

Lateral Pillar Flap Suspension in Superomedial Pedicle Reduction Mammoplasty

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ABSTRACT

Background: Vertical scar mammoplasty is a surgical approach that successfully unites both theories of diminished scar formation and an aesthetically appealing breast. However, unfavorable results may follow, as decreased upper pole fullness. Many techniques were proposed to overcome this complication.

Aim: Proposal of usage of long lateral pillar flap to enhance the aesthetics of the breast.

Patients and Methods: This study is a prospective clinical observational study, that was performed at Ain-Shams University Hospitals from December 2018 till June 2020, with an average follow-up time of one year. Eighteen (18) female patients with ptotic breast had reduction mammoplasty by superomedial pedicle technique with usage of long lateral pillar flap to reinforce suspension of superomedial pedicle. Standard photographs were obtained pre and post operative. All participant women had a routine pre and postoperative mammography and Strasser's cosmetic satisfaction score were done.

Results: The age of the 18 women included in this study, ranged from (25-50 years), with an average of (34±4.723). Long-term results were satisfactory both objectively and subjectively, with good upper pole fullness with enhancement of the lateral breast crease.

Conclusion: The use of lateral pillar flap adds on satisfaction in the breast's final outcome by enhancing the lateral rounded contour and by addition of upper pole fullness.

Key Words: *Supero-medial pedicle – Lateral pillar – Breast reduction.*

Disclosure: No conflict of interest.

Ethical Committee Approval: The study was approved by the ethical committee of the faculty of medicine.

INTRODUCTION

Reduction mammoplasty has developed significantly since its introduction as an operation to diminish the physical and psychosocial embarrassment. Vertical scar mammoplasty technique combines both theories of diminished scar formation and an aesthetically appealing breast. Many authors suggested that drop of breast, with apparent de-

crease of upper fullness are imperative and infuriating obstacles that bump into, in late period [1]. To decrease the bottoming out occurrence, many adjustments were designated; the dermal suspension flap in vertical-scar reduction mammoplasty by Exner and Scheufler, and the thoracic wall flap technique by Graf et al., [2,3] indeed, yet the long-term postoperative bottoming out still exists.

Our technique proposes the usage of long lateral pillar flap to reinforce suspension of superomedial pedicle and to enhance the lateral breast crease definition to get a more conical shape of the breast.

PATIENTS AND METHODS

This study is a prospective clinical observational study performed in Ain Shams University Hospitals from December 2018 – June 2020, with an average follow-up time of 9 months. Eighteen (18) women (aged between 25 and 50 years) (34±4.723). Complaining of enlarged ptotic breasts, were included in the study. An informed consent was obtained from all women. Women who are lactating or had a history of breast disease were excluded from the study.

All patients had reduction mammoplasty by supero-medial pedicle technique. Standard photographs were obtained pre and post operative, all participant women had a routine pre operative mammography and evaluated by Strasser's cosmetic satisfaction score [4] and breast Q scale [5]. Preoperative and postoperative measurements of the SN-N and N-IMF distances were recorded and statistically analyzed.

Surgical technique:

Marking the breast for surgery was done while the patient in the standing position. Marking included the breast meridian, the inframammary fold, in addition to measurements from sternal notch to nipple and from nipple to infra-mammary fold. With marking of the new nipple at infra-mammary fold. Lateral and medial extent of the excision was

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drawn by displacement of breast technique, then they were connected in curvilinear manner at a distance 2-4cm from the infra-mammary fold. The width of the pedicle was at average 8-10cm and 42-45mm diameter, cookie was used to mark the nipple areolar complex (NAC) (Fig. 1).

All patients were operated under general anesthesia in the supine position with both arms abducted. Perioperative one shot of cefotaxime antibiotic prophylaxis was administered and continued orally for 1 week. Following sterilization and after the de-epithelialization of the superiome-

dial pedicle, excision of the excess breast tissue superior lateral and inferior to achieve the desired breast size was done. Eight (8) cm length of lateral pillar (breast tissue flap) was designed with a thickness range of (6-8 cm). The lower end of the free edge of lateral pillar is sutured to lower end of base of the superiomedial pedicle medially.

The medial border of the lateral pillar is stitched to lateral border of superior medial pedicle, adjustment of lateral pillar thickness was performed (Fig. 2), breast Skin closure was done as a vertical scar, drains were placed and were removed after 3-5 days.

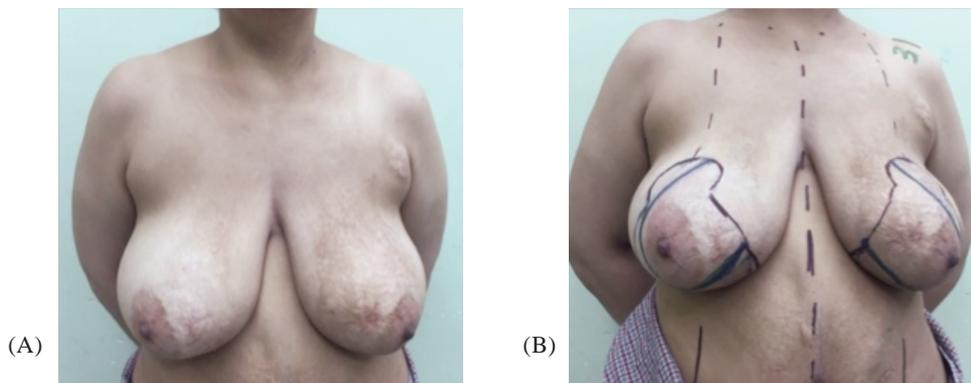


Fig. (1): Preoperative photos. (A): Before and (B): After markings of a 32 years old woman with bilateral enlarged ptotic breasts.

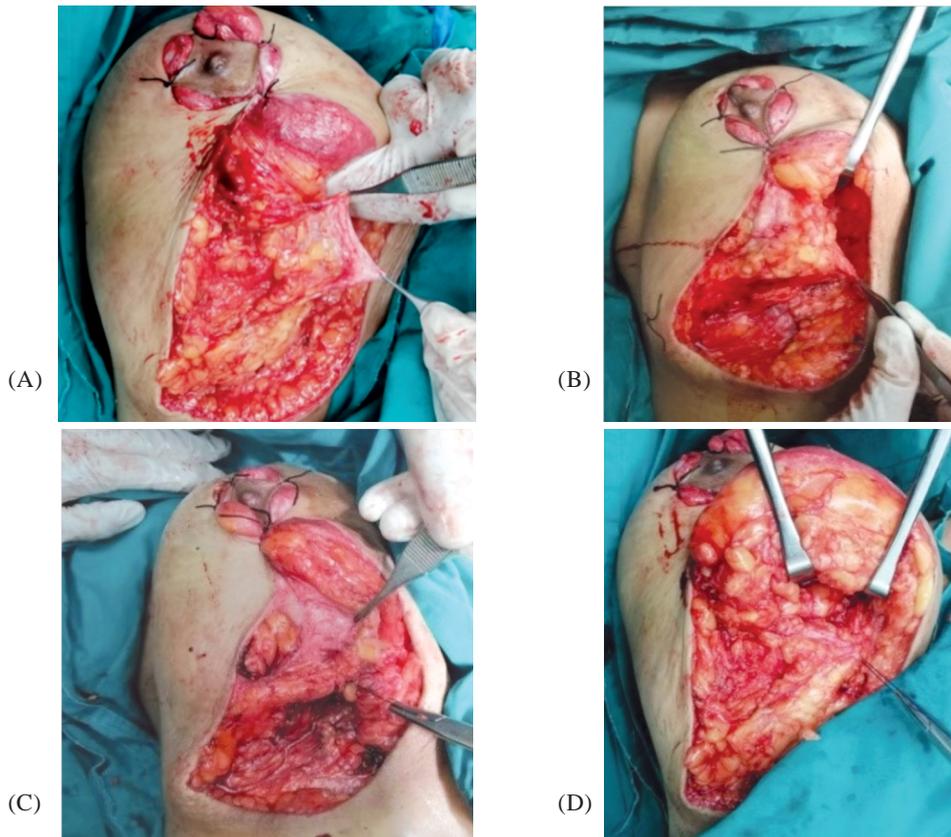


Fig. (2): (Intra-operative photos), (A): (Upper left), (B): (Upper right): 8cm length of lateral pillar was designed, (C): (Lower left): The most inferior end of the lateral pillar is sutured to the lower end of the base of the superior-medial pedicle. (D): (Lower right) After suture the medial border of the lateral pillar to the lateral border of the superior medial pedicle.

Post operative care was done, and patients were instructed not to do vigorous exercise or carry heavy objects for at least one month.

RESULTS

Eighteen (18) women were included in this study, their age ranged between (25-50 years) (34 ± 4.723). None of the patients received intraoperative or postoperative blood transfusion, patients were discharged after 2 days, and the patients had no NAC complications (nipple necrosis or sloughing), hematoma or seroma. However minor complication as disrupted sutures occurred in two cases one in the upper part of the vertical line and in the lower part respectively and were managed conservatively. Postoperative photos were taken at 3,6,9 months (Figs. 3,4). All patients were followed-up to one year.

Measurements of both the sternal notch to nipple and nipple to the infra-mammary fold, and complications were noted (Pre and postoperatively) (Table 1). The results show the average SN-N distance preoperatively to be 31.56 ± 1.79 cm and postoperatively 20.6 ± 2.42 cm ($p<0.0001$). While the average

N-IMF distance preoperatively was 16.67 ± 1.085 cm and postoperatively was 8.44 ± 1.72 cm ($p<0.0001$). there was a significant statistical difference between the pre-operative and postoperative measurements. Also, there is a correlation between SN-N and N-IMF measurements (pre-and postoperative) with mean preoperative 24.11 ± 7.58 and mean postoperative of 14.53 ± 6.148 and a significant p -value of 0.0002.

The aesthetic result was measured by Strasser's cosmetic satisfaction score [4]. The points are added together to get a total score, where an excellent result gets a 0 score, score of 1-4 are good results, 5-14 are moderate, 15 or more are poor (Table 2). Evaluation using Strasser's cosmetic score, showed results ranging from one to four for over 90% of the patients, which were evaluated as good results.

Also, an adapted questionnaire from the breast Q scale 5 was used for aesthetic evaluation, it was graded as (>75%) excellent, (50-75%) good and (<50%) fair. Our results show 5 cases with excellent score, 12 cases with good score and only 1 case with fair score.

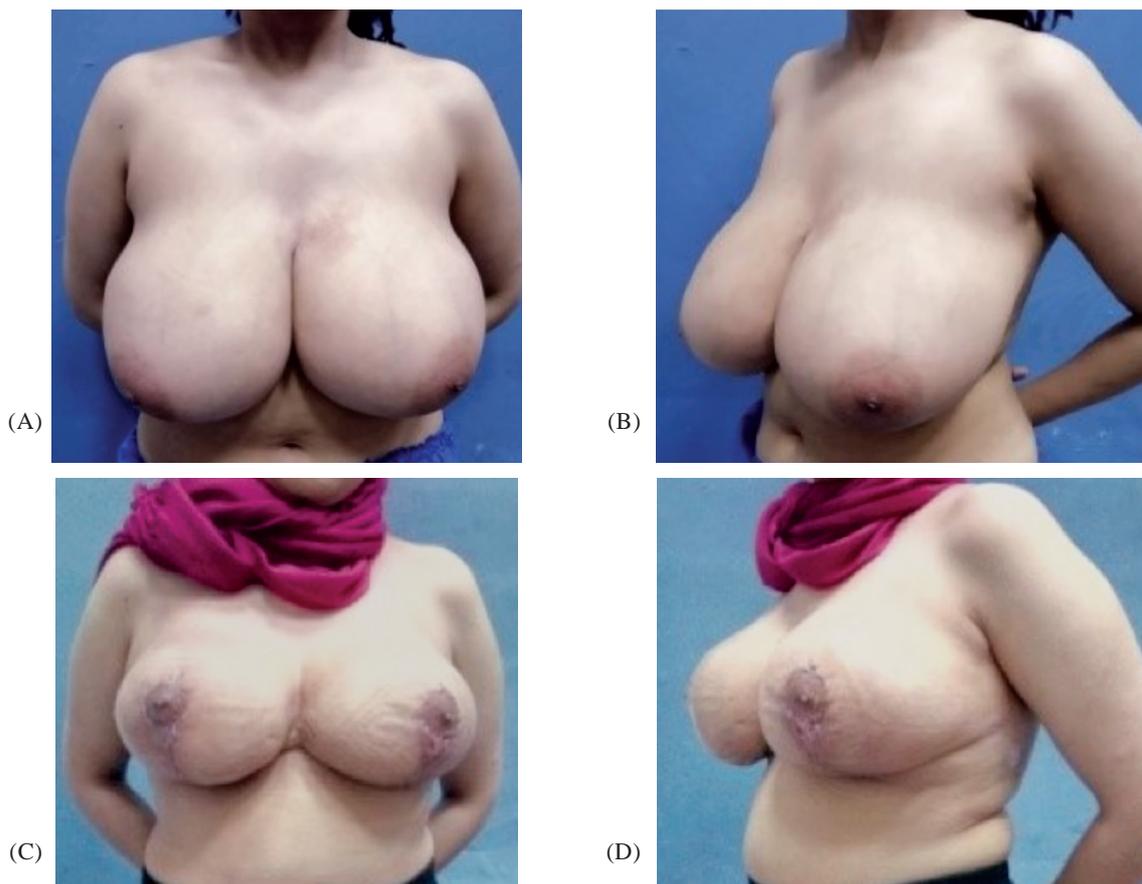


Fig. (3): (A,B): Preoperative large breast. (C,D): 6 months post-operative.



Fig. (4): (A,B): Preoperative views. (C,D): Results after 3 months postoperative.

Table (1): Demographic data and pre and postoperative measurements of studied patients.

No.	Age	Preoperative measurements		Postoperative measurements		Complications
		SN-N	N-IMF	SN-N	N-IMF	
1	25	30	17	20	8	
2	28	31	16	20	9	
3	27	30	17	20	8	
4	30	31	16	20	9	
5	32	30	16	19	8	
6	28	35	18	22	10	
7	33	32	17	21	8	
8	34	31	16	21	8	
9	35	30	15	20	9	Disrupted sutures
10	37	34	16	22	9	
11	40	30	17	20	8	
12	33	31	18	19	8	
13	36	32	19	22	8	
14	39	30	15	20	8	
15	42	35	16	22	9	
16	29	32	17	22	8	
17	50	34	18	22	9	Disrupted sutures
18	41	30	16	19	8	

*SN-N = Suprasternal notch to nipple distance in cm.
 *N-IMF = Nipple to inframammary crease distance in cm.

Table (2): Strasser's grading system for satisfaction score of studied patients.

No.	Mal-position	Dis-tortion	Asy-mmetry	Contour deformity	Scar	Overall Score
1	1	0	1	0	0	2 Good
2	1	0	0	0	1	2 Good
3	0	0	2	0	1	3 Good
4	0	1	0	0	0	1 Good
5	0	1	2	0	1	3 Good
6	2	0	0	0	0	2 Good
7	1	1	0	1	2	5 Moderate
8	0	0	1	0	0	1 Good
9	1	0	0	0	1	2 Good
10	0	0	1	0	2	3 Good
11	0	0	2	0	1	3 Good
12	0	0	1	0	1	2 Good
13	0	0	1	0	0	1 Good
14	1	0	1	0	0	2 Good
15	0	0	0	0	1	1 Good
16	1	0	0	0	2	3 Good
17	1	1	1	0	1	4 Good
18	0	1	0	0	0	1 Good

DISCUSSION

An aesthetic breast is characterized by upper pole fullness, with a straight line or mildly concave sloping, nipple sits at nipple meridian and is upward pointing, and the lower pole is a smooth convex curve.

Techniques that rely on reshaping of the skin envelope without reshaping of the glandular tissue usually ends up with inadequate unsatisfactory long-term outcomes. To attain the aim of a young appealing breast with long lasting outcomes, all the new surgical hypothesized procedures are established on two basic principles; to reshape the glandular tissue and to anchor the breast.

Several Authors attempted transposition and suspension of glandular pedicle of the breast to their primary anatomical position superiorly, by creation a point of fixation to deep pectoral fascia with the superficial fascia of the breast and the dermis [6,7]. This was presented for breast lift [8] and for reduction mammoplasty [9,10].

Go'es et al., and others [11,12,13] proposed the usage of a mesh of polyglactin and a supporting sheet made of silicone so as to support breast tissue against forces of gravity. Nevertheless, refusal of implanting foreign bodies in the breast was the opinion of many surgeons as the procedure carries the risk of potential infection and resultant fibrosis, that ends up with cicatrization and firm breast.

In this study, we present a modifying step in the technique of suspension of the superiomedial pedicle by using a long lateral pillar flap. The Lateral pillar flap is dragged medially for glandular pedicle supporting. Also, it is sutured to the lower edge of medial pedicle to gain more definition of lateral breast crease and achieve better contouring and projection.

In addition, as mentioned by Lassus [14], the vertical scar breast reduction depends on reshaping the breast tissue and fixing it upwards. So, the suture level of the subcutaneous tissues is overlapped by the suture line of the skin. This will eventually cause a Sabre like depression over the suture line. Once the lateral pillar suspension is performed, the breast obtains a more conical outline with the nipple at the uppermost point with enhancement of the projection. Moreover, the tension applied on the flaps in two different planes will end up with a resultant moderately unremarkable

fine scar, with better aesthetic final outcome, less complications and more patients' satisfaction.

In this study, only two cases had unfavorable outcomes in the form of disrupted sutures in two cases, and these cases were managed conservatively with dressing and topical antibiotics, otherwise all other cases had uneventful postoperative outcome.

Conclusion:

The use of lateral pillar flap adds ancillary benefits in breast reshaping, as it improves the lateral breast contour being smoother and more rounded. Moreover, it adds volume to the upper inner quadrant. Also, it assists in reducing the width of breast base and ending up with a natural cone like breast.

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