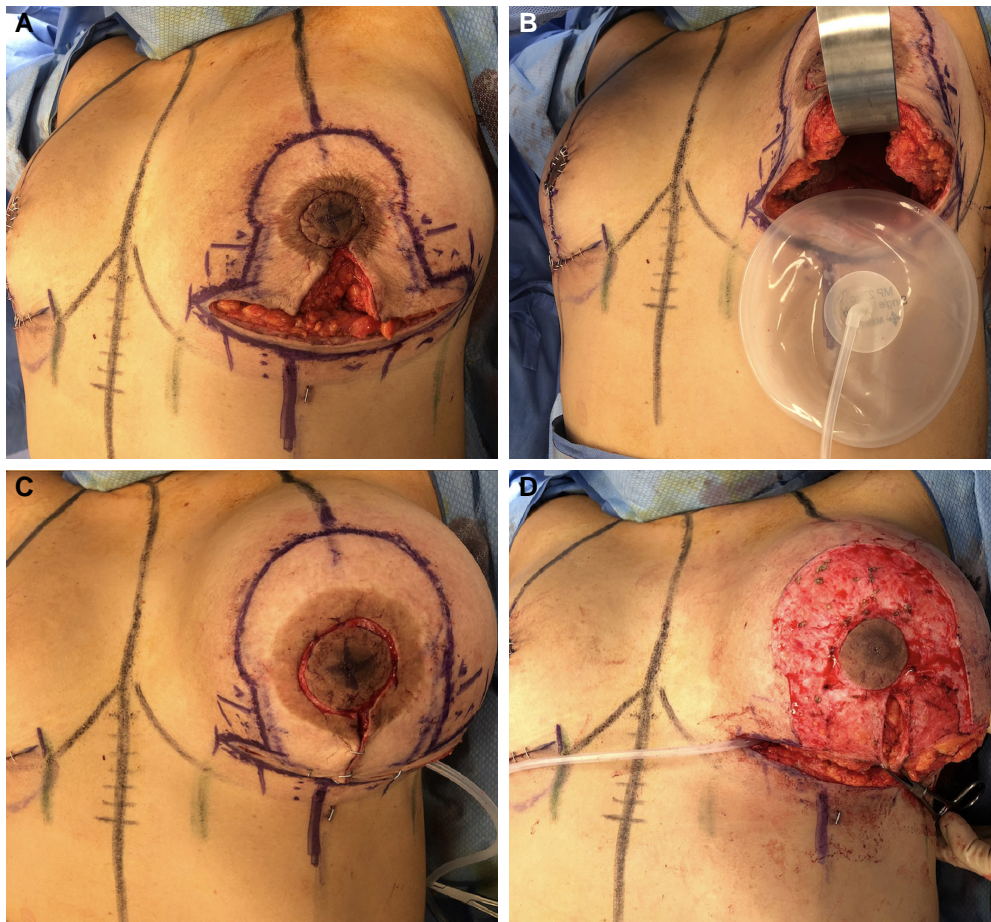


Figure 3. A 29-year-old female patient is (A) marked for de-epithelialization after explant is completed, (B) a breast implant saline sizer is placed into the pocket, (C) the saline breast implant sizer is inflated to help create tension on the otherwise lax postexplant breast skin, and (D) the sizer is removed.

for shaping. Submuscular implants were present in 57 patients (89%) prior to surgery. Implant type was found to be silicone in 66% of patients and saline 34% of patients. Subglandular implants were noted in 7 patients (11%). A total 128 breast implants were removed from 64 patients with total capsulectomy and an attempted intact procedure prior to the mammary imbrication lift and fixation technique. The size of the breast implants removed ranged from 175 to 800 cc (average 360.66 cc). Volume could not be determined for 2 implants placed over 30 years ago, due to rupture and loss of old medical records (Table 1). No patients were smokers.

The indications for surgery included the desire to not have breast implants anymore and smaller breasts in 18 patients (28.1%), breast implant–associated pain in 56 patients (87.5%), deformity and firm capsular contracture in 48 patients (75%), implant rupture in 11 patients (17.2%), recurrent seroma in 8 patients (12.5%), implant malposition or rippling in 25 patients (39%), and symptoms or fear of acquiring BII in 47 patients (73.4%; Table 2). Ten patients

(15.6%) had simultaneous fat grafting to the breasts performed during the same surgery.

Mean follow-up was 6.5 months (range, 1-36 months). Postoperative complications included minor cellulitis in 1 patient (1.6%), late onset hematoma with infection in 1 patient (1.6%), fat necrosis and pulmonary embolism in 1 patient with a prior history of thromboembolic events (1.6%), and breast scar irregularity in 4 patients (6.2%) who required subsequent minor scar revision or steroid injections. Two patients (1.6%) underwent revision surgery with bilateral breast fat grafting to improve shape and add volume (Table 3). Representative cases of patients who underwent the mammary imbrication lift and fixation technique are shown (Figures 6-8).

DISCUSSION

Today, an increasing number of patients present themselves to the plastic surgeon for breast explant surgery.

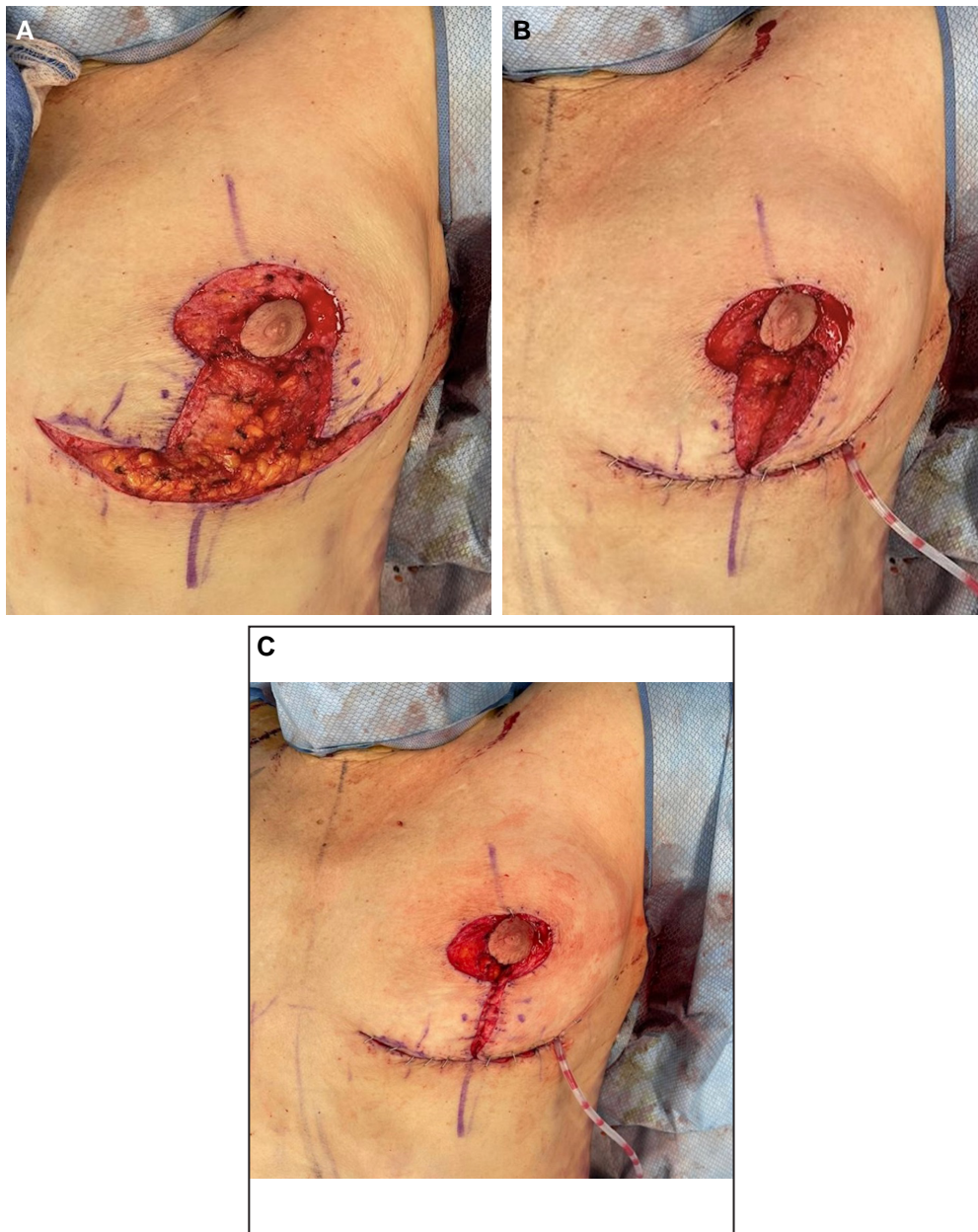


Figure 4. In this 66-year-old female patient, (A) after de-epithelialization, the breast is ready for mammary imbrication. (B) A drain is placed into the pocket and a key suture is placed at the T-junction. Temporary staples help align fold closure and avoid dog ears. (C) Mammary imbrication of the vertical wound has been achieved using buried absorbable sutures in a series of wider vertical rows.

A large percentage of these patients also request or may be indicated for a simultaneous capsulectomy procedure. Total intact capsulectomy has been a well-accepted and recommended treatment with a prior diagnosis of BIA-ALCL.²⁵ Other indications for total capsulectomy and total intact capsulectomy, such as implant rupture, capsular contracture, BII, and connective tissue disease, are controversial and are the subject of debate. Currently, there is little evidence-based medicine to guide the surgeon, as large

data and higher level evidence are limited.^{22,26} Glicksman et al showed in their recent study that the type of capsulectomy: intact total, total, or partial all showed a similar and statistically significant improvement in patients with BII symptoms.²⁷ Explant patients, especially those who are concerned for BII, often request an intact capsulectomy or an en bloc procedure regardless of the evidence-based medicine presented and awareness of increased operative time and potential risk. Concerns for occult rupture and

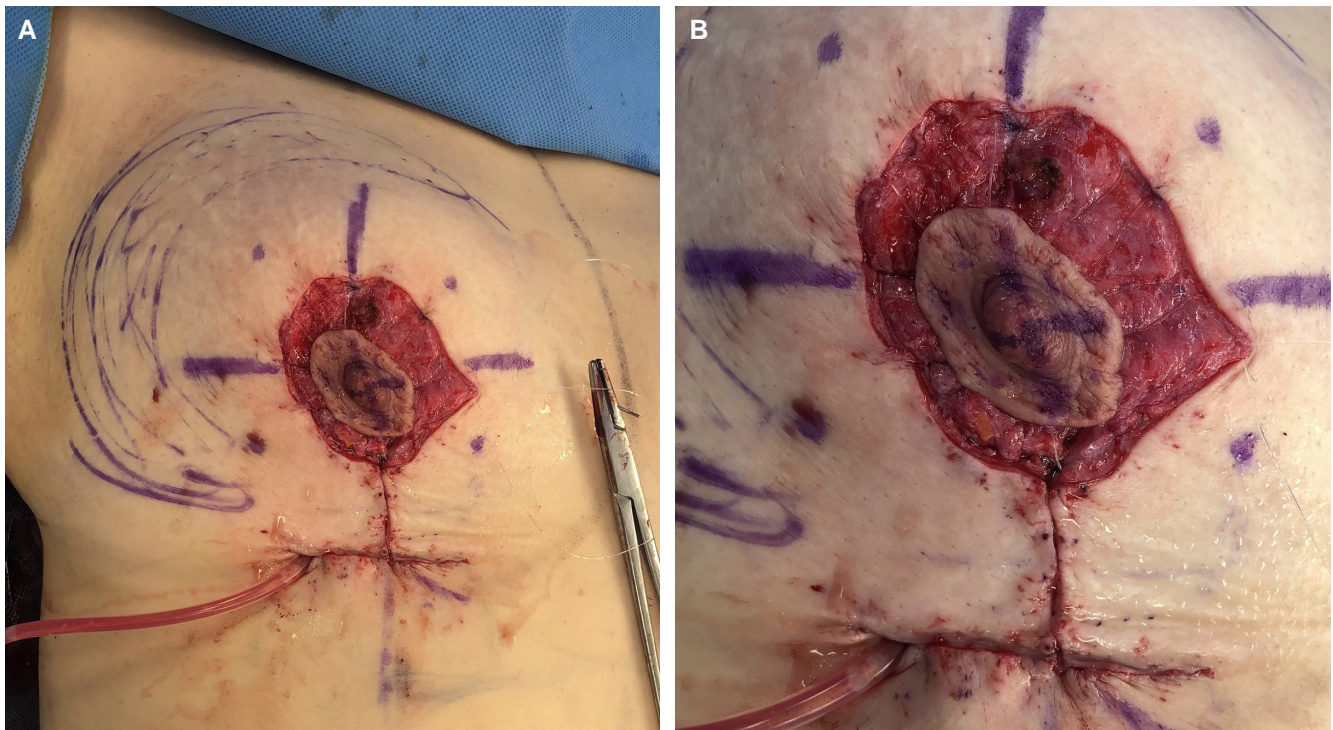


Figure 5. In this 41-year-old female patient, (A) an interlocking polydioxanone suture (PDS) purse-string suture has been placed but not yet cinched and tied. (B) Identical interlocking PDS purse-string suture placed with image magnified to help visualize.

Table 3. Complications

Complications	N (%)
Minor cellulitis	1 (1.6%)
Late onset hematoma with infection	1 (1.6%)
Fat necrosis and pulmonary embolism	1 (1.6%)
Breast scar irregularity	4 (6.2%)
Revision surgery scar revision with bilateral fat grafting	2 (3.2%)

retained silicone, persistent palpable calcified capsule, fear of BIA-ALCL, and the recent FDA safety updates on rare cases of capsular squamous cell carcinoma all may add fuel to the fire regarding patient anxiety during explant consultations. It is important to educate patients on all of this as part of informed consent when the risks and benefits of all options are being discussed.

Once the decision to perform an explant with capsulectomy and breast lift is determined, the mammary imbrication lift and fixation technique afford the surgeon several advantages. The mammary imbrication lift and fixation technique avoids the use of creating more widely undermined dermoglandular flaps as described by many other authors.^{17-20,22} Dermoglandular flaps can be helpful in breast surgery. Flaps can help recruit and rotate tissue

into areas of desired fullness. Dermoglandular flaps can also take tension and provide support to the superficial skin. Elevating widely undermined dermoglandular flaps in patients with thin tissue, large implants, multiple prior breast implant surgeries, and unknown nipple areolar blood supply can potentially be of greater risk for vascular embarrassment. Pedicled flap elevation requires much greater undermining and elevation of tissues than that described here with the mammary imbrication lift and fixation technique. Using this technique, further undermining is limited to only a few centimeters for muscle repair. With extremely thin patients who may have damaged pectoralis major muscle or a questionable blood supply, the muscle repair is not performed in order to further minimize risk. Many of the prior described techniques also do not allow or describe total intact capsulectomy in patients with submuscular breast implants.¹⁷⁻²²

Predicting the new breast-fold position following explant surgery can be difficult. Most breast folds tend to rise after explant, as the pocket collapses and pulls them upward. Often the extent of the fold rise is not fully appreciated until several months postop. Interestingly, it has been my experience that even patients with high cephalic breast implant malposition and capsular contracture can still develop some degree of breast-fold rise after explant. Accounting for this dynamic pocket collapse and determining the new or intended breast inframammary fold may be the

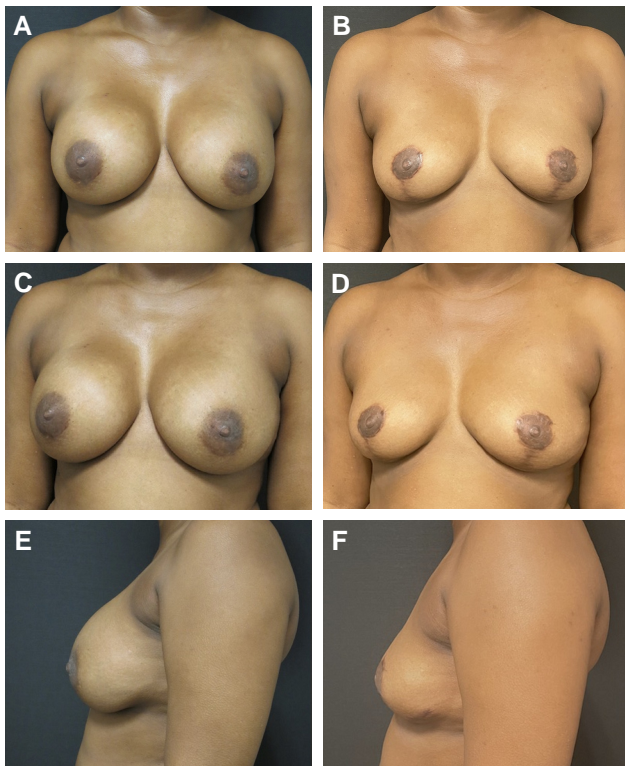


Figure 6. A 36-year-old female preoperatively (A) facing forward view (B) facing forward 12 months postoperatively (C) at an oblique angle preop, (D) at an oblique angle postop, (E) at a lateral view preop and (F) at a lateral view postop after explant of 350 cc implants and Mammary Imbrication Lift and Fixation Technique.

most difficult challenge for the explant surgeon. Scars falling onto the abdomen and visible below the bra or bikini line are not happily accepted by patients.

The inverted-T scar pattern is now favored for explant lift procedures. The excess breast skin laxity after explant surgery makes it more difficult to limit these lifts to only vertical scar procedures. Due to the resultant skin excess, there is a higher risk of having an area of bunching or dog ear at the breast fold. Attempts to chase this skin excess can lead to the scar crossing the inframammary fold and becoming visible on the abdominal wall even in a bra or bikini top.²¹ Furthermore, extending the vertical scar along the lateral breast fold can only lead to a much longer unilateral extension that can also become visible and stick out of the lateral bra or bikini line.

Additionally, some authors have described de-epithelialization prior to breast implant removal.²⁰ De-epithelialization prior to removal of the breast implant, the volume of which is all too frequently unknown, poses at least a theoretical risk for over-resection of skin prior to tailor tacking. The greatest advantage of the mammary imbrication lift and fixation technique is that it affords the

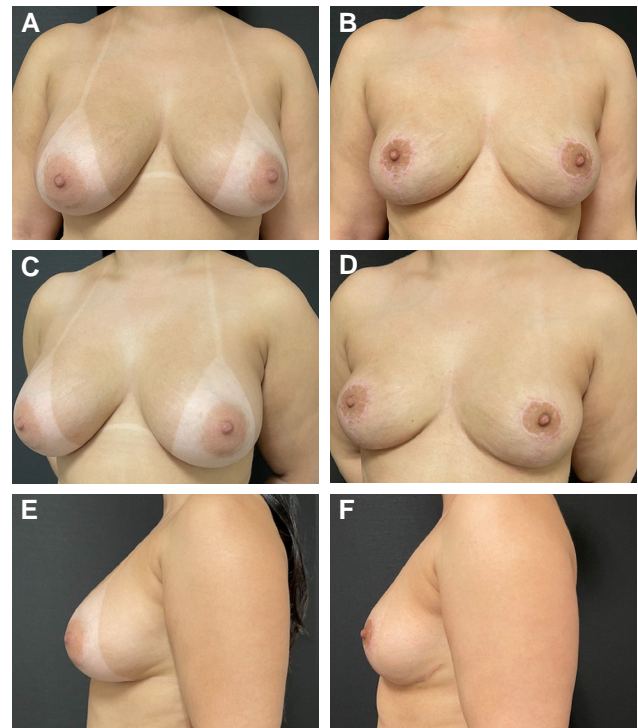


Figure 7. A 31-year-old female preoperatively (A) facing forward, (B) facing forward 12 months postoperatively (C) at an oblique angle preop, (D) at an oblique angle postop, (E) at a lateral view preop and (F) at a lateral view after explant of 285 cc implants and Mammary Imbrication Lift and Fixation Technique.

surgeon multiple opportunities for on the fly adjustments and no commitment to precalculated markings. The mammary imbrication lift and fixation technique instead relies on “fluid markings” and the ability to more simply accommodate for the dynamic pocket collapse that typically occurs after explant. This is also attempted with maximal preservation of the often unknown postsurgical breast’s blood supply. As many total capsulectomy explant patients have a relatively thin breast soft-tissue envelope surrounding a large empty pocket, the blood supply to the nipple-areola complex is more dependent on the superficial blood supply during this operation. This being the case, utilizing the dermis to invaginate a pillar of plication with vertical mammary imbrication left and fixation allows shaping of the breast without deep dissection or excessive concern for vascular embarrassment.

A limitation of this study is the lack of a patient satisfaction survey. Although the patients stated subjective satisfaction, there was no objective measure taken in this study to collect this. Additionally, the number of cases who underwent successful total intact capsulectomy rather than just attempted total incapsulectomy were not

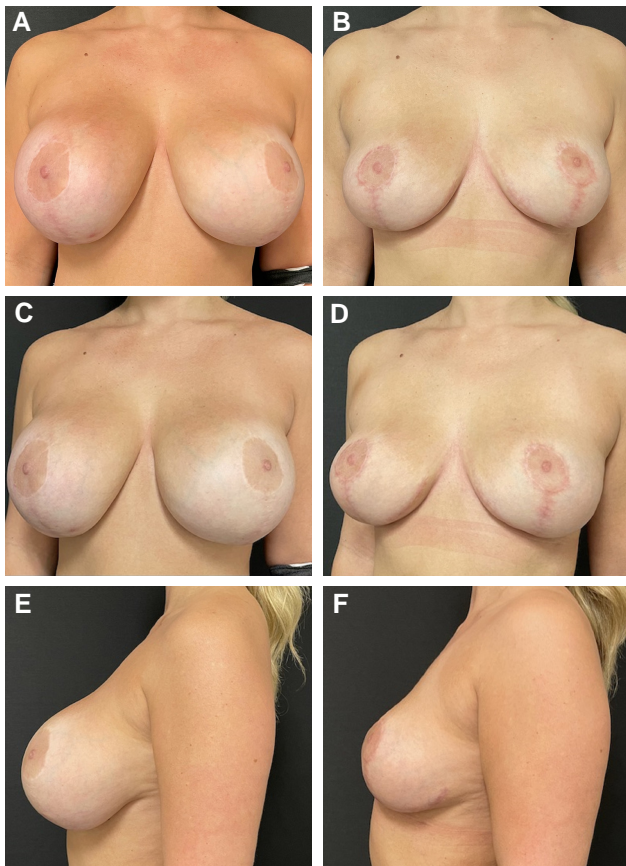


Figure 8. A 31-year-old female preoperatively (A) facing forward, (B) facing forward 12 months postoperatively (C) at an oblique angle preop, (D) at an oblique angle postop, (E) at a lateral view preop and (F) at a lateral view after explant of 650 cc implants and Mammary Imbrication Lift and Fixation Technique.

recorded. Finally, this study had a relatively brief patient follow-up. In a future study, the author will seek to increase sample size and lengthen follow-up time to further contribute to these results.

CONCLUSIONS

The mammary imbrication lift and fixation technique described here can safely and simultaneously be performed with a total intact capsulectomy and explant procedure. It has low complication rates and can be considered for subsequent breast shaping in females electing to have their implants removed without replacement. Unlike other procedures prior described, the mammary imbrication lift and fixation technique described here avoids wide undermining, intentionally opening the capsule, and subtotal capsulectomy. This technique allows total intact capsulectomy, preserves breast tissue and blood supply to the nipple, and confers a very small risk of postoperative complications.

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