

# ONCOPLASTIC BREAST SURGERY FOR EARLY BREAST CANCER

By

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## ABSTRACT

**Background:** Breast cancer is the most commonly diagnosed cancer worldwide, and is the second most common cause of cancer-related deaths between females, with about 18000 new cases diagnosed among female in 2014 in Egypt.

**Objective:** To evaluate the oncological outcomes and patient satisfaction on the esthetical side with oncoplastic surgery for patients with early stage breast cancer.

**Patients and Methods:** The present study was enrolled from January 2019 to January 2020 at Al- Azhar University Hospitals and Nasser's Institute Hospital for Research and Treatment. This were a descriptive study done on 30 participants with breast cancer who met inclusion criteria underwent various level II, III Oncoplastic breast surgery. The oncological and aesthetic satisfaction was evaluated.

**Results:** Our study results showed statistically significant difference between surgeons score on cosmetic outcome as regards wound dehiscence and fat necrosis.

**Conclusion:** Oncoplastic breast surgery techniques are effective and results in improved patient-reported outcomes in early breast cancer.

**Keywords:** Oncoplastic, Breast Surger, Early Breast Cancer.

## INTRODUCTION

Breast cancer represent 32% of cancers diagnosed in female population in Egypt with about 18000 new cases diagnosed among female in 2014 in Egypt (*Ibrahim et al., 2014*). Mortality rates had steadily declined since the 1970s. This decline is thought to be partly the result of advances in adjuvant therapy (*Kohler et al., 2015*).

Breast-conserving surgery (BCS) followed by adjuvant radiotherapy, was documented to be equal to mastectomy with regard to oncological outcomes (*Christiansen et al., 2018*), and had to a

large extent replaced total mastectomy in the last few decades. Oncoplastic breast surgery (OBS) was developed with the aim of further improving the esthetic and functional outcomes of BCS (*Campbel & Romics, 2017* and *Weber et al., 2017*).

Overall, oncoplastic breast reconstruction leads to better aesthetic outcomes and higher patient satisfaction relative to breast conserving oncologic surgery without reconstruction (*Piper et al., 2015*). *Bogusevicius et al. (2014)* found that 87.2% of patients had good to excellent aesthetic outcomes in patients

with locally advanced breast cancer undergoing oncoplastic surgery.

*Losken et al. (2014)* stated that the complication rate with oncoplastic surgery techniques is around 16%. Complications may be divided into two groups. First, there are the so-called early complications such as delayed healing, hematoma, seroma, abscess, skin or NAC necrosis. The second group describes the late complications, involving fibrosis of the scar, keloids and steatonecrosis. Preoperative antibiotic prophylaxis is very important in minimizing these complications occurrence, and may be extended in the following day on case to case basis (*Shortt et al., 2014*).

A rational approach is needed to enable surgeons to act preventively on individual risk factors (obesity, smoking, diabetes, thyroid disorders, and hypertension) to lower complication rate in the postoperative period, as these factors are recognized as independently significant for the development of complications (*Hart et al., 2017*).

**The present work aimed to** evaluate the oncological outcomes and patient satisfaction on the esthetical side with oncoplastic surgery for patients with early stage breast cancer.

## PATIENTS AND METHODS

The present study was enrolled from January 2019 to January 2020 at Al-Azhar University Hospital and Nasser's Institute Hospital for Research and Treatment. This were a descriptive study done on (30) participants.

Informed consent was obtained from each subject before the procedure.

Hospital administrative approval was taken to perform the study and collect data.

### Inclusion criteria:

1. Patients with a pre-operative diagnosis (clinical examination, imaging and needle biopsy) of Tis, T1 and T2 tumors.
2. No skin involvement.
3. > 10% volume resection.
4. Tumor located in the lower or medial poles or centrally.

### Exclusion criteria:

1. Breast cup size A and non ptotic B.
2. Contraindications for general anesthesia.
3. First or second trimester of pregnancy.
4. Previous receipt of radiotherapy.
5. Diffuse micro-calcifications within the breast.
6. Inflammatory breast cancer (Paget's disease of the breast)
7. Older age (patients older than 60 years of age).
8. Patients who received a previous breast surgery.
9. Negative margin excision not possible.
10. Multicentric breast cancer
11. Patients with collagen vascular disease (e.g. Scleroderma and Systemic Lupus Erythromatosus).

Eligible patients underwent various level II, III oncoplastic breast surgery, including but not limited to superior pedicle mammoplasty/inverted T, Superior pedicle mammoplasty, batwing,

Inferior pedicle mammoplasty, racquet mammoplasty/radial scar, nipple sparing mastectomy and vertical-scar mammoplasty. Photographs were taken before and after the procedure, and were shown to patients on the follow up visit immediately following the operation.

Patients were required to record their level of aesthetic satisfaction and quality of life on a likert scale from 0 to 5, with responses '1' indicating complete dissatisfaction, '2' indicating some dissatisfaction, '3' indicating partial satisfaction, '4' indicating satisfaction and '5' indicating complete satisfaction. In addition to the previous scores, patients were asked to fill a translated form of the patient satisfaction and cosmetic outcome (Appendices A, C). Fellow surgeons were also asked to fill an un translated form of Surgeons- score on cosmetic outcome (*Chan et al., 2010*).

**Appendix (B):** Quality of life was recorded using similar scoring procedure with scores ranging from '1' to '10', with level '1' indicating poor quality of life and level '10' indicating excellent quality of life. Surgical margin involvement was measured by millimeters from resection margin. Patients were received chemotherapy, radiotherapy endocrine

therapy or Trastuzumab therapies per clinical and radiation oncologists plan.

#### **Statistical analysis:**

Recorded data were analyzed using the statistical package for the social sciences, version 20.0 (SPSS Inc., Chicago, Illinois, USA). Quantitative data were expressed as mean $\pm$  standard deviation (SD)range, median, and inter-quartile range (IQR). Qualitative data were expressed as frequency and percentage.

#### **The following tests were done:**

- A one-way analysis of variance (ANOVA) when comparing between more than two means.
- Kruskal Wallis test: for multiple-group comparisons in non-parametric data.
- Chi-square ( $\chi^2$ ) test of significance was used in order to compare proportions between qualitative parameters.
- The confidence interval was set to 95% and the margin of error accepted was set to 5%.
- P-value $\leq$  0.05 was considered significant.

## RESULTS

Age (years) ranged 31-56, with mean 42.70±7.11, Weight (kg) ranged 59-155, with mean 82.97±17.29, Height (cm) ranged 70-180, with mean 162.90±18.97 and BMI (wt/(ht)<sup>2</sup>) ranged 23.18-34.48, with mean 29.07±2.789 (Table 1).

**Table (1): Distribution of cases according to their baseline characteristics regarding Age (years), Weight (kg), Height (cm) and BMI (wt/(ht)<sup>2</sup>) (n=30)**

Baseline characteristics	Range	Mean±SD
Age (years)	31-56	42.70±7.11
Weight (kg)	59-155	82.97±17.29
Height (cm)	70-180	162.90±18.97
BMI (wt/(ht) <sup>2</sup> )	23.18-34.48	29.07±2.78

Smoking (6.7%), HTN (16.7%), DM (13.3%) and Chemotherapy adjuvant (100.0%) of risk factors (Table 2).

**Table (2): Distribution of cases according to their risk factors regarding smoking, HTN, DM, Chemotherapy, Invasive carcinoma, In situ carcinoma and Invasive/in situ(n=30)**

Risk factors		No.	%
Smoking	Negative	28	93.3%
	Positive	2	6.7%
HTN	Negative	25	83.3%
	Positive	5	16.7%
DM	Negative	26	86.7%
	Positive	4	13.3%
Chemotherapy	Adjuvant	30	100.0%

Invasive carcinoma (76.7%), in situ carcinoma (13.3%) and invasive/in situ (16.7%) were of tumor histology (Table 3).

**Table (3): Distribution of cases according to their risk factors regarding smoking, HTN, DM, chemotherapy, Invasive carcinoma, In situ carcinoma and Invasive/in situ (n=30)**

Tumor histology		No.	%
Invasive carcinoma	Negative	7	23.3%
	Positive	23	76.7%
In situ carcinoma	Negative	26	86.7%
	Positive	4	13.3%
Invasive/in situ	Negative	25	83.3%
	Positive	5	16.7%

The median of before were 16 and after were 6 of axillary surgery (Table 4).

**Table (4): Distribution of cases according to their tumor histology regarding axillary dissection and sentinel biopsy (n=30)**

Axillary surgery		Total (n=30)
Before Axillary dissection	Range [Median(IQR)]	12-23 [16 (3)]
After Axillary dissection	Range [Median(IQR)]	0-14 [6 (5)]
Sentinel biopsy	Done 0/2	1 (3.3%)
	Negative	29 (96.7%)

The Superior-medial 6.7%, Superior 0%, Grisotti 6.7%, inferior pedicle 20%, Batwaing 10%, Round block 0%, Latissmus dorsi 6.7%, Thoracoepigastric flap 0%, Burrwo's triangle 6.7%, Lateral mammoplasty 13.3%, medial mammoplasty 6.7% and J mammoplasty 13.3% of mammoplasty technique (**Table 5**).

**Table (5): Distribution of cases according to their mammoplasty technique regarding Superior-medial, Superior, Grisotti, inferior pedicle, Batwaing, Round block, Latissmus dorsi, Thoracoepigastric flap, Burrwo's triangle, Lateral mamoplasty, medial mammoplasty and J mammoplast (n=30)**

Mammoplasty technique	No.	%	
Superior-medial	Negative	28	93.3%
	Positive	2	6.7%
Superior	Negative	30	100.0%
	Positive	0	0.0%
Grisotti	Negative	28	93.3%
	Positive	2	6.7%
Inferior pedicle	Negative	24	80.0%
	Positive	6	20.0%
Batwaing	Negative	27	90.0%
	Positive	3	10.0%
Round block	Negative	30	100.0%
	Positive	0	0.0%
Latissmus dorsi	Negative	28	93.3%
	Positive	2	6.7%
Thoracoepigastric flap	Negative	30	100.0%
	Positive	0	0.0%
Burrwo's triangle	Negative	28	93.3%
	Positive	2	6.7%
Lateral mamoplasty	Negative	26	86.7%
	Positive	4	13.3%
Medial mamoplasty	Negative	28	93.3%
	Positive	2	6.7%
J mammoplasty	Negative	26	86.7%
	Positive	4	13.3%

The Skin necrosis 6.7%, Partial NAC necrosis 0%, NAC necrosis 0%, Infection 3.3%, wound dehiscence 6.7%,

Hematoma 3.3% and Fat necrosis 6.7% of complications (**Table 6**).

**Table (6):Distribution of cases according to their complications regarding Skin necrosis, Partial NAC necrosis, NAC necrosis, Infection, Wound dehiscence, Hematoma and Fat necrosis (n=30)**

Complications		No.	%
Skin necrosis	Negative	28	93.3%
	Positive	2	6.7%
Partial NAC necrosis	Negative	30	100.0%
	Positive	0	0.0%
NAC necrosis	Negative	30	100.0%
	Positive	0	0.0%
Infection	Negative	29	96.7%
	Positive	1	3.3%
Wound dehiscence	Negative	28	93.3%
	Positive	2	6.7%
Hematoma	Negative	29	96.7%
	Positive	1	3.3%
Fat necrosis	Negative	28	93.3%
	Positive	2	6.7%

No (6.7%) and Yes (93.3%) of are you satisfied With your postoperative appearance?, also asymmetric (33.3%), no difference (3.3%), Normal (53.3%), Without Nipple (6.7%) and Wound signs (3.3%) of compare to untreated breast, how is the difference of the treated breast?, also No (96.7%), Subcutaneous Mastectomy With implant (3.3%) of if you choose again, will you choose another kind of breast surgery?, while Implant

(3.3%), Mastopexy of another breast (3.3%), Nipple reconstruction (6.7%), nipples reconstruction (3.3%) and No (83.3%) of will you consider further surgery for reshaping of the treated breast?. No statistically significant difference between surgeons outcome according to baseline characteristics. Fair were (3.3%), good (40%) and excellent (56,7%) of Surgeon's score on cosmetic outcome (**Table 7**).

**Table (7): Distribution of cases according to their patient questionnaire for satisfaction and cosmetic outcome (n=30), Surgeon's score on cosmetic outcome**

Patient questionnaire for satisfaction and cosmetic outcome		No.	%
A. Are you satisfied With your postoperative appearance?	No	2	6.7%
	Yes	28	93.3%
B. Compare to untreated breast, how is the difference of the treated breast?	Asymmetric	10	33.3%
	No difference	1	3.3%
	Normal	16	53.3%
	Without Nipple	2	6.7%
C. If you choose again, will you choose another kind of breast surgery?	Wound signs	1	3.3%
	No	29	96.7%
D. Will you consider further surgery for reshaping of the treated breast?	Subcutaneous Mastectomy With implant	1	3.3%
	Implant	1	3.3%
	Mastopexy of Another breast	1	3.3%
	Nipple reconstruction	2	6.7%
	Nipples reconstruction	1	3.3%
Surgeon's score on cosmetic outcome	No	25	83.3%
	Fair	1	3.3%
	Good	12	40.0%
Surgeons' score on cosmetic outcome	Excellent	17	56.7%

There were no statistically significant difference between surgeon's outcome according to baseline characteristics. There were statistically significant difference between surgeon's outcome

according to smoking, DM and HTN. While There were no statistically significant difference between surgeon's outcome according to their tumor histology (**Table 8**).

**Table (8): Comparison between surgeon's score on cosmetic outcome according to baseline characteristics, risk factors and tumor histology**

Parameters \ surgeon's score on cosmetic outcome	Fair (n=1)	Good (n=12)	Excellent (n=17)	P-value
<b>Baseline characteristics</b>				
<b>Age (years)</b>				
Mean $\pm$ SD	50.00 $\pm$ 0.00	41.92 $\pm$ 7.66	42.82 $\pm$ 6.89	0.564
Range	50-50	33-54	31-56	
<b>Weight (kg)</b>				
Mean $\pm$ SD	67.00 $\pm$ 0.00	88.00 $\pm$ 23.43	80.35 $\pm$ 11.05	0.335
Range	67-67	59-155	66-100	
<b>Height (cm)</b>				
Mean $\pm$ SD	170.00 $\pm$ 0.00	158.67 $\pm$ 28.40	165.47 $\pm$ 8.60	0.608
Range	170-170	70-175	150-180	
<b>BMI (wt/(ht)<sup>2</sup>)</b>				
Mean $\pm$ SD	23.18 $\pm$ 0.00	29.26 $\pm$ 2.69	29.28 $\pm$ 2.59	0.094
Range	23.18-23.18	24.24-33.66	25.21-34.48	
<b>Risk factors</b>				
<b>Smoking</b>				
Negative	0 (0.0%)	11 (91.7%)	17 (100.0%)	<0.001
Positive	1 (100.0%)	1 (8.3%)	0 (0.0%)	
<b>HTN</b>				
Negative	0 (0.0%)	10 (83.3%)	15 (88.2%)	0.071
Positive	1 (100.0%)	2 (16.7%)	2 (11.8%)	
<b>DM</b>				
Negative	0 (0.0%)	10 (83.3%)	16 (94.1%)	0.024
Positive	1 (100.0%)	2 (16.7%)	1 (5.9%)	
<b>Tumor histology</b>				
<b>Invasive carcinoma</b>				
Negative	1 (100.0%)	2 (16.7%)	4 (23.5%)	0.167
Positive	0 (0.0%)	10 (83.3%)	13 (76.5%)	
<b>In situ carcinoma</b>				
Negative	1 (100.0%)	11 (91.7%)	14 (82.4%)	0.709
Positive	0 (0.0%)	1 (8.3%)	3 (17.6%)	
<b>Invasive/in situ</b>				
Negative	0 (0.0%)	10 (83.3%)	15 (88.2%)	0.071
Positive	1 (100.0%)	2 (16.7%)	2 (11.8%)	

Using: F-One Way Analysis of Variance & x<sup>2</sup>- Chi-square test

There were statistically significant decrease median in good and excellent compared to fair according to lymph nodes. While no statistically significant difference between surgeons' outcome

according to their superior-medial. However were statistically significant difference between surgeon's outcome according to their wound dehiscence and fat necrosis (**Table 9**).

**Table (9): Comparison between surgeon's score on cosmetic outcome according to mammoplasty technique, axillary surgery and complications**

Parameters	Surgeon's score on cosmetic outcome	Fair (n=1)	Good (n=12)	Excellent (n=17)	P-value
<b>Axillary surgery</b>					
Before Axillary dissection		15 (IQR 0)b	17 (IQR 3)a	15 (IQR 3)b	0.046
After Axillary dissection		13 (IQR 0)a	6 (IQR 5)b	6 (IQR 6)b	0.012
<b>Mammoplasty technique</b>					
<b>Superior-medial</b>					
Negative		0 (0.0%)	12 (100.0%)	16 (94.1%)	<0.001
Positive		1 (100.0%)	0 (0.0%)	1 (5.9%)	
<b>Grisotti</b>					
Negative		1 (100.0%)	10 (83.3%)	17 (100.0%)	0.200
Positive		0 (0.0%)	2 (16.7%)	0 (0.0%)	
<b>Inferior pedicle</b>					
Negative		1 (100.0%)	9 (75.0%)	14 (82.4%)	0.780
Positive		0 (0.0%)	3 (25.0%)	3 (17.6%)	
<b>Batwaing</b>					
Negative		1 (100.0%)	10 (83.3%)	16 (94.1%)	0.599
Positive		0 (0.0%)	2 (16.7%)	1 (5.9%)	
<b>Latissmus dorsi</b>					
Negative		1 (100.0%)	12 (100.0%)	15 (88.2%)	0.441
Positive		0 (0.0%)	0 (0.0%)	2 (11.8%)	
<b>Burrwo's triangle</b>					
Negative		1 (100.0%)	12 (100.0%)	15 (88.2%)	0.441
Positive		0 (0.0%)	0 (0.0%)	2 (11.8%)	
<b>Lateral mamoplasty</b>					
Negative		1 (100.0%)	12 (100.0%)	13 (76.5%)	0.171
Positive		0 (0.0%)	0 (0.0%)	4 (23.5%)	
<b>Medial mamoplasty</b>					
Negative		1 (100.0%)	11 (91.7%)	16 (94.1%)	0.932
Positive		0 (0.0%)	1 (8.3%)	1 (5.9%)	
<b>J mammoplasty</b>					
Negative		1 (100.0%)	10 (83.3%)	15 (88.2%)	0.858
Positive		0 (0.0%)	2 (16.7%)	2 (11.8%)	
<b>Complications</b>					
<b>Skin necrosis</b>					
Negative		1 (100.0%)	10 (83.3%)	17 (100.0%)	0.200
Positive		0 (0.0%)	2 (16.7%)	0 (0.0%)	
<b>Infection</b>					
Negative		1 (100.0%)	11 (91.7%)	17 (100.0%)	0.460
Positive		0 (0.0%)	1 (8.3%)	0 (0.0%)	
<b>Wound dehiscence</b>					
Negative		0 (0.0%)	11 (91.7%)	17 (100.0%)	<0.001
Positive		1 (100.0%)	1 (8.3%)	0 (0.0%)	
<b>Hematoma</b>					
Negative		1 (100.0%)	11 (91.7%)	17 (100.0%)	0.460
Positive		0 (0.0%)	1 (8.3%)	0 (0.0%)	
<b>Fat necrosis</b>					
Negative		0 (0.0%)	11 (91.7%)	17 (100.0%)	<0.001
Positive		1 (100.0%)	1 (8.3%)	0 (0.0%)	

Using: x<sup>2</sup>- Chi-square test; k- Kruskal Wallis test

Homogenous groups had the same letter "a,b,c". through Mann-Whitney test;

## DISCUSSION

Oncoplastic breast surgery (OBS) was developed as an extension of breast-conserving surgery (BCS) in an effort to improve esthetic and functional outcome following surgery for breast cancer (*Rose et al.*, 2020).

The current study aimed to evaluate oncoplastic surgery outcomes and patient satisfaction in patients with early stage breast cancer. Regarding the baseline characteristics of the patients in our study we found that, the mean age of patients was ( $42.70 \pm 7.11$ ), the mean weight was ( $82.97 \pm 17.29$ ), the mean height was ( $162.90 \pm 18.97$ ) and mean BMI was ( $29.07 \pm 2.78$ ). Our results agreed with *Green et al.* (2011), they reported similar mean height measures, while this value by *Johansen et al.* (2012) was 61 years old with 25.3% being younger than 50, in another study, the mean of patients age was 50 (*Deutsch and Flickinger*, 2013). Our results consistent with the demographic data by *Zeeneldin et al.* (2014) who claimed the peak incidence of breast cancer between 40 and 59 years old. Also, our results agreed with the data of *Mahmoud and Saleh* (2020).

Increased body mass index (BMI) has been associated with the risk of developing breast cancer. It has been demonstrated that breast cancer patients with higher BMI estimated as obesity or overweight have a worse prognosis disease regardless of tumor subtype (*Calle et al.*, 2013). In accordance with our results, *Singh and Jangra* (2013) found out significant association between BMI and breast cancer.

Risk factors were determined in the present study and results showed that

chemotherapy adjuvant was delivered to all patients (100%); 76.7% had invasive carcinoma, 16.7% had invasive/in situ carcinoma, 16.7% presented with HTN, 13.3% had DM, 13.3% had in situ carcinoma and 6.7% were smokers.

In agreement with our results, *Hannah* (2019) also found that the most common tumor histopathologies were invasive ductal carcinoma in 58.3%, followed by ductal carcinoma in situ in 16.6%, and invasive lobular carcinoma in 12.5%. *Erić et al.* (2018) found that invasive ductal carcinoma was the most frequent histological type of tumor. Also, *Goldvaser et al.* (2017) found that most common histology was invasive ductal carcinoma 80.8%, followed by invasive lobular carcinoma 12.4%. Also, *Roshdy et al.* (2015) reported that the majority 93.3% of the tumors were confirmed as invasive ductal carcinoma, followed by invasive lobular carcinoma 3.3% and medullary carcinoma 3.3%.

Our results disagreed with *Currie et al.* (2013), *Adamson et al.* (2019), and *Mahmoud & Saleh* (2020).

Data regarding history of smoking in other studies were different as *Goldvaser et al.* (2017) revealed that 28.2% of patients had a history of smoking.

As regards axillary surgery, sentinel biopsy was done in 3.3% of patients. Before axillary dissection, the median range of patients were 16 while after axillary dissection, the median range of patients was 6.

Sentinel node biopsy is considered the gold standard for nodal staging in patients with early breast cancer (*Franceschini et al.*, 2015). In contrast to our results,

*Tanaka et al. (2010)* performed sentinel lymph node biopsy in all cases. Sentinel lymph node biopsy was performed in 64.5% of the patients in the study of *Çakmak et al. (2020)*.

In the work of *Roshdy et al. (2015)*, all patients underwent Levels I and II axillary dissection.

In the current study, results showed mammoplasty technique was inferior pedicle in 20%, superior-medial, Lateral mammoplasty 13.3% of patients, J-mammoplasty in 13.3% of patients. Batwing in 10% of patients, Latissimus dorsi 6.7% of patients, Burrwo's triangle 6.7% of patients, medial mammoplasty 6.7%, Grisotti in 6.7% of patients in each category. Superior pedicle 0% of patients, Round block 0% of patients, Thoracoepigastric flap in 0% of patients.

The choice of the oncoplastic techniques depends on the achievement of free safety margins, the breast volume, and its ptotic degree. For example, Grisotti technique is suitable in ptotic breasts while reduction vertical mammoplasty is suitable for large and huge breasts (*Farouk et al., 2015*).

In contrast, the most common pedicle used in *Aggarwal et al. (2016)* cohort was superomedial (62%) followed by inferior pedicle (34%). In *Adimulam et al. (2014)*, 48.5% had curvilinear incision with breast parnchymal advancement flap.

As regards complications, the present study results showed that skin necrosis; wound dehiscence and fat necrosis appeared in 6.7% of patients. No patients had partial NAC necrosis or NAC

necrosis. Infection and hematoma appeared in 3.3% of patients.

In the literature, the most common complications following therapeutic mammoplasty were minor wound infections and haematoma formation, followed by delayed wound healing and minor wound dehiscence (*McIntosh and O' Donoghue, 2012*).

Also, similar results were obtained by *van Paridon et al. (2017)* recorded postoperative complications including seroma in 4.3%), hematoma in 2.1%, and localized fat necrosis in 2.1%. *Farouk et al. (2015)* recorded wound dehiscence in 13.3 %, donor site seroma in 13.3 %, and surgical site infection in 3.3 % of cases. A study by *Gulcelik et al. (2011)* using the inferior pedicle reported an incidence of 3% minor wound dehiscence, 1% major wound dehiscence, 1% areolar necrosis, and 5% seroma.

In contrast to the present study, *Dal et al. (2012)* recorded wound infections in 66.7% of cases, with 22.2% experiencing a second wound infection. Hematoma, seroma or fat necrosis did not occur in any patients. In the work of *Mahmoud and Saleh (2020)*, complications occurred only in 16% of cases, in the form of hematoma (4%) and infection (8%).

A higher complications rate was reported by *Denewer et al. (2013)* on using an inferior pedicle. They reported an incidence of 17.6% of wound dehiscence, 14.7% of seroma, and 3% of partial areolar necrosis. *Roshdy et al. (2015)* stated that neither areolar necrosis nor wound dehiscence was encountered.

In our study, patient questionnaire answers regarding satisfaction and

cosmetic outcome revealed that (93.3%) of patients were satisfied with their postoperative appearance. (53.3%) of patients decided that the untreated breast was normal compared to treated breast while (33.3%) decided that the untreated breast was asymmetrical compared to treated breast.

Excellent patient satisfaction with oncoplastic breast surgery was also obtained in some studies (*Franceschini et al., 2015, Piper et al., 2015 and Campbell & Romics, 2017*).

Also, in agreement with our results, *Chan et al. (2010)* determined that 94% of patients were very satisfied or moderately satisfied with the cosmetic outcome; 85% of patients felt that the treated breast was nearly identical or only slightly different from the untreated breast.

*Haloua et al. (2013)* observed good cosmetic outcome in 84% to 89% of patients. In the work of *Meretoja et al. (2010)*, the use of oncoplastic techniques achieved negative margins with acceptable cosmetic results in the majority (84%) of patients. In that of *Adimulam et al. (2014)*, 96% of patients were moderately to extremely satisfy with the surgery.

In contrast to the present study, *Dal et al. (2012)* recorded postoperative asymmetry of the breasts in a high proportion of the patients, with the control breast being more ptotic and larger in size than the treated breast. 96.7% of patients were satisfied with the performed type of breast surgery, while (3.3%) preferred subcutaneous mastectomy with implant. (83.3%) of patients did not suggest reshaping of treated breast; (6.7%) chose nipple reconstruction.

These results agreed with *Chan et al. (2010)* as 88% of patients expressed no regret over having undergone breast-conserving surgery and would not choose another kind of breast surgery even if they could choose again. In addition, 94% of patients were satisfied with the present cosmetic outcome and would not consider further reshaping or reconstructive surgery for the treated breast.

Regarding surgeons score on cosmetic outcome, results of the present study showed that 56.7% of patients gave excellent score for the surgeon performance, 40% gave good and 3.3% fair.

Other results were obtained by *Ha et al. (2015)* as they found that in doctor's cosmetic assessment result: 24.9% cases, and 46.8% cases were scored as excellent and good, respectively. Only 4.0% were scored as poor. *Farouk et al. (2015)* recorded that patient satisfaction was excellent in 70 % patients, good in 20 % patients, and fair in 10 % patients.

The present study showed no statistically significant difference between surgeons score on cosmetic outcome regarding baseline characteristics of patients. Also, *Olfatbakhsh et al. (2015)* found that the association between patient's age with cosmetic outcome score was not statistically significant.

On the other side, *Adimulam et al. (2014)* showed similar results of better cosmesis in younger patients.

The current study showed statistically significant difference between surgeons' score on cosmetic outcome regarding smoking and DM and none statistically significant regarding superior-medial

mammoplasty technique and tumor histology. Also, there was statistically significant decrease in good and excellent scores compared to fair regarding axillary surgery.

In contrast, *Olfatbakhsh et al. (2015)* found no correlation between axillary incision types with cosmetic score.

Our study showed statistically significant difference between surgeons' score on cosmetic outcome as regards wound dehiscence and fat necrosis.

## CONCLUSION

Oncoplastic breast surgery techniques were effective and resulted in improved patient reported outcomes.

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## جراحة أورام الثدي التجميلية لعلاج سرطان الثدي المبكر

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**خلفية البحث:** سرطان الثدي هو أكثر انواع السرطانات التى يتم تشخيصها على مستوى العالم وهو ثانى أكثر اسباب الوفيات شيوعا المرتبطه بالسرطان بين الاناث. وحوالى 18000 حاله جديده تم تشخيصها بين الاناث فى 2014 فى مصر.

**الهدف من البحث:** تقييم نتائج الأورام ورضا المريض من الناحية الجمالية بعد جراحة أورام الثدي التجميلية للمرضى المصابين بسرطان الثدي فى مراحل مبكرة.

**المرضى و طرق البحث:** الدراسة الحالية تم تسجيلها بداية من يناير 2019 الى يناير 2020 فى مستشفى الأزهر الجامعى ومستشفى معهد ناصر للبحوث والعلاج وهذه كانت دراسة وصفية اجريت على 30 مريض مصابين بسرطان الثدي الذين يستوفون معايير الاشتمال قد خضعوا الى مستويات مختلفة الاول والثانى من جراحة أورام الثدي التجميلية و تم تقييم الرضا عن الاورام والجمالية.

**نتائج البحث:** هناك فرق ذو دلالة إحصائية بين درجة الجراحين على النتائج الجمالية فيما يتعلق بتفزر الجرح و نخر الدهون.

**الاستنتاج:** تقنيات جراحة أورام الثدي التجميلية فعالة و تؤدى إلى تحسن نتائج المرضى المشار إليها لسرطان الثدي المبكر.

**الكلمات الداله:** جراحة تجميل الثدي، جراحة الثدي، سرطان الثدي المبكر.