

Breast Reconstruction After Nipple-Sparing Mastectomy with Simultaneous Mastopexy in the Large and Ptotic Breast: One Step Transformation

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Abstract

Background

In this study, we describe the safety and feasibility of our technique for breast reconstruction after NSM in patients with grade II or III ptosis, employing a wide-based adipodermal NAC flap with a prepectoral implant in a single-stage procedure.

Methods

A retrospective review from January 2021 to June 2026 was conducted for patients with ptotic breasts who underwent NSM and reconstruction using a wide superomedial and inferior adipodermal plexus and Wise-pattern mastopexy technique, incorporating prepectoral implant placement in a single stage. Patient with recent tobacco use or previous radiotherapy were excluded. Follow up ranged from 6 to 12 months.

Results

Thirty-one patients (51 breasts) underwent NSM with simultaneous mastopexy and prepectoral implant placement. The mean BMI was 28.9 ± 4.5 kg/m² and range (15.8–35.0), with five patients presenting comorbid conditions. Among them, 22.6% demonstrated grade III ptosis, while the rest were grade II. The mean difference between the original Sternal notch (SN) to

Nipple (N) and the new NAC position was 8.3 ± 2.4 cm, ranging from 4 cm to a maximum of 14 cm. Complete NAC necrosis occurred in two breasts (3.9%), partial NAC necrosis in 3 breasts (5.9%), and 3 breasts (5.9%) experienced partial skin flap necrosis.

Conclusions

Suspending the NAC on a wide adipodermal flap based on the dermal and subdermal plexus of the superomedial internal mammary perforators territory and the inferior 5th anterior intercostal artery territory in ptotic breasts may provide a reliable option for patients with large, ptotic breasts.

Level of evidence: Level of Evidence: IV.

Introduction

Recent advancements in breast reconstruction and increasing expectations for improved cosmetic outcomes have contributed to a growing preference for nipple-sparing mastectomy (NSM). This approach offers superior aesthetic results, enhances quality of life, and yields higher patient satisfaction compared with skin-sparing mastectomy (SSM) (1, 2). NSM is generally considered contraindicated in patients with grade II–III ptosis and a large breast volume exceeding 500 g because of the increased risk of nipple-areolar complex (NAC) necrosis (3) and reconstruction failure. Consequently, these cases are regarded as particularly challenging, often resulting in

suboptimal outcomes, the need for complex corrective procedures, and an unacceptably high rate of failed reconstructions (3).

The concept of combining NSM with mastopexy in ptotic breasts was first introduced by Woods et al. in 1987, representing the earliest report of simultaneous skin reduction and oncologic resection in this challenging patient population. Since then, several studies have explored variations of this approach, describing a range of immediate techniques for mastopexy performed at the time of NSM, including different adipodermal pedicles for NAC preservation, the use of tissue expanders versus implants, alternative prosthetic pocket techniques, and the incorporation of acellular dermal matrix (ADM). Reported outcomes, such as NAC viability, mastectomy flap viability, reconstruction failure, and aesthetic results, have been heterogeneous (4-21). Despite these advancements, concerns regarding vascular compromise of the NAC and mastectomy flaps in ptotic breasts persist.

Several studies have attempted to address these concerns by staging the procedure, particularly in prophylactic settings, beginning with mastopexy followed by NSM. In patients with additional risk factors, this approach may involve up to four operative stages(22) (3, 23, 24).

Elevation of the NAC on wide inferior, bipedicled, or tripedicled adipodermal pedicles and using a tissue expander instead of immediate implant placement, with or without ADM, has been advocated by several authors and has been associated with a low incidence of necrosis in multiple reports (4-21, 25).

To date, only two reports have described single-stage mastopexy with direct implant reconstruction and prepectoral implant placement following NSM without the use of ADM.

Aliotta et al. reported no cases of total NAC necrosis, relying on internal mammary perforators

and limiting NAC advancement to 4 cm (25). Bayrem et al. reported total NAC necrosis in 2 of 26 breasts and limited their technique to moderate breast ptosis, without addressing the perfusion basis of their design (8). Limited understanding of the vascular supply to the NAC after NSM complicates preservation of its viability and constrains mastopexy design.

Our hypothesis aims to preserve the optimal superiomedial and inferior perfusion zones of the breast envelope, including the internal mammary system and the fifth anterior intercostal artery perforator, respectively. This approach may maintain adequate blood supply to the NAC and reduce the risk of necrosis, based on evidence from the literature on NAC perfusion after mastectomy (27, 28) In this study, we evaluate the safety and feasibility of a novel technique combining NSM and immediate mastopexy with prepectoral direct-to-implant reconstruction in patients with grade II–III ptosis and large breasts without the use of ADM. Postoperative complication and NAC survival are also reported.

Methods

This study adhered to the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) reporting guidelines. A retrospective chart review was conducted from January 2019 to June 2026 of 31 consecutive patients (51 breasts) who underwent NSM with immediate mastopexy and prepectoral implant reconstruction at the Department of Surgery, King Abdulaziz University Hospital, Jeddah, Saudi Arabia. Mastectomies were performed by a single breast oncologic surgeon (NT) utilizing a lateral vertical limb incision designed by the plastic surgeon and following standard NSM principles. Immediate mastopexy with prepectoral implant reconstruction was performed by 4 plastic surgeons according to the techniques described by the lead author (B.A.).

Inclusion criteria were grade II or III breast ptosis (Regnault classification) or large breasts in patients who were candidates for therapeutic or prophylactic NSM from an oncologic perspective. Exclusion criteria included tobacco use, prior radiation exposure, uncontrolled diabetes, body mass index (BMI) >35, and failure to meet the oncological indications for NSM. Additionally, patients were excluded if they were lost to follow-up or did not provide consent for the use of their medical records for research purposes. Patient factors, including age, BMI, comorbidities, degree of ptosis, implant size, mastectomy weight, radiation, and chemotherapy exposure, were recorded. All patients underwent immediate reconstruction with prepectoral implant placement. ADM was not used in this technique. Immediate postoperative complications, including wound dehiscence, mastectomy skin flap necrosis, seroma, hematoma, infection, partial or total NAC necrosis, and implant exposure, were recorded. All patients were followed for a minimum of 1 year.

Descriptive statistics were calculated using Microsoft Excel (Microsoft Corporation, Redmond, WA, USA). Continuous variables are summarized as **mean ± standard deviation (SD) with ranges**, and categorical variables as frequencies and percentages. No inferential statistical analyses were performed.

Surgical Technique

Patients were marked using the Wise-pattern technique. The lateral vertical limb of the Wise-pattern served as the entry site for the surgical oncologist, leaving the NAC suspended on a de-epithelized flap based on the superior, medial, and inferior dermal/subdermal plexuses (Figure 1, Video 1). The procedure began with a plastic surgeon creating a periareolar incision using an appropriately sized cookie cutter, followed by meticulous de-epithelization of the Wise-pattern to

avoid injury to the plexuses of the dermal and subdermal layers. Subsequently, NSM was performed through the lateral vertical limb of the Wise-pattern. When tumor-free margin safety was uncertain, a subareolar tissue specimen was sent for frozen-section analysis. After completion of the mastectomy, meticulous hemostasis and pocket irrigation were performed, followed by drain placement. (video 1)

We ensured that the skin flaps were of adequate thickness, with no exposed dermis and intact subdermal vessels. Prepectoral direct-to-implant reconstruction was performed (Figure 2a), and the lower lateral aspect of the implant was draped with a lateral extension of the de-epithelized Wise-pattern, which was used to control lateral pocket displacement (Figure 2b). The NAC was secured in its new position using a partial dermal-releasing incision medially to facilitate superior advancement without kinking or folding. The Wise-pattern incision was then closed after tailor-tacking. NAC perfusion was assessed throughout the procedure by assessing dermal bleeding, color, capillary refill, and temperature. A simple noncompressive dressing with a monitoring window for the NAC was applied postoperatively.

When there was concern about closure tension, de-epithelization was delayed until after mastectomy and implant placement. The Wise-pattern was then tailor-tacked and adjusted before de-epithelization to achieve a tension free closure.

Results

Clinical Characteristics

A retrospective chart review identified patients who underwent NSM with immediate mastopexy and prepectoral direct-to-implant reconstruction between January 2021 and June 2026. Patient demographic and clinical characteristics are summarized in Table 1.

Thirty-one patients (51 breasts) underwent NSM with simultaneous mastopexy and prepectoral implant placement; The mean age was 46.2 ± 8.6 years (range, 24–64), and the mean BMI was 28.9 ± 4.5 kg/m² (range, 15.8–38.0 kg/m²). Five patients had comorbidities, and none were active smokers. Seventeen breasts (33.3%) met the criteria for prophylactic NSM, and 34 (66.7%) met the criteria for therapeutic NSM. Seven (22.6%) patients demonstrated grade III ptosis, whereas the remaining patients had grade II ptosis. No patients had a history of radiotherapy. The mean mastectomy weight was 413.9 ± 74.8 g and range (220–573), and the mean implant size was 402.4 ± 60.9 cc and range (200–500). The mean difference between the original sternal notch (SN) and nipple (N) and the new NAC position was 8.3 ± 2.4 cm (range, 4–14cm). Patient characteristics and procedural specifics are presented in (Table 3).

Complications

Complete NAC necrosis was defined as full-thickness necrosis of the entire surface area, requiring debridement and reconstruction. Partial necrosis was defined as full-thickness tissue loss involving <50% of the NAC surface area. Wound dehiscence was defined as full-thickness wound separation ≥ 0.5 cm not related to the preceding complications. Skin flap necrosis was defined as full-thickness skin loss with exposure of the underlying tissue. Partial skin flap necrosis was defined as dermal loss without exposure of subcutaneous tissue. Hematoma was defined as blood collection requiring drainage. Infection was defined as a complication requiring hospitalization, intravenous antibiotics, or additional treatment.

Postoperatively, complete NAC necrosis occurred in 2 (3.9%) breasts, partial NAC necrosis in 3 (5.9%), partial skin flap necrosis in 3 (5.9%), and hematoma in 1 (2%). No cases of implant exposure, seroma, or infection were observed. All postoperative complications are listed in Table 2.

Discussion

The concept of immediate implant-based reconstruction with simultaneous mastopexy following NSM in large and ptotic breasts remains controversial and technically challenging, underscoring the need for a comprehensive understanding of the blood supply to the NAC.

Blood Supply to the NAC

The dominant blood supply to the native NAC remains a subject of debate. Nakajima et al. and Deventer et al. conducted cadaveric studies demonstrating that branches of the internal mammary artery constitute the predominant blood supply to the NAC. O'Dey et al. supported this predominance and reported contributions from the fourth and fifth anterior intercostal arteries in 71% of cases (29, 30). Seitz et al. conducted the first contrast-enhanced MRI study in living patients, examining 52 breasts to classify vascular supply according to zones of vessel origin. The authors demonstrated that superomedial source vessels from the internal mammary artery predominated in NAC perfusion (31). Hall-Findlay reported that the vascular network of the NAC originates as radially branching vessels that converge into a plexus encircling the areola. Through intraoperative findings and preoperative Doppler imaging, the artery and accompanying venae comitantes arising from the fourth or fifth ICAP were frequently identified (32).

Venous Drainage

Understanding the venous drainage system is critical because most veins drain superiomedially and lie more superficially than arteries, just beneath the dermis. Preserving these pathways may therefore improve NAC survival (32, 33).

Blood Supply to the NAC after Mastectomy

Few studies have described alterations in NAC blood supply following mastectomy. Rancati et al. and Nahabadien et al. highlighted the need to refine mastectomy techniques to optimize NAC survival (27, 28). These refinements include reducing the extent of undermining and carefully preserving the amount of subcutaneous fat on mastectomy skin flaps while maintaining oncologic safety and minimizing trauma to the subdermal plexus. Rancati et al. analyzed MRI scans from 15 patients before and after mastectomy and identified the fifth anterior Intercostal artery perforators (AICAP) preoperatively in all cases, which was preserved during surgical dissection. Post-mastectomy imaging, using the lateral inferior mammary fold approach, demonstrated that the second internal mammary perforator, the lateral mammary artery perforator, and the fifth AICAP were present in all cases (27).

Nahabedian et al. reported complete NAC survival following NSM based on perfusion from the fifth AICAP. Cadaveric and clinical dissections consistently identified the fifth AICAP, which was confirmed using angiography as well.

The ascending branches of the fifth AICAP course toward the NAC within the subcutaneous layer between the skin and parenchyma and can therefore be preserved during mastectomy. Furthermore, the fourth and fifth AICAPs function independently, and the main ascending branch of the fifth AICAP is independent of Würringer fascia (28).

Wapnir et al. conducted a skin perfusion study using SPY imaging to evaluate NAC perfusion pre- and post-mastectomy in 39 breasts. Following NSM, perfusion was determined by vascular zones rather than a specific artery. The parasternal zone showed the least change in perfusion post-mastectomy, whereas perfusion at the nipple tip demonstrated the greatest reduction in blood flow. The authors did not address the vascular zones supplied by the fifth AICAP (26).

Hypothesis

In the adopted methodology, we hypothesized preservation of both the superiomedial perfusion zone of the internal mammary system and the inferior perfusion zone of the fifth AICAP. Accordingly, the lateral vertical limb of the Wise-pattern was selected as the incision site. The mastectomy technique preserved the IMF, thereby avoiding damage to the fifth AICAP pathway within the subcutaneous tissue as it courses toward the NAC between the gland and skin, with minimal parasternal undermining to preserve internal mammary perforators. In this study, we aimed to optimize aesthetic outcomes and associated quality-of-life benefits of single stage NSM in patients undergoing mastectomy with large, ptotic breasts. This technique demonstrated the reliability of superior, medial, and inferior adipodermal flaps as vascular pedicles for the NAC. A literature review of different dermal pedicle designs is presented in Table 4.

This study identified several key measures that enhance NAC survival after NSM. These measures began by careful patient selection, including nonsmokers with no history of radiation therapy and a median BMI of 30, and no previous periareolar incision.

Surgical precision is crucial, particularly during de-epithelialization, which should be performed by a plastic surgeon to protect the dermal and subdermal plexuses. Collaborative oncologic

surgeons must balance preservation of the subcutaneous tissue thickness with complete excision of tumor and breast tissue to maintain oncologic safety.

Tension-free closure is crucial for optimizing NAC survival. This is achieved by limiting the size of the de-epithelialized area, tailoring before committing to closure, selecting an implant that matches the weight of the removed breast tissue, and measuring the base width to minimize tension on the overlying skin flaps, promote better healing and reconstructive outcomes. The inferior de-epithelialized dermis provides an additional advantage by creating a protective layer that reinforces the suture line and protects the implant in cases of wound dehiscence.

In this study, two cases of total NAC necrosis occurred. The first occurred after selection of an excessively large implant that produced tension during closure, whereas the second followed injection of methylene blue dye around the areola in circumferential manner, which has documented toxic and vasoconstrictive effects on the subdermal plexus when injected into the dermis around the areola (34). Therefore, adherence to a well-defined protocol for methylene blue dye use in these procedures is recommended. Both breasts with total necrosis belonged to the therapeutic subgroup, mostly owing to the nature of extensive tissue resection and minimal preservation, and had a BMI >30.

Prior periareolar scarring did not compromise NAC survival when this technique was applied. Three patients had partial or complete periareolar scars from prior lumpectomies, and one had a previous reduction mammoplasty, all of which were performed at least 1 year apart. In all cases, the NAC survived completely, likely owing to well-established collateral circulation. This should not be considered sufficient to support the routine use of this technique in patients with previous periareolar scars. Until further evidence becomes available, avoiding this approach in patients

with prior periareolar scarring may be preferable to maximize the safety and reliability of NAC perfusion.

This study has several limitations, including its retrospective design, small sample size, single center setting, and the involvement of a single oncologic surgeon. Intraoperative indocyanine green image could have provided additional information regarding mastectomy skin-flap and NAC perfusion; however, this technology was not available at our center. Consequently, vascular assessment relied on clinical judgment. At our institution, this technique can be reliably reproduced by multiple plastic surgeons; however, NSM has consistently been performed by a single surgeon.

Conclusion

This study demonstrates the safety of this technique and shows promising results in patients with large, ptotic breasts undergoing NSM. It allows patients with significant ptosis to avoid SSM while preserving the NAC through a single-stage mastopexy procedure. However, careful patient selection, detailed preoperative planning, and meticulous intraoperative flap assessment remain essential to minimize complications. The technique should be reserved for non-smokers with a BMI ≤ 30 , nipple advancement ≤ 14 cm, and cases in which methylene blue dye is not injected around the NAC. Collaboration with an experienced oncological surgeon and a consistent flap technique are essential. Future research should focus on prospective, multicenter studies with larger patient cohorts to validate the reproducibility and generalizability of this technique. In addition, studies incorporating objective intraoperative perfusion assessment, such as indocyanine green angiography, together with long-term follow-up of oncologic, reconstructive,

and patient-reported outcomes, would further establish the role of this technique in the management of patients with large, ptotic breasts undergoing NSM.

Level of Evidence: IV

Clinical trial number: not applicable

Legends:

Figure1: The Nipple areolar complex suspended on superior, medial and inferior adipodermal attachments.

Figure2a : The implant inserted in prepectoral plane.

Figure2b: The implant covered laterally.

Figure3a: A 46-years-old woman with grade III ptosis, she underwent nipple-sparing mastectomy and mastopexy utilizing this technique.

Figure 3b: Left side view of 2 weeks post operatively.

Figure 3c: Anterior view of 2 weeks post operatively.

Figure3d: Right side view of 2 weeks post operatively.

Figure 4: A 54-year-old woman, presented with grade II ptosis who underwent nipple-sparing mastectomy and simultaneous mastopexy using the described technique.

Figure 4a: Left side view of pre-operative marking, red line: the entry point for mastectomy.

Figure 4b: Anterior view of pre-operative marking, red line: the entry point for mastectomy.

Figure4c: Right side view of pre-operative marking, red line: the entry point for mastectomy.

Figure 4d: Left side view of 2 weeks post operative.

Figure 4e: Anterior view of 2 weeks post operative.

Figure 4f: Right side view of 2 weeks post operative.

Video1: the Nipple areolar complex suspended on superior, medial and inferior adipodermal attachments.

Table 1: Demographics and intraoperative characteristics

Table 2: Postoperative complications.

Table 3: Patient characteristics and procedural specifics

Table 4: Literature review of NAC pedicles post NSM in large and ptotic breasts

Level of Evidence: IV

Clinical trial number: not applicable

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Characteristics	Findings
Comorbidities, n (%)	
Diabetes	5 (16.1)
Hypertension	4 (12.9)
Ptosis grade, n (%)	
Grade 2	24 (77.4)
Grade 3	7 (22.6)
NSM laterality, n (%)	
Unilateral	11 (35.5)
Bilateral	20 (64.5)
Therapeutic NSM breasts, n (%)	34 (66.7)
Prophylactic NSM breasts, n (%)	17 (33.3)
BMI (kg/m ²), Mean $\pm$ SD (range)	28.9 $\pm$ 4.5 (15.8–38)
mastectomy weight (g) , Mean $\pm$ SD (range)	413.9 $\pm$ 74.8 (220-573) g

Table 1. Demographics and intraoperative characteristics

Table 2. Postoperative complications

Complications	No. of breasts (%)
Infection	0
Hematoma	1 (2)
Seroma	0
Skin flap necrosis	3 (5.9)
NAC necrosis	
Partial	3 (5.9)
complete	2 (3.9)
Wound dehiscence	0
Implant exposure	0

Table 3. Patient characteristics and procedural specifics

Cas e No.	Ag e	B MI	Ptosis Grade (Regnaul t	SN– Nipple (cm)	New SN– Nippl e (cm)	Differe nce betwee n the	No. of breasts. Therape utic (T)	Impl ant size (cc)	Volu me of breast tissue
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			classifica tion)			origin and new SN- Nipple distanc e	or prophyla ctic (P)		excise d (gram)
1	60	27	2	29	21	8	2 2T	Righ t:450 Left: 450	Right: 500 Left :480
2	42	37	2	30	20	10	2 1T 1P	Righ t:425 Left: 425	Right: 540 Left:5 00
3	24	30	2	30	22	8	2 2T	Righ t:375 Left: 375	Right: 450 Left: 440
4	42	26	2	28	20	8	1 1T	400	438
5	40	33	2	30	20	10	1	205	321

							1T		
6	38	38	2	29	20	9	2 1T 1P	Righ t:400 Left: 400	Right: 477 Left:4 50
7	45	27	2	30	18	12	1 1T	425	401
8	61	36	3	31	19	12	2 1T 1P	Righ t:450 Left: 450	Right: 573 Left: 550
9	49	26	2	28	20	8	2 1T 1P	Righ t:450 Left: 450	Right: 460 Left:4 50
10	39	32	2	29	20	9	1 1T	350	394
11	47	26	2	27	19	12	2 1T 1P	Righ t:350 Left: 350	Right: 350 Left:3 00
12	64	23	2	27	19	12	1 1T	200	220

13	49	33	2	27	17	10	2 1T 1P	Righ t:400 Left: 400	Right: 388 Left:3 50
14	46	29	3	26	19	9	2 1T 1P	Righ t:500 Left: 500	Right: 445 Left:4 80
15	51	32	2	29	21	8	2 1T 1P	Righ t:500 Left: 500	Right: 470 Left:4 50
16	53	30	2	28	19	9	2 1T 1P	Righ t:350 Left: 350	Right: 300 Left: 330
17	49	29	2	30	22	8	2 1T 1P	Righ t:400 Left: 400	Right: 380 Left:4 00
18	46	28	2	30	23	7	2 1T 1P	Righ t:400	Right: 350

								Left: 400	Left:3 70
19	46	28	2	26	21	5	2 1T 1P	Righ t:415 Left: 415	Right: 400 Left:3 90
20	43	26. 7	2	25	20	5	2 1T 1P	Righ t:415 Left: 415	Right: 410 Left:4 00
21	51	31. 2	2	28	20	8	1 1T	470	530
22	63	33. 6	2	28	21	7	2 2T	Righ t:450 Left: 450	Right: 480 Left: 500
23	41	27	3	28	20	8	1 1T	385	420
24	44	29	2	27	20	7	1 1T	355	480
25	40	25. 5	3	25	18	7	2 1T 1P	Righ t:400	Right: 450

								Left: 400	Left:4 00
26	42	15. 8	2	19	14	5	1 1T	255	330
27	40	32. 4	3	28	21	7	1 1T	435	390
28	49	25	3	33	19	14	2 1T 1P	Righ t:415 Left: 415	Right: 480 Left: 400
29	42	29	2	22	18	4	2 1T 1P	Righ t:400 Left: 400	Right: 340 Left: 300
30	33	27	3	25	20	5	1 1T	400	350
31	54	24	2	23	17	7	2 1T 1P	Righ t:375 Left: 375	Left: 350 Right: 300

Table 4. Literature review of NAC pedicles post NSM in large and ptotic breasts

Author/year	Cases no.	Prosthesis and plane	NAC necrosis Partial Complete	Adipodermal direction	Mastectomy scars
Superior pedicle +/- medial and inferior					
<i>Al-Mufarrej et al. 2013 (6)</i>	48 br.	TE, total submascular	8% 2%	Bipedicled	Wise pattern
<i>Falco et al. (7)</i>	19 pt.	TE, total submascular	19% 0%	Bipedicled	Wise pattern
<i>Corso et al. (8)</i>	10 pt.	Implant, submascular, no ADM	0% 0%	Superior pedicle	Wise pattern and used the vertical limb for mastectomy
<i>Rusby and Gui et al. (9)</i>	17 br. 11 pt.	TE, submascular	1 (5.8%) 1 (5.8%)	All superiormedial /lateral part attached	Wise pattern

<i>Bayram et al.</i> <i>2010 (10)</i>	26 br. 15 pt.	Implant, prepectoral	2 (7.6%) 2 (7.6%)	Tripedicle	Wise pattern, lateral vertical limb
<i>Lewin et al.</i> <i>2018 (11)</i>	17 br. 11 pt.	Implant/TE, subpectoral	2 (12%) 2 (12%)	Tripedicle	Wise pattern, lateral vertical limb
<i>Khalil et al.</i> <i>2019 (12)</i>	16 br. 8 pt.	Implant with ADM wrap/ prepectoral	0 0	Bipedicle	Wise pattern, medial and lateral vertical limbs
<i>Shwartz et al.</i> <i>(13)</i>	105	Implant, prepectoral with ADM for lateral br. fold	2% 0%	Bipedicle	Wise pattern, horizontal triangles
<i>Folli et al. (14)</i>	13 br. 11 pt.	TE, subpectoral	9 (81%) 0 (0%)	Bipedicle	Wise pattern/ medial and lateral vertical limbs

<i>Aliotta et al. (25)</i>	40 br. 26 pt.	Implant, prepectoral	4 (10%) 0		Wise pattern
<i>Kontos et al. 2019 (16)</i>	30 br. 24 pt.	TE, subpectoral with ADM	4 (13%) 0%	Supriomedial and inferior adipodermal	Central, with lateral radial incision
Inferior Pedicle					
<i>Gibson 1979 (17)</i>	-	Prosthesis No type mentioned	No rate of necrosis	Inferior adipodermal	Wise pattern, medial, lateral, and superior
<i>Broer et al. 2010 (18)</i>	8 br.	TE, subpectoral with ADM	2 (25%) 0 (0%)	Inferior adipodermal	Wise pattern, medial, lateral, and superior

<i>Mosharrafa et al. 2020 (19)</i>	125 br. 65 pt.	15 (23%) prepectoral 50 (77%) subpectoral 47 (72%) ADM	6 (9%) 0 (0%)	Inferior adipodermal	Wise pattern
<i>Parus and Venturi. 2020 (20)</i>	12 br. 6 pt.	TE, prepectoral with ADM	0 0	Inferior adipodermal	Wise pattern
<i>Pontell et al. 2016 (21)</i>	8 pt. 16 br.	TE, subpectoral with ADM (75%) DIEP flap (25%)	2 (12.5%) 3 (18%)	Inferior epithelized flap	“Boomerang” shaped supra- areolar incision

<i>Manrique et al.</i> <i>2020 (22)</i>	9 pt. 17 br.	Immediate TE subpectoral 15 (88%) Delayed DIEP flap 2 (12%)	0	Inferior	Wise pattern 15 (88%) Periareolar 2 (12%)
<i>Oven and</i> <i>Scarlett 2019</i> <i>(23)</i>	15 pt. 29 br.	TE, subpectoral with ADM	0 1 (3.4%)	Inferior	Buttonhole/no vertical scar
<i>Salibian et al.</i> <i>2016 (24)</i>	16 pt. 32 br.	TE, prepectoral	4 (33%) 1 (3.1%)	Inferior adipodermal	Buttonhole

Legends:

Figure1: The Nipple areolar complex suspended on superior, medial and inferior adipodermal attachments.

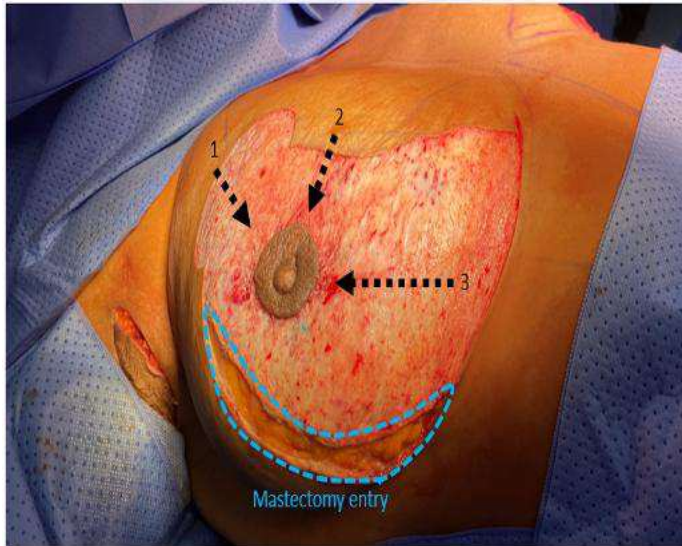


Figure2a : The implant inserted in prepectoral plane.

Figure2b: The implant covered laterally.

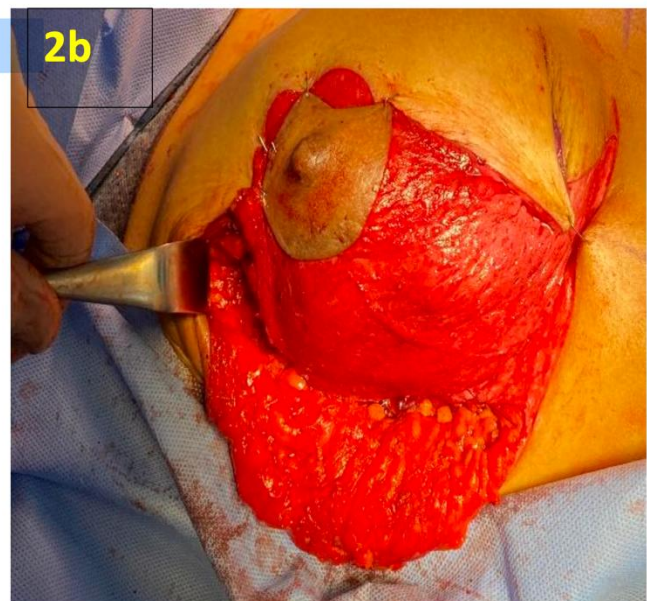


Figure3a: A 46-years-old woman with grade III ptosis, she underwent nipple-sparing mastectomy and mastopexy utilizing this technique.

Figure 3b: Left side view of 2 weeks post operatively.

Figure 3c: Anterior view of 2 weeks post operatively.

Figure3d: Right side view of 2 weeks post operatively.



Figure 4: A 54-year-old woman, presented with grade II ptosis who underwent nipple-sparing mastectomy and simultaneous mastopexy using the described technique.

Figure 4a: Left side view of pre-operative marking, red line: the entry point for mastectomy.

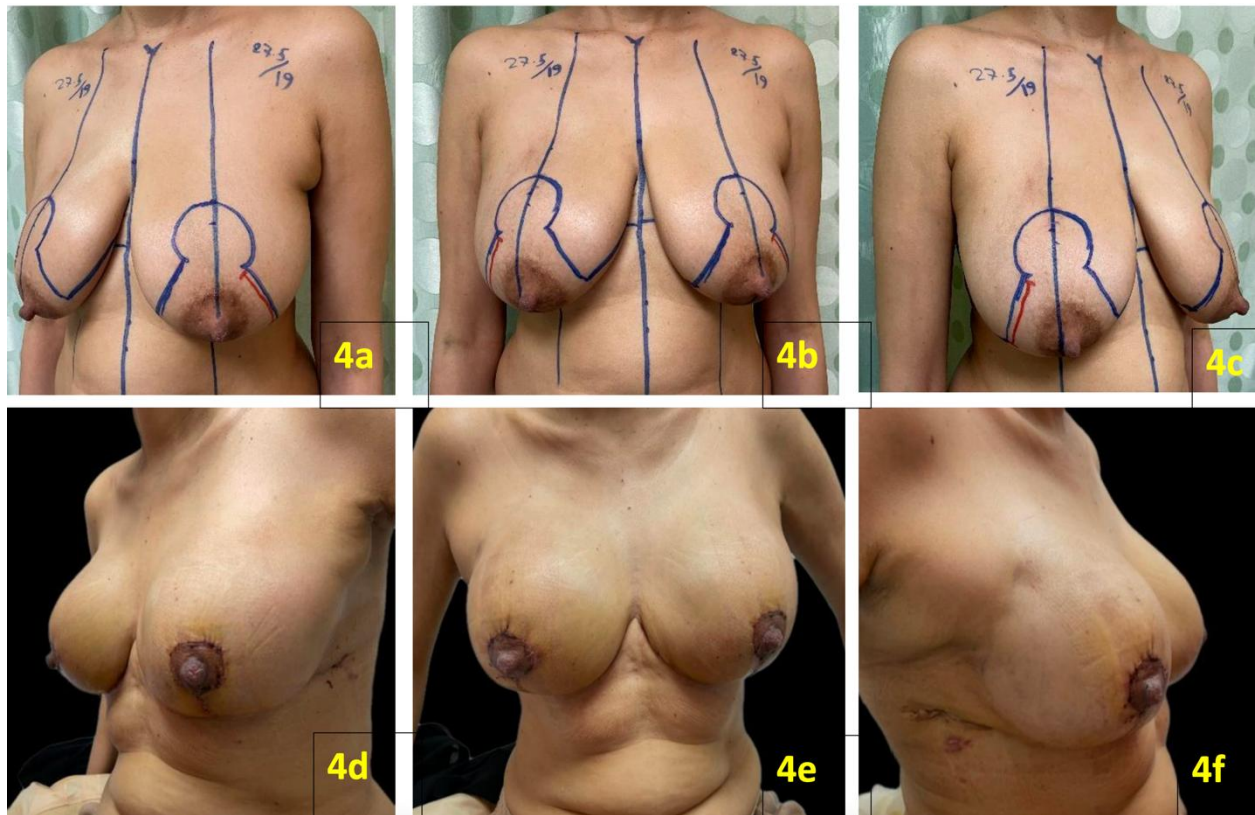
Figure 4b: Anterior view of pre-operative marking, red line: the entry point for mastectomy.

Figure4c: Right side view of pre-operative marking, red line: the entry point for mastectomy.

Figure 4d: Left side view of 2 weeks post operative.

Figure 4e: Anterior view of 2 weeks post operative.

Figure 4f: Right side view of 2 weeks post operative.



Supplementary Files

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- [VIDEO20260913101627.mp4](#)