

# Breast Reduction Complications

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**How to cite this paper:** Alboudi, S., Rahal, A.A., Haidar, I.A. and Alhassanieh, A. (2021) Breast Reduction Complications. *Modern Plastic Surgery*, 11, 1-5.  
<https://doi.org/10.4236/mps.2021.111001>

**Received:** November 27, 2020

**Accepted:** December 18, 2020

**Published:** December 21, 2020

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## Abstract

**Background:** Breast reduction surgery is increasing in popularity, with so many techniques all around the world, and the community's knowledge of the details of this procedure increases thanks to the Internet and easy access to information, which increases breast reduction reviews for plastic surgery clinics. Reduction mammoplasty is an established and effective technique to treat symptomatic macromastia. Variable rates of complications have been reported, and there is a continued need for better outcome assessment studies. **Aim:** The purpose of this study was to identify the complications occurred during the first year of breast reduction surgery. **Materials and Methods:** A prospective study over a 1-year period from October 2018 to October 2019, that included 32 patients who underwent breast reduction surgery using the same technique (inferior pedicle and inverted T scar) in the Department of Plastic Surgery at Al-Mouassat University Hospital, Damascus, Syria. Patients were followed through a whole year after surgery and complications that occurred were recorded. **Results:** Complications that occurred in 14 patients (43%), and, and were more common in patients with larger breasts and worse symptoms before surgery. The most common complication was delayed wound healing, and it was associated with breast volume before surgery and with smoking. In general, the most relevant factor influencing the incidence of complications was the weight of the resected breast tissue, which is mainly related to the size of the breast before surgery. **Conclusion:** The weight of the resected breast tissue was the most important factor influencing the occurrence of complications after breast reduction surgery. The most prevalent complication was delayed wound healing and it was associated with the weight of the removed tissue.

## Keywords

Breast Reduction, Complications, Delayed Wound Healing

## 1. Introduction

Breast reduction surgery is becoming more and more popular in the world, with so many techniques as many as plastic surgeons doing this procedure, but the most used technique is the inferior pedicle with the inverted T scar technique.

Considering that breast reduction has cosmetic and functional indications to relieve patients symptoms, more and more coming as plastic and also reconstructive procedure.

The complications of breast reduction surgery have been studied since 1964, and their increased occurrence has been linked to increased patient's weight and increased quantity of resection [1].

A few studies linked some complications such as seroma and delayed wound healing to the addition of liposuction to surgery [2].

## 2. Materials and Methods

This was a prospective study over a 1-year period from October 2018 to October 2019, which included 32 patients who underwent breast reduction surgery in the Department of Plastic Surgery at Al-Mouassat University Hospital, Damascus, Syria.

Surgery was performed in all patients using one technique, the inferior pedicle technique, with the inverted T scar.

Patients were followed-up after surgery, and complications that occurred during the follow up period were documented. The complications recorded were: delayed wound healing, infection, hematoma, seroma, fat necrosis, and hypertrophied scars.

The number of complications that occurred in each patient was recorded, and complications rate after surgery was determined by calculating the percentage of patients who had any complication. The association between complications and other variables such as age, smoking and weight was assessed.

All patients who had breast reduction surgery with other techniques like vertical scar breast reduction were excluded from this study, and the patients who were not followed up after surgery were also excluded.

Patients were followed up after surgery and the drains were removed when their daily output reached less than 50 ml. Then patients were seen after 1, 3, 6 months and a year after surgery.

## 3. Results

32 patients underwent breast reduction surgery using the inferior pedicle technique, with the inverted T scar. All patients were in the reproductive age with a mean age of 37.8 years (range, 23 - 52 years).

The mean BMI was 29.7 kg/m<sup>2</sup> (range, 19 - 40 kg/m<sup>2</sup>). The mean weight of single breast resected tissue was 793 gram (range, 140 - 1600 gram).

All surgeries were performed under general anesthesia, and a suction drain was placed in all patients, the mean surgical duration was 151.5 minutes.

Out of 32 patients, 18 had no complications (56.25%), 14 had one or more complication, so the complications rate was 43.75%.

Of the 14 patients with complications 6 had one complication (18.75%), 4 had two complications (12.5%) and 4 had three or more complications (12.5%).

The complications occurred were as follows:

Delayed wound healing in 12 patients (37.5%), hypertrophied scar in 5 patients (15.6%), fat necrosis in 4 patients (12.5%), seroma in 3 patients (9.3%), partial nipple necrosis in 3 patients (9.3%), and infection occurred only in one patient (3.12%) No complete nipple necrosis occurred in any patient.

The most influencing factor in the occurrence of complications was the size of the breast before surgery, and thus the weight of breast tissue removed from each breast.

All delayed wound healing cases were dealt with by conservative methods like daily wound dressings until recovery.

Fat necrosis occurred in 4 patients which were managed conservatively.

Seroma occurred in 3 patients, which we suctioned by simple measures and no reaccumulation of seruma was noticed.

The infection occurred in one patient, and appropriate antibiotics were given according to swab from the wound until total recovery had occurred.

**Figure 1** shows Delayed wound healing.

**Table 1** shows the main characteristics of patients with complications and patient without complications.

Patients with one or more complication had a greater body mass index, were more smokers, had a larger resected specimen weight, and suffered of more shoulder grooving due to effect of the brassier.

No difference in mean age was found between the two groups.

**Table 1.** The main characteristics of patients with complications and patient without complications.

Variable	Complications	No complications
Patients number	14	18
Mean age (years)	36.7	38.5
Mean BMI (kg/m <sup>2</sup> )	33.5	27.9
Smoking	80%	55%
Resected specimen weight (gram)	1020	580
Shoulder grooving	71%	37.5%
married patients (Only two unmarried patients)	100%	88%
previous breastfeeding	100%	88%
history of breast cancer in first-degree relatives	0%	0%



**Figure 1.** Delayed wound healing.

#### 4. Discussion

In an attempt to reduce complications, smoking should be stopped one month before surgery and two weeks later, and the patient should be advised to lose weight when high BMI is noticed before surgery, and reach a stable weight for at least 6 months before surgery. A meticulous surgical technique with a good understanding of the surgical procedure is essential in an effort to reduce complications.

The correlation between resected specimen weight in breast reduction surgery and the increased complications was obvious in this study, as the mean weight of the removed tissue in patients which complications was 1020 g compared to 580 g in patients without complications.

In 1964, Strombeck [1] found an increase in complications rate after breast reduction surgery with the weight of the removed tissue was greater than 500 g from a single breast.

In 2000, Zubowski [3] described the correlation between increased weight of resected tissue from a single breast and increased complications after surgery. Our results are also consistent with the study of Menke *et al.* in 2001 [4].

The increased rate of complications was also associated with the increased body mass index (BMI). Patients with complications after surgery had a mean BMI of 33.5 kg/m<sup>2</sup> compared to 27.9 kg/m<sup>2</sup> in patients without complications. This was also shown by Zubowski [3], but the results of our study are inconsistent with Cunningham study in 2004 [5], which showed no association between increased patient's weight and complications after breast reduction surgery.

The most common complication after breast reduction surgery in our study was delayed wound healing without association with any of other variables, therefore it was linked to the previous risk factors for complications, such as increased weight, excess weight of the removed tissue, and smoking.

Smoking was the most common risk factor in patients with complications, which is logical because the effect of smoking on wound healing and micro perfusion, which was shown by Cunningham [5] in his study published in 2004 as well.

## 5. Conclusions

The significance of the study results may be affected by the small number of cases included. Complications in this study varied in severity between patients, which should be considered in future studies about the breast reduction surgery complications. The effect of complications severity and number on the patient should be demonstrated.

In addition, it is necessary to study the effect of complications on the aesthetic results of breast reduction surgery.

## Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

## References

- [1] Strombeck, J.O. (1964) Macromastia in Women and Its Surgical Treatment. *Acta chirurgica Scandinavica*, **341**, Article No. 84.
- [2] Lejour, M. (1999) Vertical Mammoplasty: Early Complications after 250 Personal Consecutive Cases. *Plastic and Reconstructive Surgery*, **104**, 764-770.  
<https://doi.org/10.1097/00006534-199909010-00023>
- [3] Zubowski, R., Zins, J.E., Foray-Kaplon, A., *et al.* (2000) Relationship of Obesity and Specimen Weight to Complications in Reduction Mammoplasty. *Plastic and Reconstructive Surgery*, **106**, 998-1003.  
<https://doi.org/10.1097/00006534-200010000-00006>
- [4] Menke, H., Eisenmann-Klein, M., Olbrisch, R.R. and Exner, K. (2001) Continuous Quality Management of Breast Hypertrophy by the German Association of Plastic Surgeons: A Preliminary Report. *Annals of Plastic Surgery*, **46**, 594-600.  
<https://doi.org/10.1097/00006534-200106000-00004>
- [5] Cunningham, B.L., Gear, A.J.L., Kerrigan, C.L. and Collins, E.D. (2004) Analysis of Breast Reduction Complications Derived from the BRAVO Study. *Plastic and Reconstructive Surgery*, **115**, 1597-1604.  
<https://doi.org/10.1097/01.PRS.0000160695.33457.DB>