ISSN: 3066-9820
Research Article

Journal of Clinical Surgery Care Research

Reliability and Safety of The Superomedial Pedicle Technique for Reduction Mammaplasty

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Submitted: 11 November 2024 **Accepted:** 18 November 2024 **Published:** 22 November 2024

https://doi.org/10.63620/MKJCSCR.2024.1019

Citation: *Al-Sanabani, J. A., Al-Saeedi, M., AL-Sayaghy, Y. A., Al-Gahemi, G. A., Al-Shamahy, H. A. (2024). Reliability and safety of the superomedial pedicle technique for reduction mammaplasty. J Clin surg Care Res, 3(6), 01-10.*

Abstract

Background and Aim: *Breast reduction is a technique used to treat women with enlarged breasts and improve the appearance of the breasts. Thus, corrections performed under this technique include functional and aesthetic results while preserving the vascularity and sensitivity of the breasts. The aim of the study was to evaluate the results of the superomedial pedicle technique in patients with hypertrophy breasts.*

Patient and Method: *A prospective study to review 15 patients with bilateral breast enlargement who underwent breast reduction using the super pedicle technique. The study was conducted in two private hospitals in Sana'a City from February 2022 to May 2024. Patient demographics, preoperative breast measurements, postoperative data, aesthetics, and patient satisfaction were analyzed.*

Results: *The mean age was 35.5 years, the mean BMI was 28.05 kg/m2, and the mean weight of the resected breast tissue was 953.7 g for the right breast and 913.7 g for the left breast. The main pedicle elevation was (right breast 11.63 cm) (left breast 11.33 cm). Limited wound opening occurred in two patients at the T-junction; one patient developed epidermolysis of the bile duct mucosa that improved over time, and one patient developed fat necrosis that was removed under local anesthesia. The patient satisfaction rate was 100%.*

Conclusions: *Breast reduction using the superomedial pedicle is a safer and more reliable technique for the treatment of patients with breast hypertrophy. This technique had high patient satisfaction and good aesthetic outcomes with minimal complications.*

Keywords: Breast Hypertrophy, Breast Reduction, Mammoplasty, Superomedial Pedicle Technique

Introduction

The female breast is the strongest feminine character. For many women, breast reduction offers a solution for the functional and aesthetic problems associated with large breasts. Reduction mammaplasty is one of the most commonly demanded and performed operations in plastic surgery and has a high impact on the female patient's life. Breast hypertrophy serves as an overarching term encompassing both macromastia and gigantomastia, which represent varying degrees of excessive breast tissue growth, each resulting in distinct clinical implications [1, 2]. Gigantomastia is broadly defined as a condition necessitating the removal of more than 2500 g of breast tissue, while macromastia

is defined as a condition necessitating the removal of less than 2500 g of breast tissue. However, the exact designation of breast hypertrophy remains controversial due to differing guidelines.

Even though the etiology of breast hypertrophy is associated with factors such as hormonal and genetic transmission, macromastia develops due to hypertrophy of the hormone-sensitive tissue and glandular epithelium in the breast. On the other hand, breasts in this condition in adolescence constitute gigantomastia. Besides cosmetic problems, severe macromastia and ptotic breasts may cause intense back, neck, and shoulder pain by disrupting body posture [3, 4]. Hygiene problems and dermatitis, bad smells, and fungal infections under the breasts in women frequently accompany chronic and severe pain. Women with breast hypertrophy often experience a spectrum of symptoms.

According to a systematic review, the most frequent symptomatology is shoulder grooving, followed by shoulder, neck, and intertriginous infections. Furthermore, some patients complain of headaches and numbness in the upper extremities, and in extreme cases, they present with degenerative joint disease of the cervical or thoracic spine, which can significantly impact their physical and psychological well-being. Standard conservative approaches such as customized brassieres, weight management, and physical therapy are frequently recommended [5]. However, these methods sometimes fall short in adequately addressing symptoms and satisfying patients [6].

It is important to maintain the sensitivity of the nipple-areolar complex (NAC) and average circulation in the surrounding tissues in a breast reduction surgery. In-depth knowledge of breast anatomy promotes a better understanding of the pros and cons of all mammoplasty techniques and contributes to the safe implementation of the method of choice. Breast tissue has a rich blood supply network. The lateral thoracic artery and internal mammary artery comprise the primary arterial source of NAC. Besides supplying the main vascularity of breasts, the internal mammarian artery contributes to the blood supply of the superior or superomedial pedicle by the branches of the second and third intercostal arteries. Venous drainage of the breast follows the pattern of arterial distribution [7, 8].

All mammoplasty techniques are based on securing the viability of NAC, except for the free nipple graft technique. The pedicle is composed of glandular tissue or glandular tissue and de-epithelized dermis. Dermis is considered to contribute to venous circulation rather than arterial circulation. Various breast reduction techniques have been attempted to combine the safety of the pedicle with aesthetic and functional results. The specific reduction technique selected should depend on the patient's physical characteristics, attitude toward scars, the surgeon's judgment, and experience. Surgeons should be aware of different techniques to adapt to different patient presentations. In breast reduction, the pedicle, the skin-resection pattern, and the parenchymal-resection pattern must be considered separately [9].

Six main pedicles have been described: the superior pedicle, inferior pedicle, lateral pedicle, horizontal bipedicle, vertical bipedicle (Mckissock's), and the superomedial pedicle. In this study, we reduce excessive breast volume, ensuring adequate vascular supply and sensitivity of the nipple-areola complex (NAC), as well as producing a final shape that is aesthetically pleasing. We will report our experience with superomedial pedicle-based breast reduction and the clinical and aesthetic outcome; we will also identify the indications for breast reduction surgery and describe potential complications of breast reduction surgery [9]. The purpose of this study was to assess the effectiveness of the Superomedial Pedicle procedure in patients with breast hypertrophy, as well as the treatment's postoperative complications, aesthetic outcomes, and patient satisfaction.

Patients and Methods

A cross-sectional prospective study was conducted in two private Sana'a hospitals. From February 2022. to May 2024, for a total of 15 female patients between 20 and 47 years, complaining of bilateral symptomatic breast hypertrophy and asking for reduction mammoplasty, atient's breasts are fully grown (breast size stable for approximately one year). The supramedial pedicle mammaplasty technique was employed for these patients. High-risk patients, uncontrolled diabetes mellitus, HTN, and COPD were excluded. An informed consent form was signed by and obtained from all patients. Taking full history and examination with chart review and concentration on demographic data, BMI, marital status, smoking, comorbid diseases, patient complaints, and previous breast operations. Important demographic data and patient characteristics are presented in Table 1.

Table 1: Evaluation of important demographic data and patients characteristics

Variables	Category	N	Percent	Mean ± SD	Rang	
Age	Less than 30 years	2	13.3%	35.5 ± 7.13	21	47
	From 30 to 35 years	5	33.3%			
	From 36 to 40 years	6	40.0%			
	More than 40 years	2	13.3%			
	Total	15	100%			
Marital status	Married	13	86.7%			
	Divorced	2	13.3%			
	Total	15	100%			
	20.0 to 25	5	33.3%			

BMI	25.1 to 30.0	6	40.0%	28.05 ± 3.38	22.0	33.0
	30.1 to 25.0	4	26.7%			
	Total	15	100%			
Smoking	Yes	0	0.0%			
	No	15	100%			
	Total	15	100%			
Diabetic	Yes	1	6.7%			
	No	14	93.3%			
	Total	15	100.0%			
Hypertension	Yes	1	6.7%			
	No	14	93.3%			
	Total	15	100.0%			
Heart disease	Yes	0	0.0%			
	No	15	100.0%			
	Total	15	100.0%			
Previous breast Surgery	Operation	1	6.7%			
	Biopsy	0	0.0%			
	No	14	93.3%			
	Total	15	100.0%			
Symptoms	Very large breast	15	100.0%			
	Upper Back pain	11	73.3%			
	Shoulder pain	11	73.3%			
	Neck pain	12	80.0%			
	Social embarrassment	10	66.7%			
	Uncomfortable in clothing	10	66.7%			
	Total	15	100.0%			

Pre- operative measurements was taken including (suprasternal notch to nipple, nipple to inframammary fold, NAC diameter, , nipple to inframammary fold).

Mammography and/or breast ultrasound were performed pre-operatively for patients above 40 years old to rule out breast lesions. Local clinical examination included (obesity, level of breast, asymmetry, presence of mass breast skin color, shape, and size, areola shape, color, size, and surface, nipple direction sensitivity, destruction, or discharge, and axillary lymph nodes were also examined).

A detailed medical history was taken for all systems, and history of diabetes, hypertension, any heart disease, previous breast operation or biopsy, drug history, taking any drugs, or using contraceptives is recorded. The family and social history included any familial breast problems, marital status (single, married, divorced, widowed), number of pregnancies and children, breast feeding, and habits such as smoking and chewing Qat. The pre-operative measurements are as shown in Table 2.

Table 2: Pre- operative measurements

N	Pre- Operative Measurements	Right			Left		
		Mean	Min	Max	Mean	Min	Max
1	SN – N	31.77 ± 2.98	27	38	31.40 ± 3.11	26	38
2	IMF – N	16.87 ± 2.20	13	30	16.20 ± 2.08	13	30
3	NAC diameter	8.27 ± 1.33	7	11	8.33 ± 1.41	7	11.5

(SN – N, suprasternal notch to nipple; IMF – N, nipple to inframammary fold; NAC diameter, nipple-areolar complex diameter).

That the mean distance of the right suprasternal notch to nipple was (31.77 cm ± 2.98 cm), ranging from 27 to 38 cm. The mean distance of the left suprasternal notch to the nipple was (31.40 cm ± 3.11 cm), ranging from 26 to 38 cm. The mean distance of the right nipple to inframammary fold was 16.87 cm± 2.20 cm, ranging from 13 to 30 cm, and 16.20 cm± 2.08 cm, ranging from 13 to 30 cm in the left nipple to inframammary fold. The mean distance of the right NAC diameter was 8.27 cm± 1.33 cm, rang-

ing from 7 to 11 cm. While the mean distance of the left NAC diameter was 8.33 cm ± 1.41 cm, ranging from 7 to 11.5 cm.

The postoperative complications were discussed with every patient preoperatively, and written consent for postoperative complications was taken from all patients. Moreover, routine preoperative investigations were performed for all patients: Blood samples were taken from patients preoperatively for a complete blood picture, coagulation profile, blood group, liver and kidney functions, random blood sugar, viral marker, and blood groups. The length of pedicle elevation was recoded, and the weight of breast tissue removed was recorded.

- The postoperative assessment in the form of relieving patients complaints included:
- postoperative complications, NAC sensation, patient satisfaction, and esthetic result were evaluated.
- The patients were followed for one year post-operation.
- Pre- and postoperative photographs were taken for all patients.

Preoperative Marking

The initial stage of the operation involved marking the patient while she was in a standing position. First, we marked a line along the midline from the sternal notch to the umbilicus, in addition to marking the distance from the suprasternal notch to the nipple; then, both Niple to inframammary folds were marked.

Following this, the breast meridian was marked by drawing a line that extended from the midclavicular point drown to the nipple areola complex, down to the inframammary fold. The new nipple position was selected to be located along the breast meridian midline at the level of the inframammary line with consideration in severe ptotic breast marked 1–2 cm below it to avoid a high-up nipple, so the proposed new nipple position is about 19–24 cm from the suprasternal notch.

The mosque dome draws around the new nipple position and is attached with two vertical limbs that are drawn by displacement of the breast laterally and medially along the breast meridian to facilitate easy deepithilization. The length of the vertical limb was in the range 6-10 cm. The vertical limbs then joined the lateral and medial inframammary fold at an angle of 45°. After this, we marked the superomedial pedicle lateral to the center of the new NAC passing, around the NAC to the end in the corner of the limb (the junction of the vertical limb with curvilinear lines).

The inframammary fold marking including the final medial and lateral inframammary fold incision is approximately 2 cm shorter than the total inframmary fold length, breast meridian marking, and new nipple position consisted of the new nipple position is at the most projecting part of the breast, most likely at the inframammary fold. The nipple position should not be higher than the IMF in case of a concave upper pole of the breast. The average suprasternal notch-nipple distance is more caudal in the ptotic breast with reduced upper pole volume. This prevents excessive resection of breast parenchyma with difficulties in natural shaping of the breasts. In addition, this prevents the nipples being placed too high.

Surgical Technique

A resident and a senior surgeon carried out the surgery. Under general anesthesia, the entire procedure was carried out. The patients' arms were taken off of them as they were positioned supine. An intraoperative antibiotic injection was administered. The superomedial pedicle was avoided when doing a local infiltration of the incision lines (20 ml of 2% lidocaine with 1:500000 adrenalin with normal saline, 150 ml on each side). In order for these cardinal points to be visible when we were doing wound closure at the conclusion of the procedure, we marked the most medial point, the most lateral point, the point on the IMF, and the upper border of the areola with skin staples prior to beginning the operation. In this way, the dog ears were avoided, especially at the most medial point of the horizontal lines.

- After that, a 4 cm template to mark the areola was used, marked the superior medial pedicle to encompass nearly the entire width, omitting 0.5 cm at the superior and inferior ends to allow for rotation.
- After that, the 4 cm template was used to double-check the areola marking and make any necessary corrections. Next, a scalpel was used to incise the areola and the superior medial pedicle, deepithelializing the entire pedicle. Finally, all of the markings were incised on both breasts before beginning work on one side. By doing this, following the breast reduction on the first side, the markings on the second breast was remain apparent.
- On the first side, the breast reduction procedure then began.For the purpose of superior medial blood circulation, the dermis of the superior medial pedicle is incised on the lateral and inferior portions while leaving the medial portion intact. Next, the lateral part of the pedicle was incised and dissected straight down to the pectoralis fascia. After that, the entire top horizontal line was incised and dissected down to the fascia. Throughout this maneuver, keep the pedicle in its superior medial position.
- In accordance with the preoperative markings, the lateral tissue was excised. In order to avoid thinned out tissue there or leaving too much behind, the areola opening wasmaintained as it would be in its future position while performing this.
- After creating the pocket along the fascia, we began to dissect it laterally, frequently using our index finger to bluntly dissect the superior portion.
- The pedicle was made full-thickness in order to preserve sensitivity. and perfusion from perforators.
- The pedicle was rotated to its intended location, with its inferior section forming the medial pillar of the triangle's vertical sides, following precise hemostasis control.
- In order to secure the pedicle in the pocket, the assistant placed a single temporary Vicryl 3-0 suture at the upper aspect of the areola opening while the surgeon held the pedicle in place.
- The temporary suture was removed at the triangle located along the IMF after suturing the medial and lateral portions of the IMF. It was simpler to precisely adjust the wound borders in the inferior triangle after suturing the medial and lateral sections of the IMF.
- In order to prevent dog ears, the most lateral and medial sutures at the horizontal line were also crucial.

- To prevent NAC compression, utilizing minovix or midabor for the medial and lateral portion of the breast and Haridoid cream for the dressing. The first or second postoperative day was spent wearing the compression bra. It was recommended that the compression bra be worn for six to eight weeks.
- Intraoperatively a single shot of antibiotic was given (IV) (third generation cephalosporine) continued for 5 days b/d, clxsan sub cutaneous after 6 hrs of the operation o/d.

Recovery

Most patients understood that it takes about 1-2 weeks to return to normal activities and 3-4 weeks to get back to activities. They were cautioned not to strain so that they do not raise their blood pressure and possibly develop a hematoma. Patients were not restricted in their arm movement or in driving.

The Postoperative Assessment

Operation time, weight of removed breast tissue, hospital stay, drain removal were recorded. Post-surgical measurements will be measured for both breasts (Suprasternal notch to new nipple distance, New nipple distance to Inframammary fold, Diameter of nipple areola complex, Pedicle elevation), then the patient complain relief ,complications of the procedure were evaluated.

NAC sensitivity post operation was evaluated as (high, medium, low, or no sensation). patient Satisfaction with aesthetic results was evaluated as (very satisfied, satisfied, un satisfied).

Ethical Considerations

Formally, ethical approval was achieved from the Medical Ethics Committee, and permission to examine the patients and agreement was obtained from all patients participated in the study.

Statistical Analysis

It was performed using SPSS. The SPSS program, which is Sciences Statistical package for social version No. 26, was used to conduct the appropriate tests for the study, as the following tests were used:

1. Frequencies and Percentages.
2. Mean and Std. Deviation
3. Statistical significance was set at $p < 0.05$ for all tests.
4. Wilcoxon Signed Ranks Test.

Results

The postoperative measurements are shown in Table 3. From the pre- and post-operative measurements, we observed significant changes in the postoperative breast measurements, as shown in Table 5. The results of postoperative measurements showed that the mean distance of the right suprasternal notch to the new nipple was 20.33 cm ± 0.90 cm, ranging from 19 cm to 22 cm.. While the mean distance of the left suprasternal notch to the new nipple was 20.33 cm ± 0.90 cm, ranging from 19 to 22 cm. The mean distance of the right new nipple to the inframammary fold was 6.8 cm ± 0.59 cm, ranging from 6 to 8 cm.

Table 3: Post-operative measurements

N	Post-operation Measurements	Right			Left		
		Mean	Min	Max	Mean	Min	Max
1	SN - N	20.33 ± 0.90	19	22	20.33 ± 0.90	19	22
2	IMF - N	6.80 ± 0.59	6	8	6.77 ± 0.53	6	7.5
3	NAC diameter	4.49 ± 0.05	4.3	4.5	4.49 ± 0.05	4.3	4.5
4	Pedicle elevation	11.63 ± 2.54	7	17	11.33 ± 2.74	6	17

Table 4: Wight of tissue excised

Variables	Category	N	Percent	Mean ± SD	Rang	
					Min	Max
Tissue excised Rt (g)	Less than 800 gm.	5	33.3%	953.7 ± 295.5	420	1600
	800 to 1000 gm.	6	40.0%			
	More than 1000 gm.	4	26.7%			
	Total	15	100.0%			
Tissue excised Lt (g)	Less than 800 gm.	5	33.3%	913.7 ± 338.8	300	1500
	800 to 1000 gm.	4	26.7%			
	More than 1000 gm.	6	40.0%			
	Total	15	100.0%			
Tissue excised Total (g)	Less than 1600 gm.	5	33.3%	1867.3± 605.3	720	3000
	1600 to 2000 gm.	4	26.7%			
	More than 2000 gm.	6	40.0%			
	Total	15	100.0%			

Table 5: Comparison pre-operative measurements and post-operative measurements

Measurements	Right		P value	Left		P value
	Pre- Operative	Post-operative		Pre- Operative	Post- operative	
SN - N	31.77 ± 2.98	20.33 ± 0.90	0.001*	31.40 ± 3.11	20.33 ± 0.90	0.001*
N - IMF	16.87 ± 2.20	6.80 ± 0.59	0.001*	16.20 ± 2.08	6.77 ± 0.53	0.001*
NAC diameter	8.27 ± 1.33	4.49 ± 0.05	0.001*	8.33 ± 1.41	4.49 ± 0.05	0.001*

While the mean distance of the left new nipple to inframammary fold was 6.77 cm± 0.53 cm, ranging from 6 to 7.5 cm.

The mean distance of the right diameter of NAC was 4.49 cm ± 0.05 cm, ranging from 4.3 to 4.5 cm. While the mean distance of the left NAC was (4.49 ± 0.05) range from 4.3 to 4.5 cm. The mean distance of the right pedicle elevation was 11.63 cm ± 2.54 cm, ranging from 7 to 17 cm. While the mean distance of the left pedicle elevation was 11.33 cm ± 2.74 cm, ranging from 6 to 17 cm. The mean weight of breast tissue excised was 953.7 g on the right breast with a range of 420 to 1600 g and 913.7 g on the left breast, ranging from 300 to 1500 g. The mean total weight of breast tissue excised was 1867.3 with a range (720 to 3000 g), Table 4.

The frequency and percentage of postoperative complications have also been provided in Table 6. The overall complication rate was in the form of minimal to moderate wound dehiscence at the site of T junction in two patients (13.3%) that were treated conservatively without further squeal. There was fat necrosis in one patient bilaterally (6.7%), that was removed under local anesthesia, and one patient developed epidermolysis at the right areola (6.7%) that was treated by dressing conservatively. There was one patient with unilateral partial nipple necrosis (6.7%).

Table 6: Post operative Complications

N	Complications		Frequency	Percent
1	Hematoma		0	0.0%
			15	100.0%
2	Seroma		0	0.0%
			15	100.0%
3	Wound dehiscence		2	13.3%
			13	86.7%
4	Wound infection		0	0.0%
			15	100.0%
5	Delay healing		0	0.0%
			15	100.0%
6	Fat necrosis		1	6.7%
			14	93.3%
7	Over reduction		0	0.0%
			15	100.0%
8	Under reduction		0	0.0%
			15	100.0%
9	NAC- necrosis	None	14	93.3%
		Unilateral and Partial	1	6.7%
		Bilateral	0	0.0%
		Total	0	0.0%
10	Epidermolysis	None	14	93.3%
		Unilateral	1	6.7%
		Bilateral	0	0.0%
		Total	0	0.0%
		Partial	1	0.0%

Table 7: Aesthetic Results

Aesthetic	Frequency	Percent
Excellent	11	73.3%
Good	4	26.7%
Fair	0	0.0%
Bad	0	0.0%
Total	15	100.0%

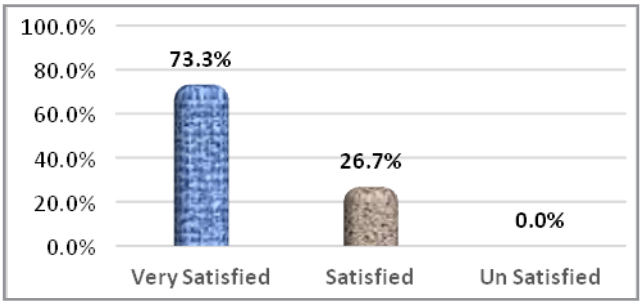

Figure 1: Patient satisfaction

All of which complications healed satisfactorily with simple dressings alone. None of these patients required formal debridement or skin grafting. All the patients postoperatively showed improvement in their breast appearance with symptoms relief (less pain at the shoulder, neck, and back regions). The patents satisfaction was assessed with regards to long-term projection and contour; breast symmetry was found in 93.3%) of cases; symmetry of of nipple position was achieved in 100%. Moreover, the overall postoperative patient satisfaction with aesthetic results was reported in all patients by 100%, and patient satisfaction range was very satisfied in eleven patients (73.3%) and satisfied in four patients (26.7%). By total, 100% satisfaction.

Discussion

There is a broad diversity of techniques for breast reduction. Various combinations of incisions and pedicles have been outlined to achieve the objectives of reduction mammoplasty, which include: (a) preserving the vascularity and innervation to the NAC, (b) achieving optimal volume reduction, (c) forming a skin envelop that minimizes scarring and maintains proportionality with the remaining breast tissue and lastly (d) sustaining a favorable aesthetic breast shape. These criteria are met with the utilization of superomedial pedicle breast reduction technique [10].

Factors that can negatively affect the outcome of a reduction mammaplasty have already been previously frequently described (e.g., age, BMI kg/m2, grade of ptosis, comorbidities, smoking and amount of resection weight [11, 12]. Due to fact that NAC necrosis and loss of NAC sensation are the most severe complications of reduction mammaplasty, safety is mainly dependent on assuring blood and nerve supply to the NAC. The complication of NAC necrosis in breast reduction and mastopexy has been reported up to 7.3% [13]. Due to the severely increased SN-NAC distance in hypertrophic breasts, the vascular safety of the NAC remains a primary concern.

In normal-sized breasts reduction mammaplasties the inferior, superior, medial or lateral pedicle provides adequate blood supply to the NAC, but might not include sufficient arterial flow and venous output to the NAC in cases of breast hypertrophy. Van Deventer et al. analyzed the arterial breast blood supply through a cadaver research project and concluded that even though the main sources are constant (internal/lateral thoracic, anterior intercostal and acromiothoracic artery), partial or complete absence of branches can occur.

Due to this unpredictable anatomy and blood supply of the NAC and to reduce the risk of potential NAC loss, they recommended to use a technique including branches from more than one source [14]. Palmer and Taylor analyzed the vascular territories of the breast and found the internal thoracic artery to be the dominant blood supply in 70 % of patients [15]. Furthermore, the only vessel to contribute at least one perforator to the NAC in 100 percent of cases was the internal mammary artery. The superomedial pedicle (which includes these perforators) is therefore a sound anatomical choice. . First described by Orlando and Guthrie [the superomedial pedicle technique has been demonstrated to be both safe and reliable [16].

An inverted T scar pattern was used as it better allows ease of resection medially and laterally. The mean age of patients in our study was 35.5 years. This is similar to mean age quoted in other studies on patients with breast hypertrophy mean BMI was 28.05kg/m2. This value is slightly higher than that seen in other studies [17]. The mean resection weight was 953.7g for right breast and 913.7 for the left. This value is higher than seen in most studies where superomedial pedicle reduction mammo-

plasty is done. Similarly mean NAC transposition (pedicle elevation) in right breast NAC pedicle elevation it was 11.63cm and 11.33cm in left, is somewhat higher than documented for superomedial pedicle [18].

Reduction mammoplasty is a technique used for treating women with breast hypertrophy, in addition to improving their breast appearance. Hence, it has both functional and aesthetic outcomes [19]. in our study assessment of the post-operative measurement showed significant difference for SN-N distance and IMF-N distance from preoperative measurements ($p = 0.001$). These significant reduction in breast measures and size improved patients' quality of life and facilitates daily activities, thanks to the great reduction in neck and shoulder pain.

Moreover, a majority of the patients reported an improvement in their breast appearance, size, and projection. The standard free NAC graft reduction mammaplasty results are disappointing causing flat, non-projecting, and insensate nipples [2-4]. The use of inferior pedicle technique resulted in an unsatisfactory aesthetic outcome due to bottoming and boxy breasts with flat unpleasant medial breast. In contrast, superomedial technique shows its superiority in preserving the medial and central breast tissue in continuity, and contributes towards esthetically pleasing medial fullness [20]. In this study, patients with severe breast ptosis (SNN distance>38 cm) and breast hypertrophy were operated on using superomedial pedicle technique for reduction mammaplasty with no cases of total nipple-areola loss.

In general NAC necrosis following reduction mammoplasty whether the flap is based superiorly or inferiorly had being estimated as 0.4-6% [21]. One of the advantages of the superomedial pedicle technique is that it can be applied for patient with sever ptosis (more than 38 cm N-SN) with preservation of NAC. In our study, there was one unilateral partial case with nipple areola necrosis 6.7% . we propose that this one case with partial unilateral NAC necrosis was due to the patient systemic condition (past history of steroid using for SLE) as the main contributing factor. Moreover, Bucaria et al. reported no NAC necrosis with severe breast ptosis (SN-N 40–50 cm) [21], while Uslu et al. [22] showed 2.7% NAC necrosis with an average of 32.99 cm (SN-N), Mohammed et al, [23] had no nipple necrosis (SN-N: 39.7 cm), and these studies used the same technique which included superomedial mammoplasty. Lugo et al [16]. Reported a 10.5% incidence of partial necrosis of NAC, while Landau and Hudson determined rates of 6.5% partial areola necrosis, using the superomedial technique [22]. On the other hand, Hamdi et al. used horizontal septum with lateral and medial pedicles which showed partial (0.5%) and total (0.5%) NAC necrosis, respectively [24].

The comparison by Kemaloğlu CA, Özocak H for inferior pedicle (25%, average SN-N:34.3 cm) and inferocentral pedicle breast reduction (5.8%, average SN-N: 35.1 cm) NAC complication Hamdi, M. et al, (2009) [25]. In those patients. their breast was found to be too long due to which, a longer pedicle with wide base was required to avoid disruption in the blood supply to NAC. Needless to say, this long flap with a wide base reduced the amount of resected breast. Moreover, the pedicle inset in this technique is comfortable, avoiding the risk of stretching and kinking the venous system, making it safer for breast hypertrophy.

Van Deventeret al. revised the arterial blood supply to the breast by including 27 adult cadaver breasts. They concluded that the location of the main vascular supply to the breast is constant. They observed that NAC necrosis occur because of complete or partial absence of branches from these arteries. Hence, they concluded that the NAC blood supply is unpredictable, stating that including branches from more than one source would be safer [14].

The wound dehiscence in our study we encountered two cases (13.3%) in the T – junction they occurred in long suprasternal notch distance (SN-N >38cm) first case was bilaterally with tissue resection in right breast 1350g and 1085g in left breast, and BMI 28 kg/ m2, second case was unilateral with tissue resection in right breast 780g and 790g in left breast, BMI 24 kg/ m2, and SN-N 33cm bilaterally . these cases were managed conservatively by dressing and follow up.

In comparison with Landau and Hudson reported (18%) used superomedial technique, while (1.62%), Bucaria et al. (18.2%), Mohammed et al. (11.4%), they used superomedial technique. Hamdi et al. had (7.7%) dehiscence occurred in medial and lateral pedicle mammoplasty [21, 22, 24, 26]. The delayed wound healing and dehiscence were correlated directly with the average preoperative breast volume, average resection weight per breast, and patient age [7]. preserving the horizontal septum within the flap is that it helps maintain the NAC sensation and preserve the fourth intercostal nerve carried within it.

This helps maintain and direct 93% of the sensation to the NAC. In our study, a majority of the patients retained sensation or regained it within first 6months during the post-operative period, one of them had impaired sensation in the right breast and reported a large resected tissue of right breast (1400g) with BMI 31 kg/ m2 SN-N 35 cm. Uslu et al. showed a 2.7% loss of sensation in cases with partial nipple necrosis. Regardless of the technique used, it is clear that greater the reduction resection, greater the likelihood of the impaired nipple sensation [27].

In this study one patient complained from epidermolysis in the right breast areola it may be corelated with the average preoperative breast volume , average resection weight per breast SN-N 38 cm bilaterally, right breast tissue excision 1500g also this patient was diabetic with BMI 32 kg/m2 the case was managed conservatively by dressing and follow up.

In our study one patient developed fat necrosis that was managed by resection under local anesthesia. The patients' satisfaction with this technique was found to be very satisfied with 73.3%of cases and satisfied with 26.7.by total 100% satisfied. Mohammed et al. show overall satisfaction of inferior pedicle (62.5%) in comparison with superiomedial pedicle was (95.5%) [28], while Kemaloğlu CA, Özocak H more satisfied with inferocentral pedicle breast reduction (90.2%) and comparison with inferior pedicle (87.2%) [25]. The functional benefit of this technique was obvious, as all of our patients reported the disappearance of their shoulder, neck, and back pain after operation. Another advantage of superomedial reduction mammoplasty is that it helps ensure an aesthetically pleasing breast shape with an adequate and stable projection, unlike in the case of the inferior pedicle reduction mammoplasty technique[28-30].

Conclusion

Breast reduction using the superomedial pedicle is a safer procedure well vascularized, especially for large breasts, that minimizes NAC vascular compromise, and a reliable technique for the treatment of patients with breast hypertrophy, including macromastia and gigantomastia. It is a versatile technique with high predictability, low complications, and good aesthetic outcomes.

Data Availability

The accompanying author can provide the empirical data that were utilized to support the study's conclusions upon request.

Acknowledgments

The authors would like to thank Yemen and the Sana'a University for their kind cooperation.

A Dispute of Interest

There are no conflicts of interest in regard to this project.

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