



ORIGINAL ARTICLE

Feto-Maternal Outcomes in Pregnant Women with First Trimester Vaginal Bleeding

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ABSTRACT

Background: Breast cancer is regarded to be the most frequent and lethal female cancer in the world. Breast conservation is removing the primary breast cancer with a margin of healthy breast tissue (lumpectomy), removing the axilla, and receiving adjuvant radiation therapy with positive functional and esthetic results. The aim of this study was to evaluate oncological and aesthetic outcomes after oncoplastic surgery for early breast cancer.

Methods: Patients diagnosed to have earlstage breast cancer who were admitted to General Surgery Department, Zagazig University Hospital and patients with age <60 years, unilateral, solitary tumors, early stage size of tumor < 5cm ((T1/T2, N0/N1, AJCC TNM Classification 2010) were included in the study. Results for aesthetic and oncological purposes were assessed.

Results: Majority of tumours were grade 2 with 56.7%, 73.3% had vascular invasion, all had free safety margin, 53.3% had Axillary involvement. 30% had complication all of them had seroma, and 3 cases had infection. Satisfaction score of subjective assessment was 6.8 ± 1.01 , 20% were excellent and 36.7% were good and 43.3% were poor and regarding objective assessment parameters and score distribution 26.7% were excellent and 63.3% were good and 10% were poor.

Conclusions: Techniques for oncoplastic breast surgery achieve adequate safety margin with better aesthetic outcomes with minimal complication.

Keywords: Early breast cancer, oncological, aesthetic.

INTRODUCTION:

The most prevalent and lethal kind of female cancer in the world is believed to be breast cancer. Although recent advances in therapy strategies have improved clinical outcomes and patients' prognoses, the incidence and severity of this type of cancer are still increasing, emphasizing the urgent need for novel medications to improve treatment methods and more accurately anticipate patients' prognoses [1].

Evidence from randomized studies has demonstrated that breast-conserving surgery (BCS) combined with radiation, also known as

breast conserving therapy (BCT), resulted in survival rates that are comparable to those of modified radical mastectomy. Modified radical mastectomy was the surgical option previously used to treat stage I or stage II breast cancer. These outcomes have caused BCT to become the preferred treatment for those with early breast cancer [2].

For the majority of women with early breast cancer, BCT is advised as the standard treatment in developed nations. Breast conservation entails axillary clearance,

adjuvant radiation therapy, and removal of the main breast cancer with a margin of normal-appearing breast tissue (lumpectomy). To reduce the incidence of local recurrences, BCT includes post-operative radiation to the residual breast tissue [3].

Compared to breast preserving oncologic surgery without reconstruction, oncoplastic breast reconstruction yields superior aesthetic results and increases patient satisfaction [4].

Patients undergoing oncoplastic surgery for locally advanced breast cancer had satisfactory to very excellent aesthetic results in 87.2% of cases [5].

Oncoplastic surgery approaches have a 16% complication rate. Two categories of complications can be distinguished. There are the 'early problems' (short term), which include delayed healing, skin necrosis, nipple areolar complex (NAC) necrosis, hematoma, seroma and abscess. The second category discusses the late (long-term) consequences, including scar fibrosis, keloids, steatonecrosis, and recurrence [6]. This study aimed to evaluate oncological and aesthetic outcomes after oncoplastic surgery for early breast cancer.

METHODS

Patients diagnosed to have early stage breast cancer who admitted to General Surgery Department, Zagazig University Hospital 30 cases with age <60 years, unilateral, solitary tumors, early stage size of tumor < 5cm ((T1/T2, N0/N1, AJCC TNM Classification 2010) were included in the study. Written informed consent was obtained from all participants, the study was approved by the research ethical committee of Faculty of Medicine, Zagazig University (n: 10052/6-11-2022). This study was carried out in accordance with the Declaration of Helsinki,

the International Medical Association's code of ethics for human subjects research.

Patients with age >60 years, multicentric tumors + bilateral, locally advanced disease, metastatic and patients unwilling for BCS were excluded from the study.

All patients underwent comprehensive history gathering and general physical examination, examination of the breast and axilla, ultrasonography, mammography, and Tru-cut biopsy of the breast mass , chest x ray, pelviabdominal ultrasound , hematological and biochemistry work up .

Records of tumor histology were made. Both the margin status and the tumor size on the final histology were noted. Prior to surgery, the patient's breast was tagged with permanent ink to indicate the location of the tumor and any particular procedures planned. The decision to perform a specific oncoplastic procedure on each patient was made individually and was based on the following considerations: the size and location of the tumor (quadrant), the tumor to breast ratio (excision volume), the location of the tumor in relation to the glandular density and nipple areolar complex, and the degree of ptosis of the ipsilateral and contralateral breasts.

Excision of the tumor was done with the intention of leaving at least 1 cm of healthy tissue away from the macroscopic margins. Symmetrisation surgery for the contralateral breast was not provided to patients at the same appointment.

Techniques:

Parallelogram Mastopexy Lumpectomy technique:

The Kraissl lines, which correspond to the natural skin wrinkles and are typically horizontal on the skin, are designed to be

followed by the skin incision lines in this technique, which is most frequently utilized for superior pole or lateral tumors, figure 1, 2.

Round Block Technique:

The round block mammoplasty is a flexible procedure that may be easily modified for tumors in any area of the breast. We initially utilized it for upper-pole cancers. The complicated glandular reconfiguration required by the reduced skin excision makes it a difficult operation. (Figure 3, 4).

Hockey stick technique (Tennis Racquet resection, lateral mammoplasty):

Using a racquet, remove breast tissue similar to a quadrantectomy, a significant section of the upper outer quadrant can be removed by making a direct incision over the tumor from the NAC to the axilla. After broad excision, the NAC is positioned in its ideal location, at the center of the new breast mound, and the reshaping is completed by mobilizing the lateral and central gland into the cavity and suturing it together. This mammoplasty leaves a lengthy radial scar with a periareolar extension over the area of the original tumor, figure 5.

Central quadrantectomy with local dermoglandular flap technique:

With this method, a fresh areola is immediately created with less scars. The use of a local dermo-glandular flap for the therapy of centrally situated malignant tumors appears to be a straightforward and easy technique with good oncological outcomes and very few mild problems. It is typically utilized for small- and medium-sized breasts, figure 6.

Grisotti Technique(B-flap resection):

The B-flap resection (Grisotti Technique) is so named because it involves cutting a B-

shaped incision to remove the breast and reconstruct it. The lower portion of the -B is defined by a disk of skin from the lower part of the breast that is preserved and transposed to the central breast to replace the resected areola and reconstruct the central breast defect (along with an inferior pedicle of glandular tissue). The upper portion of the -B is made up of the circumareolar incision. The NAC and the central cylinder of glandular tissue extending to the pectoralis fascia make up the surgical specimen that results. It was suggested when the tumor is localized in the retroareolar region.

The flap is advanced and rotated to fill the central quadrantectomy defect, with the new areola lying next to the native structure. The medial and inferior borders of the flap are incised down to the fascia. The new areola was a tiny bit smaller than the first one, figure 7.

According to the surgeon recommended quick reconstruction using the right technique for each patient based on the patient's breast volume, the existence of ptosis, and the size and location of the tumor were done. Quadrantectomy was performed on each patient, and sentinel lymph node biopsy was done on the majority of them. The same surgical team used techniques for breast reduction, local flaps, and neighboring tissues to execute breast reconstruction surgeries. Prosthetics or remote flaps weren't employed.

Outcome:

Post-operative follow up: (Tumor grade, vascular invasion, safety margin and axillary involvement), complications: (skin necrosis, hematoma, seroma, dehiscence and infection), patient's satisfaction (psychosocial well, satisfaction with nipple and breast, sexually

well-being and patient satisfaction score) and objective assessment parameters: (cosmetic, areola shape scar, motion, lymphedema and pain) were the outcome of the study.

Statistical analysis

The Statistical Package for the Social Sciences (SPSS version 20.0) program was then used to import the data and perform analysis. For data analysis, the Chi Square Test (X2) was utilized.

RESULTS

Age was distributed as 50.93±7.94 with minimum 32 and maximum 59, regard menopausal status majority were post-menopausal with 63.3% and pre were 36.7%, 23.3% had family history, 80.0% were multiparty and only 23.3% were smoker (Table 1).

Size of tumor was distributed as 4.82±1.78 with minimum 2 and maximum 9.5, and tumor depth was 3.32±1.13 with minimum 1 and maximum 7, all studied group had Mass 20% had Mastalgia, 16.7% with bleeding and 10% had irregular cycle, all group had breast Lump, majority were at right side 60% and regard size majority were D cup with 56.7% and 50% had mild ptosis and 40% had moderate ptosis (Table 2).

56.7% had lymph node, majority were T II, N I and M zero, regard stage majority were AII with 46.7% then BII & AI with 30% and 23.3% respectively (Table 3).

Majority had Parallelogram mastopexy lumpectomy, all had skin excision and drain, only 3.3% had Contralateral procedure and 43.4% had Extent to upper outer Q (Table 4). Majority were grade 2 with 56.7% , 73.3% had vascular invasion, all had free safety margin, 53.3% had Axillary involvement (Table 5).

30% had complication all of them had seroma, and only one case had infection (Table 6).

66.7% were mild and 30.0% had moderate and only one case severe (Table 7)

Satisfaction score was 6.8±1.01 , 20% were excellent and 36.7% were good (Table 8).

26.7% were excellent and 63.3% were good (Table 9).

Complicated cases were significantly older and with larger tumor size and left side and B cup breast size also with Moderate Ptosis and no Ptosis also with higher stage and TN classification and complicated cases sig associated with Parallelogram mastopexy lumpectomy (level 1) (Table10).

Table1: basic demographic and medical history distribution among studied group (N=30)

		Age	
Mean± SD		50.93±7.94	
Median (Range)		53.0 (32-59)	
		N	%
Menopausal status	Post -menopausal	19	63.3
	Pre -menopausal	11	36.7
Family history	No	23	76.7
	Yes	7	23.3
Parity	Multiparty	24	80.0
	Nulliparous	6	20.0
Smoker	No	23	76.7
	Yes	7	23.3
	Total	30	100.0

Table 2: breast tumor characters distribution among studied group (N=30)

Size of the tumor	Mean± SD	4.82±1.78	
	Median (Range)	4.5 (2-9.5)	
Tumor depth below NAC	Mean± SD	3.32±1.13	
	Median (Range)	3.0 (1-7)	
		N	%
Symptoms	Mass	30	100.0
	Irregular cycle	3	10.0
	Bleeding per nipple	5	16.7
	Mastilgia	6	20.0
Breast lump	Present	30	100.0
Side	Bilateral	3	10.0
	Left	9	30.0
	Right	18	60.0
Breast size	B cup	3	10.0
	C cup	10	33.3
	D cup	17	56.7
Ptosis	No ptosis	3	10.0
	Mild ptosis	15	50.0
	Moderate ptosis	12	40.0
Asymmetry	Symmetrical	30	100.0

Table3: tumor staging and characters distribution among studied group (N=30)

		N	%
Lymph node	-VE	13	43.3
	+VE	17	56.7
T	I	14	46.7
	II	16	53.3
N	Zero	14	46.7
	I	16	53.3
M	Zero	30	100.0
STAGE	AI	7	23.3
	AII	14	46.7
	BII	9	30.0
	Total	30	100.0

Table4: surgical intervention characters’ distribution among studied group (N=30)

		N	%
Surgical technique	Central quadrandectomy e dermoglandular flap(level 2)	4	13.3
	Parallelogram mastopexy lumpectomy (level 1)	13	43.3
	Grisotti technique level 2	3	10.0
	Racket mamoplasty level 2	3	10.0
	round block technique (level 1)	7	23.3
Skin excision	Yes	30	100.0
Drain	Yes	30	100.0
Contralateral procedure	No	29	96.7
	Left round block technique	1	3.30
Extent of resection	Extent to upper outer Q	13	43.4
	Retroareolar ,central area	7	10.0
	suprarolar region	10	33.3
	Total	30	100.0

Table 5: post-operative characters distribution among studied group (N=30)

		N	%
Tumor grade	Grade 1	3	10.0
	Grade 2	17	56.7
	Grade 3	10	16.7
Vascular invasion	-VE	8	26.7
	+VE	22	73.3
Safety margin	Free	30	100.0
Axillary involvement	-VE	14	46.7
	+VE	16	53.3
	Total	30	100.0

Table 6: Complication distribution among studied group (N=30)

		N	%
Skin necrosis	No	30	100.0
	Yes	0	0.0
Hematoma	No	24	80.0
	Yes	6	20.0
Seroma	No	21	70.0
	Yes	9	30.0
Dehiscence	No	27	90.0
	Yes	3	10.0
Lymphedema	No	30	100.0
	Yes	0	0.0
Infection	No	29	96.7
	Yes	1	3.3
Overall Complications	No	21	70.0
	Yes	9	30.0
	Total	30	100.0

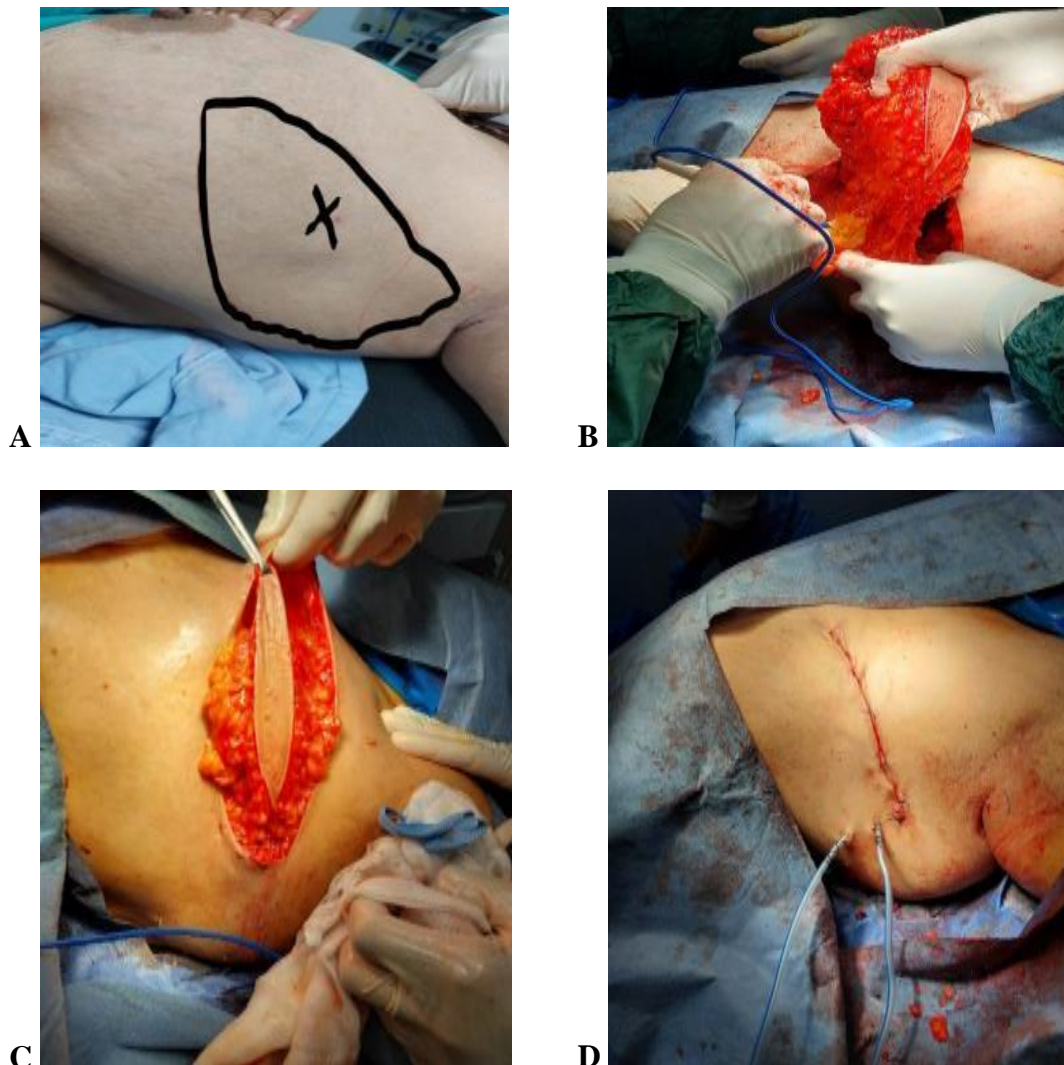


Figure (1): A. Preoperative drawings. B. Removal of island of skin with tumor located deep to it. C. Exterior view of tumor before excision D. Final shape after closure of wound.

DISCUSSION

In the present study, age was distributed as 50.93 ± 7.94 with minimum 32 and maximum 59, regard menopausal status majority were post-menopausal with 63.3% and pre were 36.7%, 23.3% had family history, 80.0% were multiparty and only 23.3% were smokers.

In harmony with our findings, Essa et al. [7] who performed a 40 female patients with CLBC were enrolled in a prospective study, and it was discovered that the patients' average ages were was 53.46 ± 8.65 years (range; 37-72). Regarding the menopausal status in the different techniques, the most women were post-menopausal, 17.6% had family history of breast cancer.

Mahmoud et al. [8] performed a descriptive research conducted on 30 breast cancer

patients and found that age ranged 31-56 years with mean 42.70 ± 7.11 years, and BMI ranged 23.18-34.48 Kg/m^2 with mean 29.07 ± 2.789 Kg/m^2 . Smoking (6.7%), HTN (16.7%), DM (13.3%) and Chemotherapy adjuvant (100.0%) were risk factors.

Bogusevicius et al. [5] revealed that the study group's median age was 55.8 years (SD 13.2; range, 33 to 84), and the median initial tumor size 48 (13.8; 0-85) mm.

Also, Cabello et al. [9] regarding the gland size, they observed that 5 (6.6%) had gland size A, 52 (68.4%) had gland size B, 15 (19.7%) had gland size C and 4 (5.3) had gland size D. Also, majority were T II, regarding stage majority were AII 44.7% followed by AI 31.6% then IIB.

In Shehata et al. [10] study, the tumor was

somewhere between 0.7 cm and 3.4 cm in size, and it could be anywhere between 1.5 to 11.5 cm with a mean distance of 6.35 cm. and regarding stages, majority of patients 23 (46%) were stage II A.

In the present study, the studied group had Mass 20% mastalgia, 16.7% with bleeding per nipple and 10% had irregular cycle, all group had breast Lump, majority were at right side 60% and regard size majority were D cup with 56.7% and 50% had mild ptosis and 40% had moderate ptosis. Our results showed that majority had parallelogram mastopexy lumpectomy, all had skin excision and drain, only 3.3% had contralateral procedure and 43.4% had extent to upper outer Q. The majority were grade 2 with 56.7%, 73.3% had vascular invasion, all had free safety margin, 53.3% had axillary involvement.

Shehata et al. [10] found that regarding the tumor's location, 28 patients had a right breast tumor, while 22 patients had a left breast tumor. The upper outer breast quadrant accounted for 70% of the tumors, and 76% of the patients had clinically positive axillary lymph nodes. When it came to bleeding, the average blood loss was between 100 and 300 cc. After the drainage volume increased to 100 ccs, the drain was removed on the second or third day.

Cabello et al. [9] showed that in comparison to individuals who solely underwent conservative surgery, Higher intraoperative bleeding resulted from the use of oncoplastic patterns, however no instances of postoperative blood transfusion were reported.

In the current study the majority were grade 2 with 56.7%, 73.3% had vascular invasion, all had free safety margin, 53.3% had Axillary involvement.

In Bogusevicius et al. [5] study, at presentation, 61.7% of patients were in IIIA stage, 23.3% were in IIIB stage, and 15% were in IIIC stage.

Moreover, Awad et al. [11] found that the tumor stages were as follows: stage I in 72 patients (90%); stage II in 6 patients (7.5%); and stage III in 2 patients (2.5%). A varied sample size could be the cause of this variation.

Shehata et al. [10] observed that regarding axillary involvement 76% of patients had clinically positive axillary lymph nodes.

In the current study, 30% had complications, all of them had seroma, and only one case had infection.

In agreement with our study, Essa et al. [7] demonstrated that 11 patients (27.5%) experienced surgical problems. 4 patients (10%) experienced a superficial wound infection, which were treated with antibiotics and conservative measures. They were all diabetes. In 4 patients (10%), a hematoma formed.

Cabello et al. [9] demonstrated that 14 (18.4%) had some sort of problem, of the oncoplastic surgery group.

Infection (1.9%), liponecrosis (3.3%), skin necrosis (0.5%), hematoma (2.5%), seroma (1.0%), delayed wound healing (2.2%), nipple necrosis (0.4%), and seroma (1.0%) were among the postoperative complications that occurred in 14.3% of patients, according to a recent systematic study of OBCS (13).

Mahmoud et al. [8] reported that skin necrosis (6.7%), partial NAC necrosis (0.0%), NAC necrosis (0.0%), infection (3.3%), wound dehiscence (6.7%), hematoma (3.3%), and fat necrosis (6.7%) were the most common complications.

Our findings revealed that Satisfaction score of subjective assessment was 6.8 ± 1.01 , 20% were excellent and 36.7% were good and 43.3% were poor and regarding objective assessment parameters and score distribution 26.7% were excellent and 63.3% were good and 10% were poor.

These outcomes mirror those that have been reported by Essa et al. [7], In 27 individuals, the cosmetic results were rated as excellent. (67.5%), good in 11 patients (27.5%).

Bazzarelli et al. [12] stated that following OBCS and mastectomy, 68/100 and 75/100, respectively, were the median patient scores for "satisfaction with breast".

In Shehata et al. [10] 90% of patients reported being satisfied with the cosmetic outcome, and 10% were satisfied with the surgeon's assessment of the final breast form. in comparison to Zaha et al. [14] In a study of 40 patients who had the modified round block procedure, it was good in 65% of cases, fair in

32.5 % of cases, and bad in 2.5 % of cases. Denewer et al. [15] reported 50 patients underwent reduction mammoplasty; 64% reported good results, 30% reported fair results, and 6% reported poor outcomes in terms of cosmetics. The outcomes of the research project conducted by Bogusevicius *et al.* [5] research found that 87.2% of patients with locally advanced breast cancer who received oncoplastic surgery had adequate to excellent cosmetic outcomes.

According to our research, 100% of patients had great Areola shape scars, good motion, no lymphedema, although 43.3% of patients had pain.

The problematic cases in the current study were much older, had higher tumor sizes, and had left side and B cup breast size also with Moderate Ptosis and no Ptosis also with higher stage and TN classification and complicated cases significant associated with Parallelogram mastopexy lumpectomy (level 1).

Conclusions

Techniques for oncoplastic breast surgery achieve adequate safety margin with better aesthetic outcomes with minimal complication.

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Table S1: Pain (VAS score) distribution among studied group (N=30)

		N	%
Pain VAS score 4.85±1.25	Mild	20	66.7
	Moderate	9	30.0
	Sever	1	3.3
	Total	30	100.0

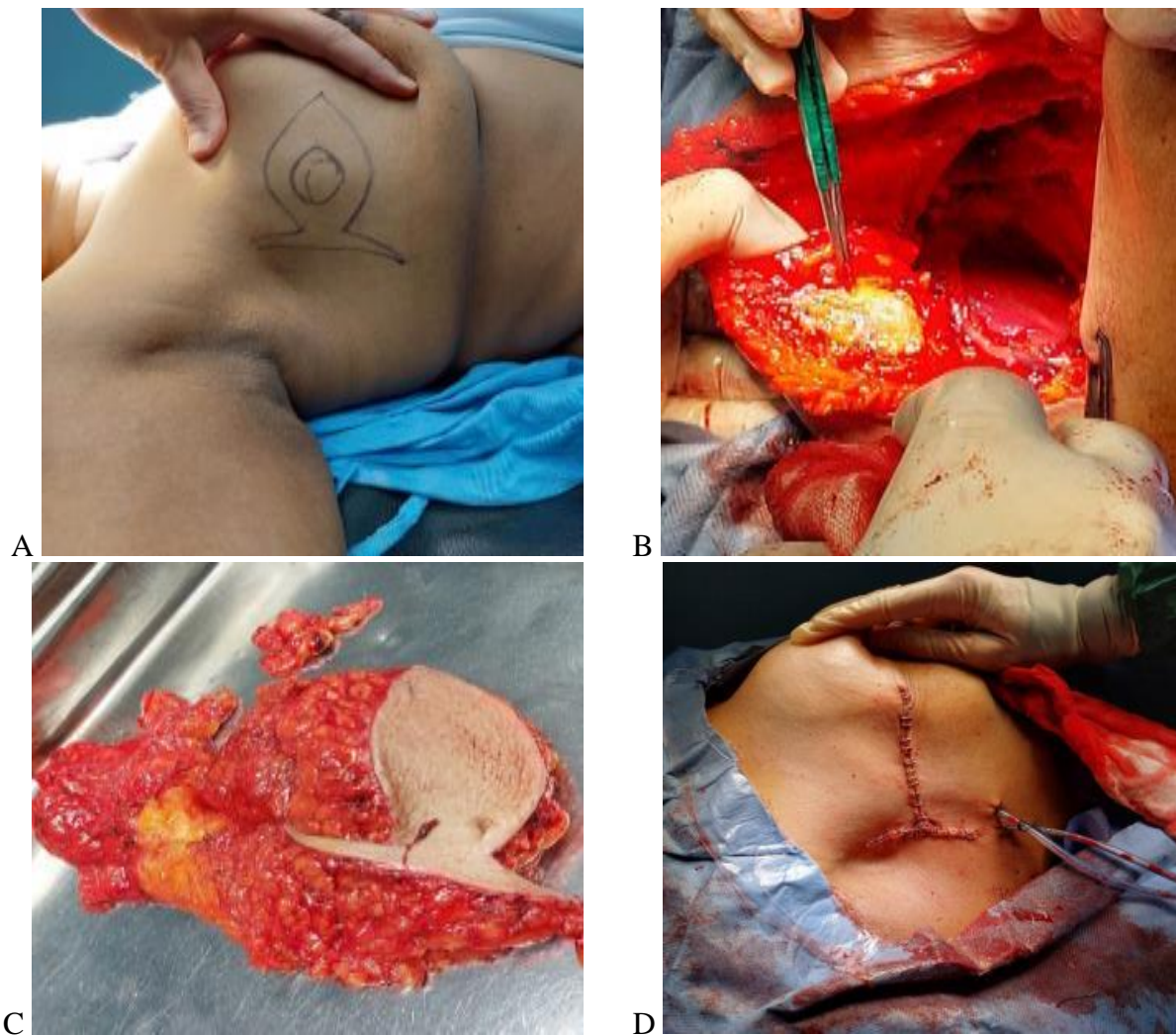


Figure (S1): A. Preoperative drawings. B. During axillary clearance C. After excision of tumor mass D. Final postoperative shape of wound .(this technique reduce incidence of dog ear at axilla)

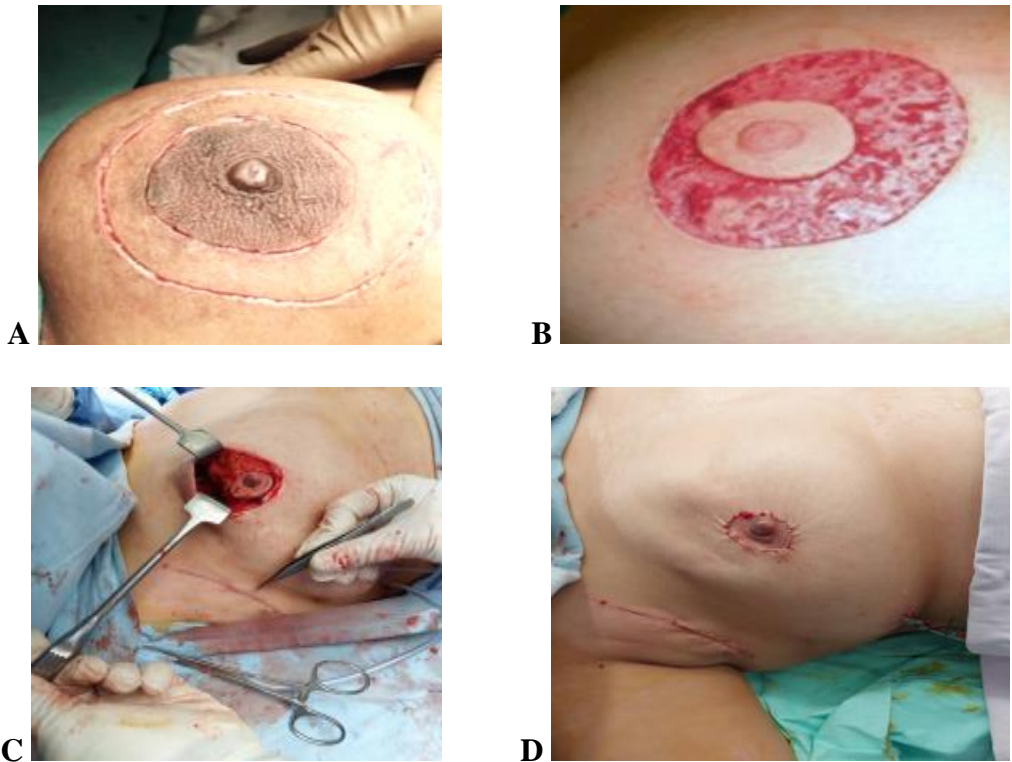


Figure (S2): A. Pre-operative drawing. B. De-epithelisation. C. Full circumcircision of the areolar and access to the breast paranchyma for tumor resection + axillary separation incision for ALND
D. Skin closure and final shape.

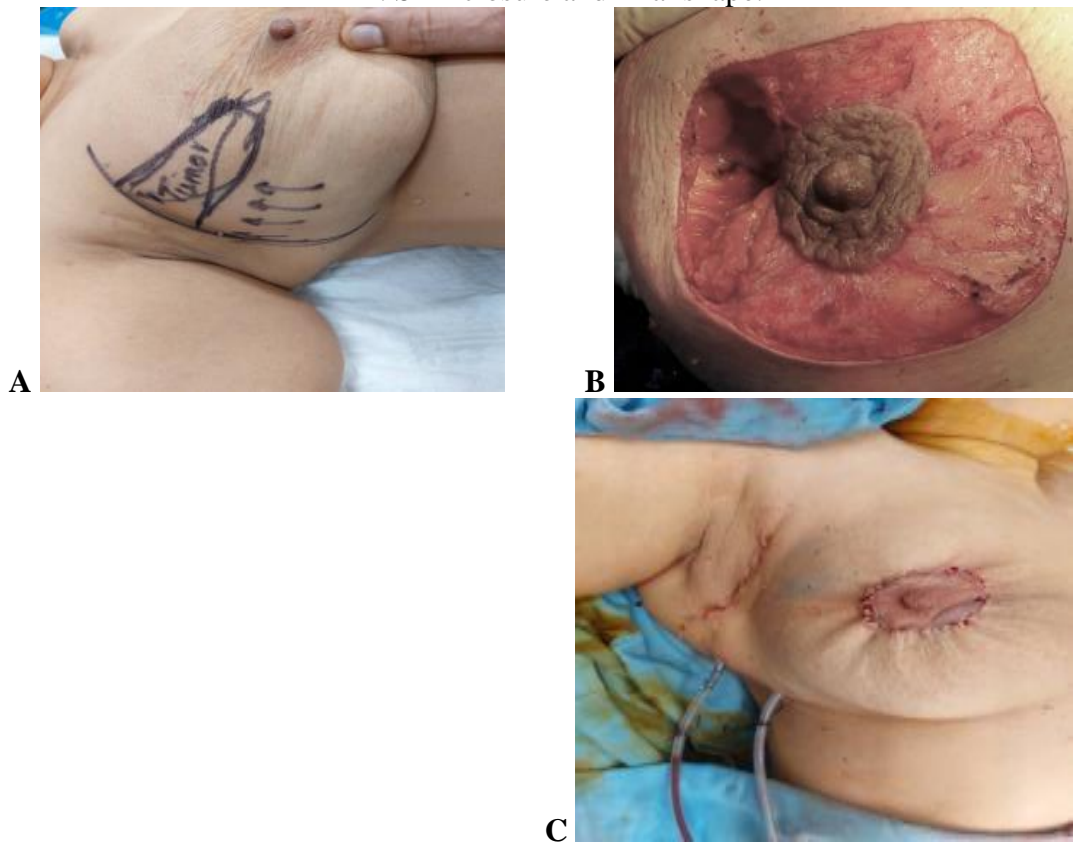


Figure (S3): A. Preoperative drawing. B. Deepithelizaion. C. Final shape postoperative

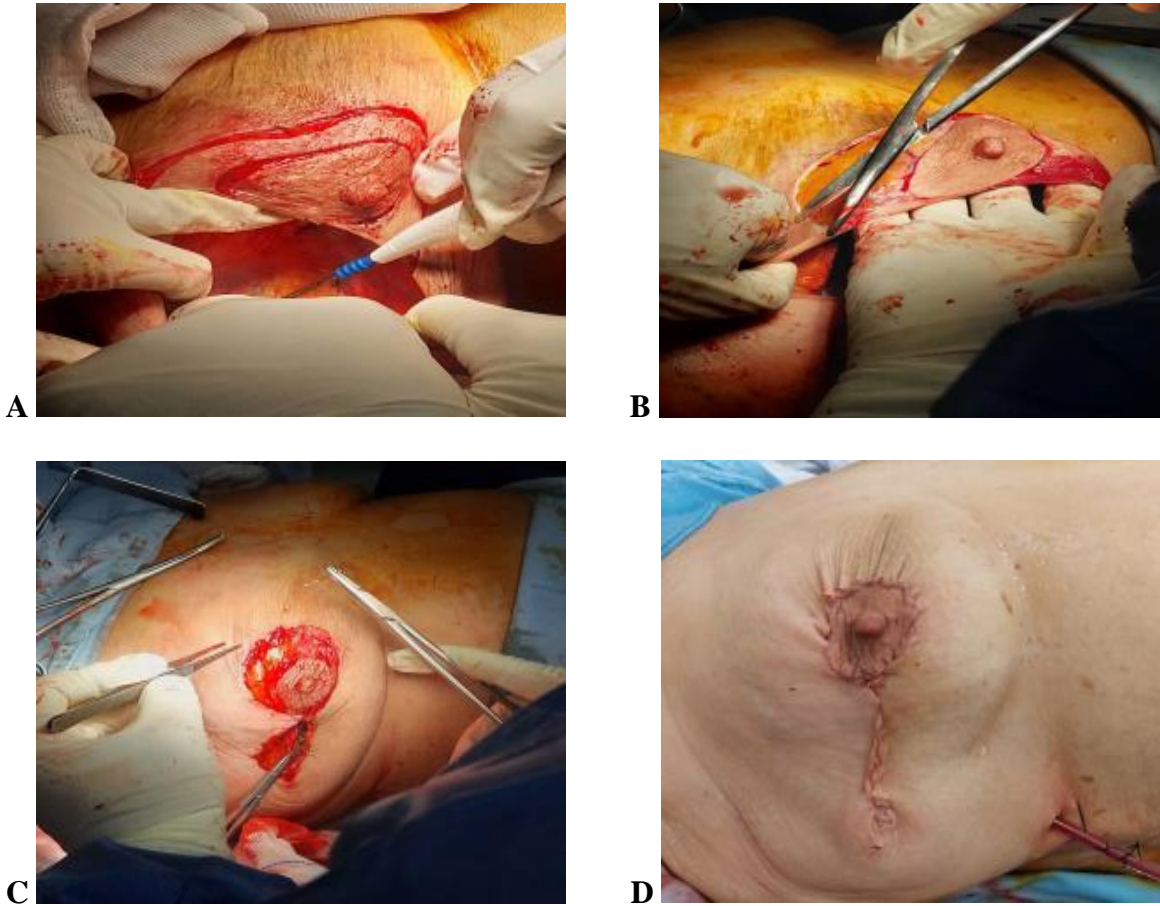


Figure (S4): A. de-epithelization and resection of tumor. B. During de-epithelization C. Closure, reapproximation of areola and skin. D. Final racquet shape appearance.

A

B



Figure (S5): A. Excision of tumor and preparation of local dermoglandular flap. B. Final shape postoperative

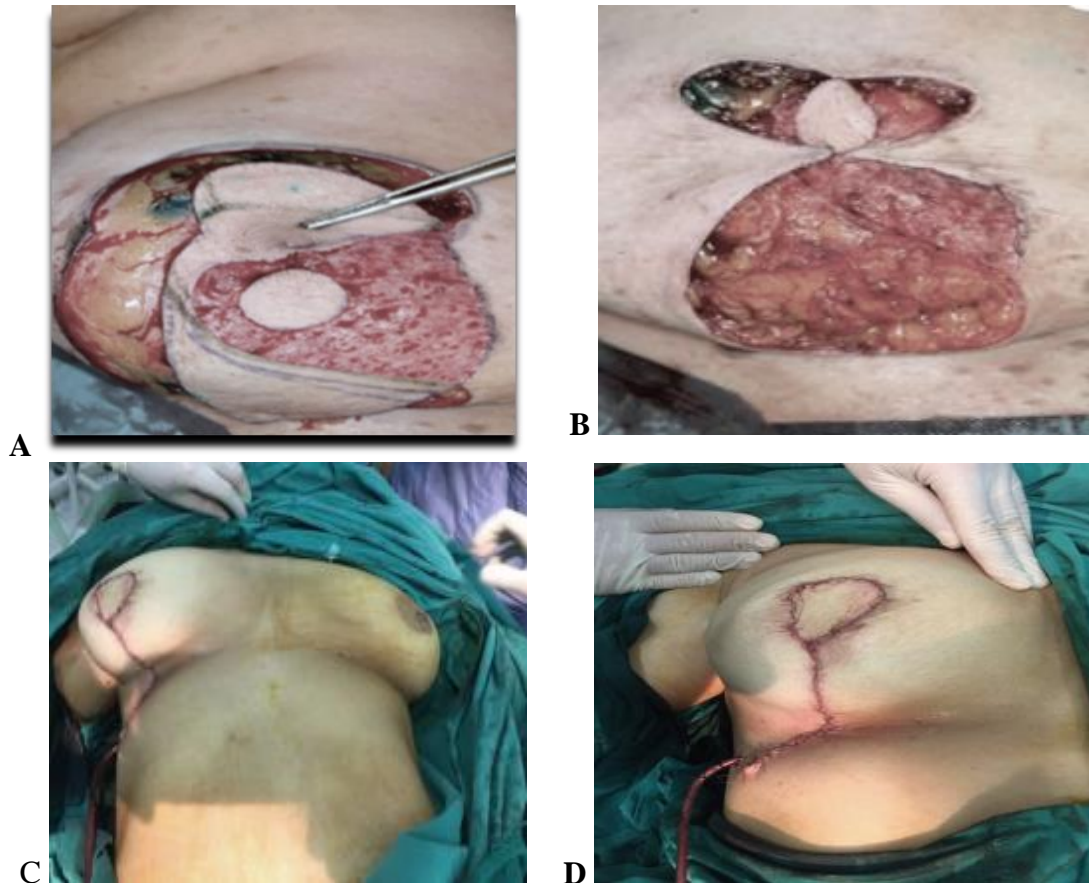


Figure (S6): A. De-epithelization and tumour excision. B. Re-approximation of skin and reconstitution C. Final shape in comparison in contralateral side. D. Final shape postoperative result.

Citation:

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