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Internal Breast Lift: A New Method for Performing Internal Mastopexy

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Background: Mastopexy combined with implant placement is a complex cosmetic surgery due to the dual nature of the procedure. Various mammoplasty techniques and implant types add to its intricacy. This study aimed to evaluate the effectiveness of an internal breast lift in correcting pseudoptosis, grade 1 breast ptosis, and asymmetries, thereby offering a safer alternative with reduced morbidity and avoiding the creation of an inverted T scar.

Methods: From January 2020 to January 2022, 20 female patients with pseudoptosis, grade I breast ptosis as per the Regnault classification, and a subareolar-to-mammary groove distance less than 7 cm were selected. For those with breast tissue hypertrophy, internal tissue resection maintained a minimum thickness of 3 cm. Patients with areolar asymmetries but without breast ptosis were also included. Surgical access was achieved via the mammary fold or periareolar approach. The procedure involved internal mastopexy between the mammary gland and the pectoralis major muscle's superomedial portion, coupled with polyurethane implant insertion.

Results: Significant elevations in the areola and breast tissue were noted in patients with pseudoptosis and grade I breast ptosis, with a notable pre- and postoperative difference (Student t test, $P \leq 0.050$). Additionally, there was an improvement in areolar and breast tissue positioning in asymmetrical cases. Patient satisfaction and a 1-year follow-up were also part of the assessment.

Conclusions: The internal breast lift emerges as a safe and aesthetically pleasing alternative for patients with pseudoptosis and grade I breast ptosis. It effectively enhances areolar symmetry without the need for an inverted T scar. *(Plast Reconstr Surg Glob Open 2025; 13:e6489; doi: 10.1097/GOX.0000000000006489; Published online 29 January 2025.)*

INTRODUCTION

Mastopexy with implant placement stands as a particularly intricate operation in cosmetic surgery, owing to its dual procedural nature. This complexity is further amplified by the diverse range of mammoplasty techniques[1–4] and the various implant types used. Although the aesthetic benefits of combining these techniques, such as enhanced breast contouring, are well-recognized among plastic surgeons, there is also an observed increase in complication rates.[5,6] This dichotomy underscores the need for meticulous surgical planning and technique refinement.

The literature is replete with studies showcasing a plethora of techniques and strategies aimed at safeguarding implants during mastopexy and mitigating the risk of implant exposure, a concern particularly pronounced in areas of tissue fragility, such as the inverted T region.[7–14] Despite these advancements, the morbidity associated with concurrent mastopexy and breast implant placement remains a significant challenge. This issue is compounded by the preference of many patients to avoid the characteristic inverted T scar, a common byproduct of traditional approaches.

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In light of these considerations, our study proposes a novel surgical approach. By focusing on reducing morbidity and eliminating the need for an inverted T scar, this method aimed to refine the positioning of the breasts and areolas. Specifically, the study evaluates the efficacy of an internal breast lift technique in addressing grade 1 breast ptosis, pseudoptosis, and areolar asymmetries. By internalizing the lift process, we hypothesize that this method could offer a safer, more aesthetically pleasing outcome for patients seeking mastopexy with implants.

METHODS

Patient Selection and Preoperative Assessment

The study spanned from January 2020 to January 2022, involving 20 female patients who met specific criteria: either pseudoptosis or grade I breast ptosis as classified by Regnault,[15] and a subareolar-to-mammary groove distance was less than 7 cm. This careful selection ensured a consistent patient profile. In addition, patients exhibiting areolar asymmetry but without breast ptosis were included to address a wider spectrum of aesthetic concerns.

Surgical Procedure

Preoperative Preparation and Photographic Documentation

Patients were systematically photographed before and after surgery using a standardized technique. Skin markings, crucial for surgical planning, were made a day before the procedure. With patients in an orthostatic position, key anatomical landmarks were marked: the mammary groove and areola height. For 17 patients (34 breasts) with pseudoptosis or grade 1 ptosis, areola height ranged between 18 and 21.5 cm from the sternal notch. In the 3 patients (6 breasts) without ptosis, areola heights were between 16 and 18 cm. The mammary meridian was demarcated approximately 6 cm from the sternal notch, extending a line from the clavicle to the areolar papilla, with an average strand length of 4–7 cm. To measure the distance from the sternal notch to the areola, a rigid metal ruler with 20 cm and another with 50 cm were used. All measurements were performed by the same surgeon. Postmarking, photographs were taken, and symmetrical precision of the markings was ensured through computer analysis, making adjustments as necessary.

Implant Selection and Positioning

Round, polyurethane-coated implants with high and extra high projections from Polytech and Silimed were used (n = 40). The implant positioning strategy involved placing the upper third in the retromuscular position and the lower two-thirds in the retroglandular position. Implant volumes ranged from 235 to 400 mL.

Surgical Environment and Patient Positioning

Procedures were conducted under general anesthesia in a hospital setting. Patients were positioned supine with arms abducted. Intraoperative adjustments, including seating the patient, were done periodically to check the symmetry of the breasts, areolas, and implants. We used antibiotic irrigation with 1 g of cefazolin plus 80 mg of gentamicin and used a closed suction drain for 24 hours.

Takeaways

Question: This study aimed to evaluate the effectiveness of an internal breast lift in correcting pseudoptosis, grade 1 breast ptosis, and asymmetries, avoiding the creation of an inverted T scar.

Findings: Significant elevations in the areola and breast tissue were noted in patients with pseudoptosis and grade I breast ptosis. Additionally, there was an improvement in areolar and breast tissue positioning in asymmetrical cases.

Meaning: The procedure, which involves internal mastopexy between the gland and the pectoralis major muscles, coupled with implant insertion, offers a less invasive solution with favorable cosmetic outcomes.

Incision and Dissection

The majority of patients underwent access via the mammary groove, with a 6-cm incision length for broader access to the surgical site, facilitating the suture between the gland and muscle. In 2 patients, a lower periareolar approach was used, due to the patients preferring a scar in the areola region instead of the mammary fold. A dual-plane dissection was performed: a subcutaneous upper detachment extending up to 12 cm from the sternal notch (point H), and a retromuscular plane where the pectoralis major was bipartitioned at 16 cm from the sternal notch (point A). The muscle flap was designed in a shield configuration, extending medially to the lower sternal third and laterally to the anterior axillary line. Additional key points on the muscle flap were marked (points B and C) for precise suture placement.

Suturing Technique

The gland and muscle flap were sutured using a specific technique. The initial 3 sutures, made of 3.0 Polyglactin (Vicryl), were placed in an X shape. The first connected the gland at the upper areolar edge (point 1) to the pectoralis major muscle flap at point A. Subsequently, points 2 and 3 on the gland were sutured to points B and C on the muscle flap, respectively. This was followed by a continuous suture using 3.0 absorbable barbed thread (V-Lock 180) between the gland and muscle flap, starting at point B2, continuing to point C3, and returning to point B2 (Figs. 1, 2). (**See Video 1 [online]**, which displays an animated video demonstrating the main points of the internal breast lift.) (**See Video 2 [online],** which displays the moment of surgery showing the muscle flap and the pexy between the gland and the muscle flap.)

Postoperative Care and Follow-up

Patients were monitored postoperatively for a period of 1 year. This follow-up was crucial to assess the immediate and longer-term outcomes, including the stability of the implant position, the integrity of the breast tissue, and overall aesthetic satisfaction. Regular evaluations were conducted to identify any signs of complications, and a systematic recording of patient satisfaction with the surgical outcome was maintained through each follow-up visit.

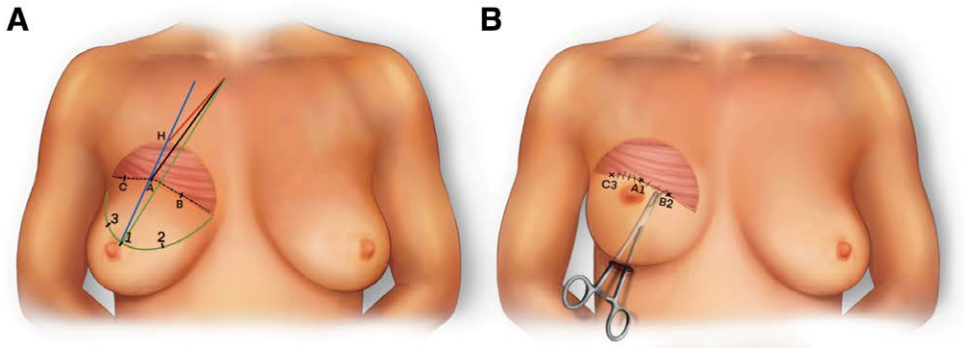

Fig. 1. Suturing technique. A, The upper limit of subcutaneous detachment, labeled as point H, is 12 cm from the sternal notch. This figure presents a schematic drawing of the muscle flap designed in a shield shape. The muscle was bipartitioned at a height of 16 cm from the sternal notch, identified as point A. Additional points on the muscle flap are points B and C; point B is situated midway between point A and the sternum, whereas point C is located midway between point A and the anterior axillary line. The green marking delineates an arcuate line, extending through the upper areolar border from the sternum to the anterior axillary line, indicating the boundary of the glandular region to be sutured to the muscle flap. Point 1 is positioned just above the areola, point 2 is halfway between point 1 and the sternum, and point 3 is halfway between point 1 and the anterior axillary line. B, This schematic illustration demonstrates the internal breast lift, highlighting the suturing of points 1, 2, and 3 on the gland to points A, B, and C on the muscle flap, respectively, thus forming connections A1, B2, and C3.

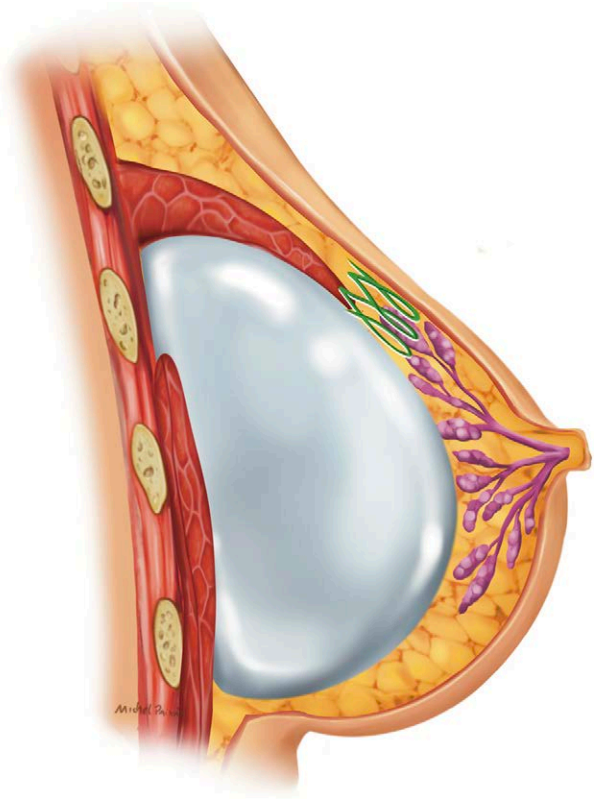

Fig. 2. This schematic drawing provides a lateral view of the internal breast lift. It illustrates the pexy between the gland and the muscle flap. Additionally, it shows the positioning of the breast implant, with the upper one-third in the retromuscular position and the lower two-thirds in the retroglandular position. This visualization aids in understanding the spatial relationship and integration of the implant with the internal breast structure postlift.

Statistical Analysis

Quantitative variables are described by the mean, SD, minimum value and maximum value. Qualitative variables are described by the absolute (*f*) and relative (%) frequencies. Comparisons between differences were described by error bar graphs with mean and 95% confidence intervals (95% CIs). The normality of the distribution of quantitative variables was confirmed by the Shapiro–Wilk test. The paired-samples Student *t* test was used to compare means. The significance level was set to 5%, and the data were analyzed using SPSS software (version 24.0).

RESULTS

The study encompassed 20 patients, translating to a total of 40 breasts, with all cases being elective cosmetic procedures. Of these, 14 procedures (70%) were primary operations, whereas 6 (30%) were secondary operations. The internal breast lift technique was used bilaterally in 17 patients (85%) and unilaterally in 3 patients (15%), with the latter serving as a comparative control against the contralateral untreated breast. This distribution allowed for a comprehensive assessment of the technique's efficacy across a variety of scenarios (Figs. 3–6).

The postoperative period was characterized by an absence of major complications such as hematoma, seroma, infection, or the need for reoperation. This finding underscores the safety and reliability of the internal breast lift technique when performed under these specific conditions.

Patient demographics, including age, implant size, and areola position before and after surgery, were systematically recorded and are presented in Table 1, which provides a snapshot of the patient population and the surgical variables involved.

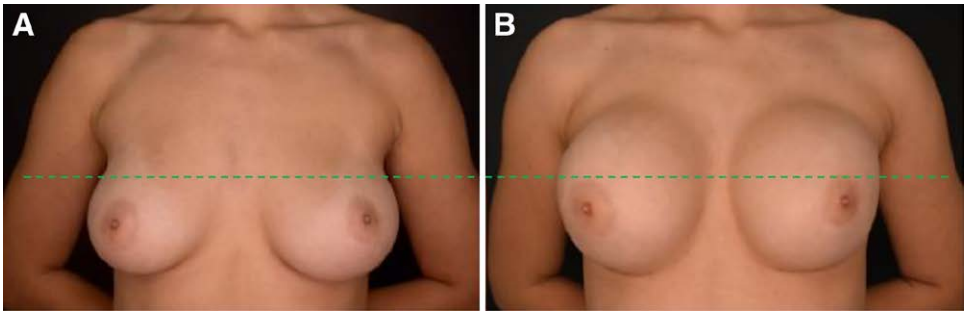

Fig. 3. This figure presents a set of photographs displaying the results of an internal breast lift, which involved the placement of bilateral 315-mL high-profile polyurethane implants from Polytech. The images compare the preoperative state (A) with the outcome one year postoperatively (B), providing a visual timeline of the transformation.

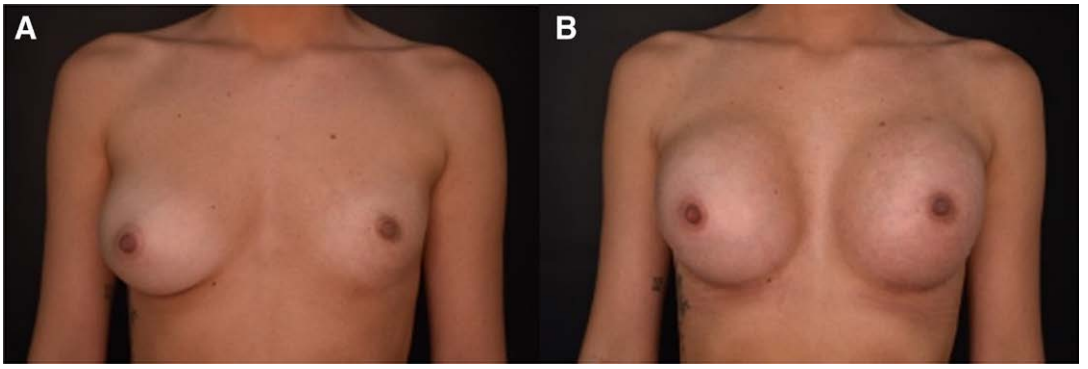

Fig. 4. This figure presents preoperative (A) and postoperative (B) photographs, with a 1-year interval, of a patient who underwent an internal breast lift, only on the right side. In addition to the lift, the procedure included fat grafting in the left breast and the placement of bilateral polyurethane implants from Polytech. Specifically, a 235-mL Polytech high-profile (MHS) implant was used on the right side, whereas a 330-mL Polytech extra high-profile implant was placed on the left side. This is the best example to demonstrate the effectiveness of internal breast lift as we observed the elevation of the right areola, performing internal fixation, even though a smaller implant was used than the other side. These images provide a visual documentation of the surgical outcome, highlighting the asymmetrical implant sizes used to achieve symmetry and balance in the patient's breast appearance.

To gauge patient satisfaction, a novel approach was used wherein a questionnaire was disseminated via a mobile app. The responses, reflecting patient perceptions of the surgical outcome, are summarized in Table 2. This method of data collection highlights the study's commitment to incorporating patient feedback into the evaluation process.

Statistical analysis of the data yielded results detailed in Tables 3, as well as Figures 7 and 8. Table 3 offers a comparative analysis of the mean and SD of the areola positioning on the right and left sides, both pre- and postoperatively. These data are critical in evaluating the effectiveness of the surgical technique in achieving symmetrical and aesthetically pleasing outcomes.

Figure 7 shows the mean and 95% CI of the difference between the pre- and postoperative moments for the right and left sides. The right side showed a reduction of 1.675 cm (95% CI, −2.081 to −1.268) and the left side a reduction of 1705 (95% CI, −2.118 to −1.291), so both areolas showed numerically similar elevation. This result indicates that the reduction was similar and does not indicate a significant difference between the sides.

Figure 8 shows the comparison of the mean and 95% CI of the difference between the left and right sides for the pre- and postoperative moments. For this calculation, the right side was considered as the reference. Thus, negative values for the difference indicate that the left side presents higher values than the right side. For the preoperative moment, the mean difference and 95% CI between the right and left sides was −0.065 cm (95% CI, −0.361 to 0.231). For the postoperative period, the mean difference and 95% CI between the right and left sides was −0.035 cm (95% CI, −0.086 to 0.016). Although no significant difference ($P = 0.828$) was observed for the difference between the sides between the pre- and postoperative periods, in the preoperative period, the higher 95% CI indicates a greater variability in the difference between the sides. On the other hand, in the postoperative period, the lower 95% CI indicates a smaller variability in the difference, which suggests a reduction in the difference between the right and left sides. This means that the height difference between the areolas has decreased and become more symmetrical.

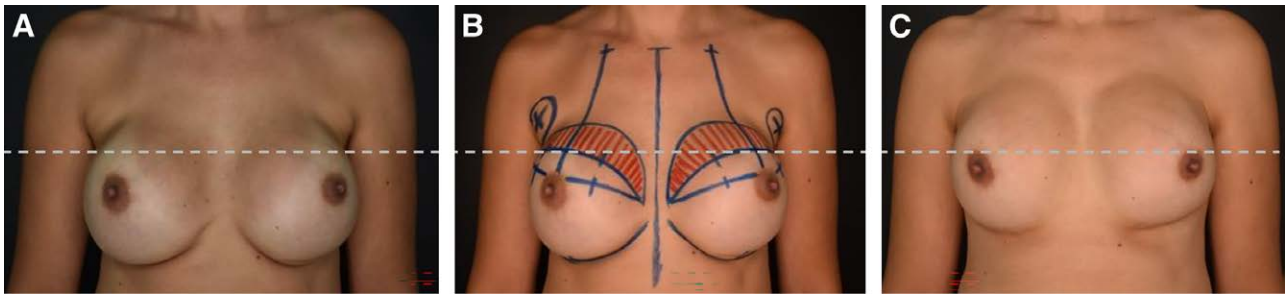

Fig. 5. This figure features a series of pre- and postoperative photographs taken 1 year apart, demonstrating a patient's transition from a total subglandular to a dual plane, combined with an internal breast lift. It also showcases the replacement of microtexture implants (325 mL) to bilateral 305-mL high-profile polyurethane implants from Polytech. We also close the breast groove with adhesion stitches. Notice how there was an improvement in the position of the breasts and areolas. A, Preoperative appearance. B, Preoperative markings. C, 1-year postoperative results.

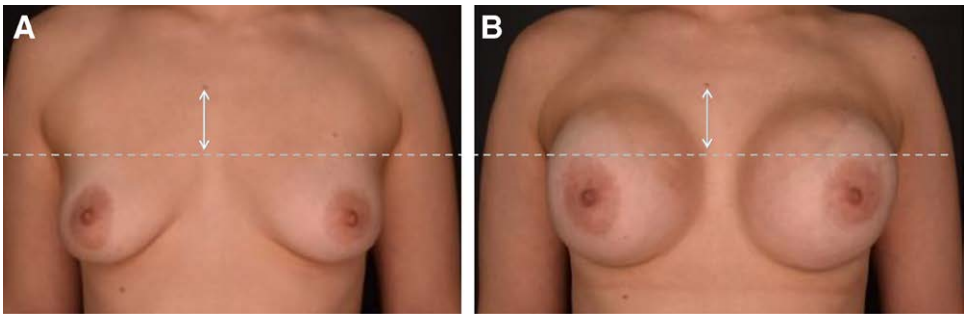

Fig. 6. This figure includes pre- and postoperative photographs taken 1 year apart, displaying the results of an internal breast lift procedure. The patient received bilateral 295-mL high-profile polyurethane implants from Polytech. A, Preoperative appearance. B, 1-year postoperative results.

DISCUSSION

The evolution of breast surgery, particularly in achieving augmented parenchyma and areolas with improved contours without additional external scarring, has been a topic of significant discussion over the years. Pioneering this field, Scioscia and Hagerty[16] introduced the concept of internal mastopexy following explanation, which involved internal plication of breast tissue in the slope region to achieve a more conical breast shape postimplant removal. This technique set a precedent for future innovations in internal mastopexy.

Building upon these foundational ideas, Mahabir and Zamboni[17] described a method of elevating the areola using 2–3 sutures in a subglandular plane, effectively reaching the retroglandular tissue and extending approximately 2.5 cm superiorly. Khan[18] further advanced the field with the multiplane technique for simultaneous submuscular breast augmentation and vertical glandulopexy using textured implants, specifically targeting minor breast ptosis.

In a more recent study, Şiclovan and Nistor[19] presented a modified internal mastopexy technique in muscle splitting biplane breast augmentation, involving subfascial dissection and 2 layers of internal mastopexy sutures between the gland and the pectoralis major muscle flap. Hong et al[20] expanded on these techniques through a periareolar incision, analyzing 53 patients with satisfactory results.

Our study, entitled "Internal Breast Lift," aligns with the objectives and concepts of these previously published studies but introduces distinct methodological variations. Our approach is founded on three key principles. Firstly, we perform subcutaneous detachment superiorly up to 12 cm from the sternal notch to enable greater mobilization of the breast parenchyma. Secondly, we prepare the pectoralis major muscle flap at the desired height of the areolas, creating a new internal point A that reflects the external height of the areola postpexy. Our real intention is to systematize the new areola position at a height between 16 to 18 cm from the sternal notch, due to this our muscle flap and the new point A1 is at a height of 16 cm. Lastly, we focus on the stability of the breast tissue in its new position, supported using polyurethane-coated implants.

When we perform internal mammoplasty, there is an elevation of the areola, an increase the volume of the upper pole and a decrease the volume of the lower pole, in addition there is an elevation of breast fold. The elevation of the breast fold is greater in cases where the areola and breast tissue lift a lot. Therefore, it would be a good option for cases with bottoming out, as we see in Figure 5. In cases of bottoming out without sagging skin associated with low areola, we recommend the internal breast lift to improve the position of the breast fold, but we need to position the implant higher than the fold and keep it

Table 1. Patient Demographics

No.	Age, y	Implant Size, mL	Right Areola Positioning, cm		Left Areola Positioning, cm	
			Preoperative	Postoperative	Preoperative	Postoperative
1	32	R: 350XH	19	17	19	17.2
		L: 350XH				
2	51	R: 295MHS	18.7	18.0	18.5	18.0
		L: 295MHS				
3	18	R: 315MHS	17	17	18	17
		L: 315MHS				
4	22	R: 400MHS	19	17	19	17.2
		L: 400MHS				
5	20	R: 355MXS	19.5	17.2	19	17
		L: 355MXS				
6	42	R: 375XH	19.5	17.5	20	17.5
		L: 375XH				
7	32	R:275XH	21.5	18	20.5	18
		L:305HI				
8	57	R: 360HI	18.5	17.5	18.5	17.5
		L: 360HI				
9	38	R: 305HI	19.5	17.3	19.7	17.4
		L: 305HI				
10	26	R: 380HI	20	18.2	21	18.3
		L: 380HI				
11	33	R: 270HI	19.2	18.1	19.5	18.1
		L: 270HI				
12	25	R: 305HI	18.5	17	18.5	17.1
		L:305HI				
13	20	R: 235MHS	17.7	16.3	16	16
		L: 330MXS				
14	35	R: 295MHS	20	18.5	20.3	18.7
		L: 295MHS				
15	44	R: 275MHS	17	17	18	17
		L: 275MHS				
16	50	R: 280HI	19	17.5	19.5	17.5
		L: 280HI				
17	38	R: 305 HI	21	17.5	21.5	17.6
		L: 305 HI				
18	36	R:295 MHS	19.2	18	19.4	18.1
		L: 295MHS				
19	25	R: 350XH	18.5	17.2	18.5	17
		L: 350XH				
20	24	R:315 MHS	19.5	17.3	19.7	17.3
		L:315 MHS				

HI, Silimed high-profile; L, left; MHS, Polythec high profile; MXS, Polythec extra high-profile; R, right; XH, Silimed extra high profile.

Table 2. Degree of Satisfaction

Questions for Patients 1 y After Surgery. Regarding Your Surgical Outcome, We Would Like to Know:	No	Yes
Did you like the quality of the scar?	0 (0%)	20 (100%)
Did the volume of the implants decrease?	19 (95%)	1 (5%)
Did the volume of the implants increase?	18 (90%)	2 (10%)
Were the areolas in an appropriate position and similar?	2 (10%)	18 (90%)
Are the breasts similar?	2 (10%)	18 (90%)
Would you have another surgery to improve the result?	20 (100%)	0 (0%)
Would you recommend the surgery to a friend?	0 (0%)	20 (100%)
Would you change the current scar for an inverted T scar, supposing that the result could have been better?	20 (100%)	0 (0%)

stable, and an external net or internal closure of the dead space is necessary to solve this issue.

We will demonstrate this case below in Figures 9A-C, which is not part of our case series but helps us understand how breast tissue was elevated by performing the internal breast lift without implant or fat graft in a recent surgery.

The selection of polyurethane implants, known for their greater adhesiveness with neighboring tissues,[21,22] was a

Table 3. Comparison of the Mean and SD of the Positioning of the Areola on the Right and Left Sides Between the Pre- and Postoperative Periods

Side		Mean	SD	*P*
Right	Preoperative areola position (cm)	19.12	1.07	<0.001*
	Postoperative areola position (cm)	17.44	0.58	
Left	Preoperative areola position (cm)	19.18	1.23	<0.001*
	Postoperative areola position (cm)	17.48	0.60	

*a significant difference between the pre- and postoperative periods using Student *t* test for *P* value ≤0.050 SD.

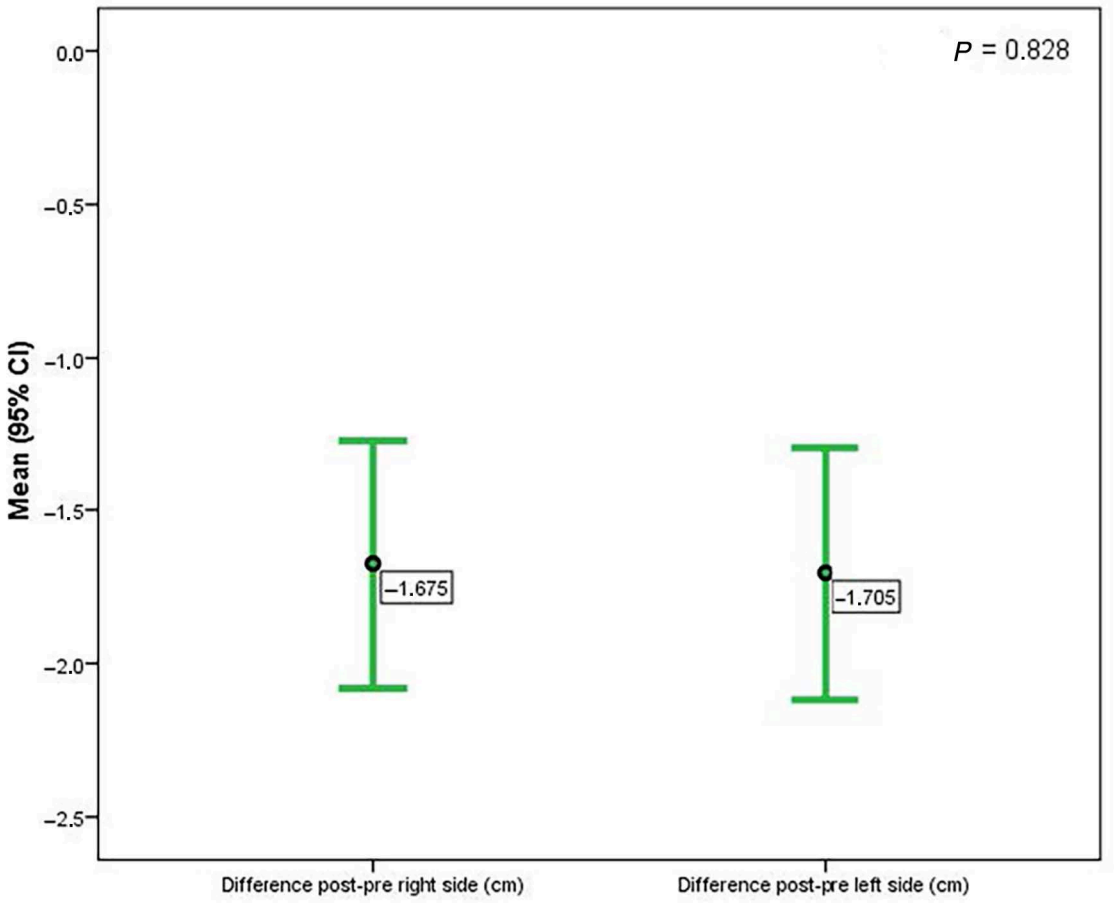

Fig. 7. Comparison of the means and 95% CIs showing the difference in areola positioning on the right and left breasts between the pre- and postoperative periods. Note: The *P* value was calculated using Student *t* test and indicates that there is no significant difference between the sides.

deliberate choice, although microtextured implants could also be viable. However, the use of smooth implants in this methodology is contingent upon the implants being small and the application of stabilization tactics for the lower pole.

Controversy surrounds the use of polyurethane implants in the retromuscular position, mainly due to the challenges in removing the capsule during reoperation.[23–25] Our technique, which uses only a small portion of the pectoralis major muscle in a shield design, minimizes the risk of capsulectomy complications in the rib cage region. The big problem with placing Polyurethane implants in dual-plane position[26] is that they only move a little in the postoperative period. Therefore, it is very important to sit patients during surgery and ensure that the implants are at the same height. Additionally, the positioning of these implants is critical to avoid postoperative asymmetries, as evidenced in 3 cases where small postoperative height asymmetries were corrected using stabilizing bands. It worked well because the difference was small.

In clinical practice, we often encounter patients, particularly younger ones with minimal breast sagging, who are reluctant to accept more apparent scars such as the inverted T. For these patients, the internal breast lift is an optimal choice. However, in cases of significant sagging due to substantial weight loss or aging, even with Regnault classification 1, the traditional T mastopexy is recommended to treat skin texture and reduce excess skin tissue. The main limitation of our work is the fact

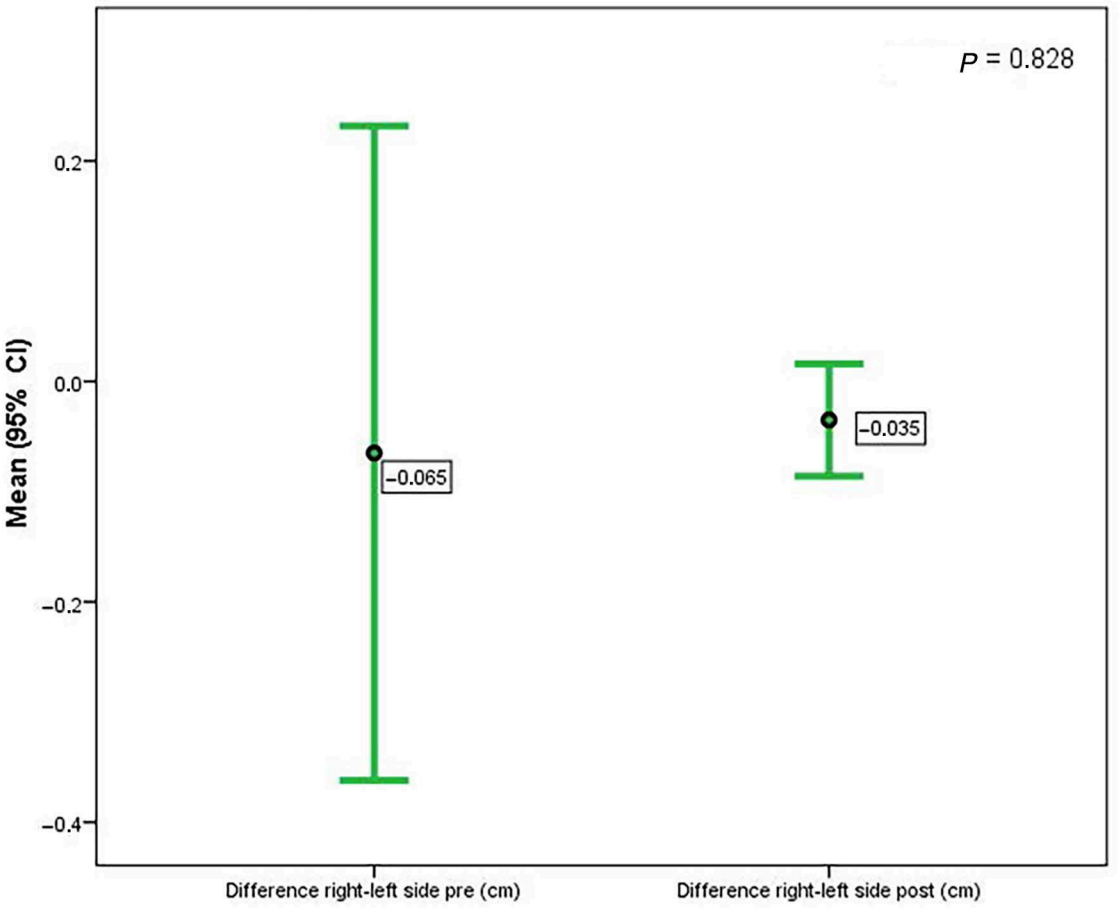

Fig. 8. Comparison of the means and 95% CIs for the difference in areola positioning between the right and left breasts during the pre- and postoperative periods. Note: The *P* value was calculated using the Student *t* test and indicates that there is no significant difference between the sides.

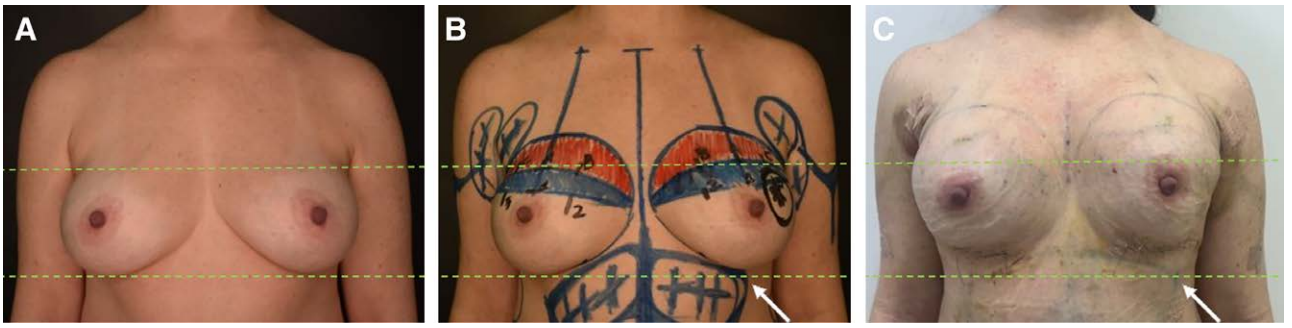

Fig. 9. We performed internal breast lift through an incision in the inframammary fold without implants or fat graft in a recent surgery. We demonstrate this case, which is not part of our case series, because it helps us understand the elevation of breast tissue by performing an internal breast lift. Note the left areola elevated a little higher than the right side because we marked the muscle flap (point A) on the left side a little higher. The blue arrow shows the liposuction mark on the abdomen at the same height in the pre- and postoperative photographs, and the lower green line shows the elevation of the breast fold. We also removed a tumor from the left side. A, Preoperative appearance. B, Preoperative markings. C, Postoperative appearance.

that we only used polyurethane implants and did not compare them with microtextured or smooth implants. Another limiting factor was not comparing 2 groups of patients, one undergoing the internal breast lift and polyurethane implants and the other group with only polyurethane implants.

Our study, albeit with a small sample size, demonstrated the statistical significance ($P < 0.05$) of the areola

positioning changes between the pre- and postoperative periods. The mean height of the right areola in the preoperative period was 19.12 cm, and in the postoperative period, it was 17.44 cm; the mean height of the left areola in the preoperative period was 19.18 cm, and in the postoperative period, it was 17.48 cm, validating the effectiveness of the technique, as seen in Table 3. In terms of patient satisfaction, although 10% reported dissimilarities in areola and breast appearance, they preferred this approach over procedures leading to an inverted T scar. Impressively, 100% of the patients would recommend this surgery to a friend, highlighting its acceptability and success.

CONCLUSIONS

Although the traditional inverted T mastopexy remains the standard treatment for significant breast ptosis, the internal breast lift has emerged as a preferable alternative for certain patient groups. This technique is especially suitable for younger patients, those without a history of pregnancy, and those with mild breast ptosis. Notably, it is highly effective in correcting areola asymmetry in patients without any degree of breast ptosis. The internal breast lift offers a less invasive solution with favorable cosmetic outcomes, making it an attractive option for those seeking aesthetic improvements with minimal scarring.

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DISCLOSURE

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

PATIENT CONSENT

All patients provided informed consent.

ETHICAL APPROVAL

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Declaration of Helsinki and its later amendments or comparable ethical standards.

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