



# Surgical treatment for breast ptosis with silicone prosthesis: evaluation of surgical results and patient satisfaction

*Tratamento cirúrgico de ptose mamária com inclusão de prótese de silicone: avaliação de resultados cirúrgicos e satisfação de pacientes*

GISELLY DE FÁTIMA MENDES  
PASCOAL <sup>1\*</sup>   
JORGE LUIZ ABEL <sup>2</sup>   
GERALDO SCOZZAFAVE <sup>3</sup> 

## ■ ABSTRACT

**Introduction:** The correction of breast ptosis associated with skin flaccidity is done through mastopexy with the inclusion of an implant. This work's objective was to evaluate the surgical results and the satisfaction of patients who underwent breast ptosis surgery with silicone prosthesis placement. **Methods:** We selected 22 patients who underwent mastopexy with implant placement, from February to September 2016, at the Plastic Surgery Service of Hospital Heliópolis. Interviews were conducted applying to the patients a questionnaire to verify the degree of satisfaction and changes in the daily routine after surgery. The surgical results evaluation was carried out by three surgeons, who attributed scores to different items. **Results:** 100% of the interviewees feel satisfied with the surgery, and all reported an improvement in their self-esteem. In the evaluation of surgeries performed with surgeons, about 91% of the results are between regular and good. **Conclusion:** The degree of patient's satisfaction who underwent mastopexy with insertion was excellent. There was a favorable impact on the quality of life and well-being of the patients evaluated, with the post-surgical result being classified as regular or good.

**Keywords:** Plastic surgery; Breast implants; Mammoplasty; Self-image; Silicone gels

Institution: Heliópolis Hospital, Sacomã, São Paulo, SP, Brazil.

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<sup>1</sup> Federal University of Pará, Belém, PA, Brazil.

<sup>2</sup> Plastic Surgery Clinic Dr. Wilson Cintra, Jardim Paulista, São Paulo, SP, Brazil.

<sup>3</sup> Heliópolis Hospital, Sacomã, São Paulo, SP, Brazil.

## ■ RESUMO

**Introdução:** A correção da ptose mamária associada à flacidez de pele é corrigida através da mastopexia com inclusão de implante. O objetivo deste trabalho foi avaliar os resultados cirúrgicos e a satisfação de pacientes submetidas à cirurgia de ptose mamária com inclusão de prótese de silicone.

**Métodos:** Foram selecionadas 22 pacientes submetidas à mastopexia com inclusão de implante, no período de fevereiro a setembro de 2016, no Serviço de Cirurgia Plástica do Hospital Heliópolis. Foi realizada entrevista com as pacientes, por meio de aplicação de questionário, com a finalidade de verificar o grau de satisfação e as alterações no cotidiano diário após a cirurgia. A avaliação dos resultados cirúrgicos foi realizada mediante avaliação de três cirurgiões, do qual atribuíram notas a diferentes itens. **Resultados:** 100% das entrevistadas se sentem satisfeitas com a cirurgia e todas relataram a melhora da autoestima delas. Na avaliação das cirurgias realizadas com os cirurgiões, cerca de 91% dos resultados estão entre regular e bom. **Conclusão:** O grau de satisfação das pacientes submetidas à mastopexia com inserção foi excelente e houve impacto favorável na qualidade de vida e bem-estar das pacientes avaliadas, sendo que o resultado pós-cirúrgico se enquadra como regular ou bom.

**Descritores:** Cirurgia plástica; Implantes de mama; Mamoplastia; Autoimagem; Géis de silicone.

## INTRODUCTION

Breast ptosis is characterized by breasts fall, decreased volume, sagging skin, or both. It is an alteration resulting from the inadequate relationship between the breast skin and its content<sup>1</sup>. It can be defined in varying degrees, according to the relationship between the nipple and the inframammary fold<sup>2</sup>.

Mastopexy is plastic surgery that treats breast ptosis, aiming to improve the breast's shape through tiny scars, the anatomical repositioning of the breasts and the nipple-areola complex, avoiding lesions or neurovascular changes<sup>3</sup>.

The correction of breast ptosis is done with an increase in breast volume through silicone implants or removal of excess skin and lifting (mastopexy), or the association between them. Mastopexy associated with silicone implants is considered a more complex procedure than mastopexies without implants, due to the variable results, relapses, and related complications<sup>4</sup>.

The correction of breast ptosis associated with skin flaccidity is still a topic of discussion and controversy. The critical analysis of aesthetic results and patient and team satisfaction is not well established in the literature<sup>5</sup>. On the other hand, patients have become increasingly critical about the result of breast surgery, as they expect a natural, lasting shape and minimal scarring<sup>6</sup>.

## OBJECTIVE

This study's objective was to evaluate the surgical results and the satisfaction of patients who underwent mastopexy with an implant, from February to September 2016, at the Plastic Surgery Service of Hospital Heliópolis.

## METHODS

We selected all patients who underwent mastopexy with breast implant operated by the same resident doctor from the last year of plastic surgery, from February to September 2016, at the Plastic Surgery Service of Hospital Heliópolis.

Twenty-two patients were counted and followed from the preoperative outpatient interview until the 6<sup>th</sup> postoperative month when they were discharged.

All patients were initially screened at the outpatient clinic, being subjected to a directed medical interview with clarification about the surgery, expectations, and possible complications. Further laboratory tests were requested, including complete blood count, complete biochemistry, serology for HIV (human immunodeficiency virus) and hepatitis, beta HCG (human chorionic gonadotropin), and liver function as well as chest X-ray, electrocardiogram and cardiological consultation.

After this screening, the patients were photographed, then the surgical planning, length of stay, complications, and the size and shape of the prosthesis were discussed.

**Inclusion factors:** female gender, aged between 18 and 70 years, not having undergone previous plastic surgery in another service, stable weight with BMI (body mass index) up to 28, and presenting a deficient breast volume that justified the placement of the prosthesis.

**Exclusion factors:** being a smoker, having uncontrolled comorbidities, history of previous surgical complications, refusing to sign a free and informed consent form for the study, having laboratory alterations, or high risk that contraindicate the surgery, and emotionally unstable patients or who do not understand the procedure surgical.

Two questionnaires were carried out for the present study. The first questionnaire included data regarding age, prosthesis shape, profile, implant volume, surgical reintervention, intraoperative complications, postoperative complications, the distance between the wishbone and point A, the scar shape ( periareolar, inverted T, areola and vertical), mammary pocket plane (subglandular, subfascial and submuscular), capsular contracture (Baker scale), degree of previous ptosis and pregnancy.

The analysis followed the principles of resolution 466/2012 of the National Health Council, which deals with the ethical and legal aspects of research involving human beings in Brazil.

The second questionnaire included an interview directed at the satisfaction with the surgery and if it interfered with the patients' social, sexual life, and body care.

### Evaluation of surgical results

A critical and qualitative analysis of the 22 patients' surgical results was carried out. Three

different plastic surgeons from the Plastic Surgery Service of Hospital Heliópolis with experience in performing mastopexy with a prosthesis compared the pre- and postoperative photographs. For this, a questionnaire with five items (Chart 1) was used as described in Cintra Júnior et al. in 2016<sup>7</sup>.

After data collection, a results descriptive evaluation was performed.

## RESULTS

In the protocol for evaluating the surgical results obtained through the application of the questionnaires, the following data were recorded: age ranging from 26 to 69 years; weight from 49 to 77kg; prosthesis shape: 100% round; profile: 54.54% high, 31.81% super high and 13.63% moderate; implant volume: 240 to 350ml; reintervention: 13.63% of cases; and intraoperative complication: 0%.

Regarding patients who presented complications in the postoperative period, it was observed that 14 patients had some type of complication or more than one type (Table 1).

It was found that three patients needed surgical reintervention, one of the cases was due to asymmetry and scarring, another to perform the resuture and the third to perform hematoma drainage.

Regarding the shape of the scar, 31.81% of the patients had a periareolar shape, 45.45% an inverted T shape (Figure 1), and 22.72% a vertical periareolar shape.

In the breast pocket plane, 63.63% were subglandular, 31.81% subfascial, and 4.5% submuscular.

Capsular contracture was seen in only one patient, with four on the Baker scale. Type 1 ptosis was observed in 40.90% of patients, type 2 in 50.0%, and type 3 in 9.0%. Regarding the number of pregnancies, 45.45% of the patients had two pregnancies, 40.90% had one pregnancy, and 13.63% had no pregnancy.

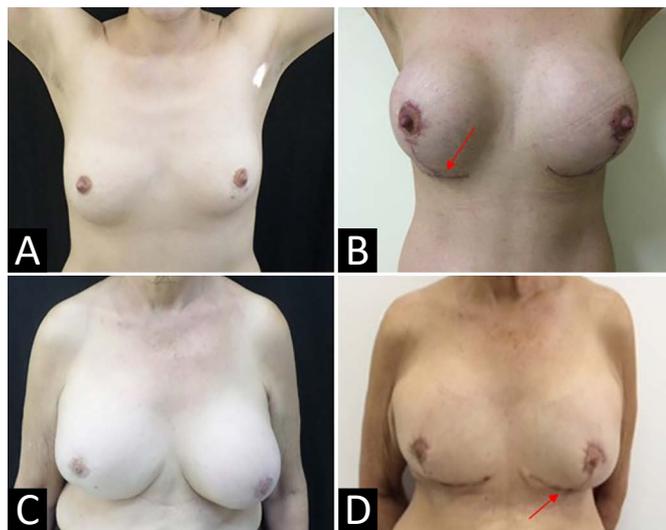
**Chart 1.** Description of the items evaluated and the scores given in the questionnaire answered by the three plastic surgeons about the patients who underwent a mastopexy.

Scores	0 – Bad	1 – Regular	2 - Good
Breast form	Inadequate	Regular	Adequate
Breast volume	Inadequate and disharmonious	Adequate and disharmonious Inadequate and disharmonious	Adequate and harmonic
Symmetry between breasts	Very different	Little different	Equal or very similar
Posicionamento NAC*	Away from the breast cone apex	Near the breast cone apex	Exactly at the breast cone apex
Quality and extent of scars	Alargadas Hypertrophic or very extensive	Slightly enlarged and well-positioned	Thin, clear and well-positioned

\*NAC: Nipple areola complex. Source: Cintra Júnior et al., In 2016<sup>7</sup>.

**Table 1.** Patients who underwent mastopexy with a breast implant and presented postoperative complications (n = 14).

Number of cases	Complications
4	Enlargement
1	Enlargement + dehiscence
1	Enlargement + dehiscence + asymmetry
3	Asymmetry
4	Hypertrophic scar
2	Dark scar
1	Hematoma
1	Inflammation
2	Serous secretion
1	Necrosis
1	Infection
1	Keloid

**Figure 1.** A and C. Anterior view before surgery; B and D. Postoperative, with the arrow indicating the inverted T-shaped scar.

When questioning patients' satisfaction with the surgery, it was found that most patients were satisfied with the change after surgery (Table 2).

When the patients were asked what they liked most about the result of the breast surgery, most of them (50%) reported that they liked everything (Figure 2) and the others said they liked the volume, the shape, the correction of the ptosis and the removal of excess skin.

On the other hand, when asked about what they liked least about the result of the surgery, 50% answered that nothing, that is, they liked everything, 33.3% did not like the scar (Figure 3) and a smaller percentage even mentioned the points and pain as an answer to this question.

It is possible to observe in Figure 3D that the left breast had an abnormal scar, around the areola and vertically, and it was also one of the patients that presented asymmetry, as can also be seen in Figure 4. This patient was one of the three patients that needed surgical reintervention for correction.

Regarding the evaluation carried out by the three surgeons, it is possible to observe the divergence of the results among them. However, it is noteworthy that the majority of patients fit the post-surgical result, in regular or good in the different items evaluated (Table 3), and only 8,8% of the results were considered bad.

## DISCUSSION

Female breasts are essential symbols of femininity, sexuality, and motherhood. Thus, they are extremely related to female psychosexual well-being<sup>8</sup>. Therefore, in the last few years, the number of breast surgeries performed has increased a lot. However, this increase has, consequently, also a more significant number of complications<sup>9,10</sup>. In this study, a considerable number of patients were observed who presented some type of complication in the postoperative period, but the complications presented were of lesser intensity.

The objectives of breast surgeries are focused on a good evaluation of the final aesthetic result and a postoperative free of complications. For the patient, it is a satisfactory result from both an aesthetic and functional point of view, improving her quality of life in several aspects<sup>11</sup>.

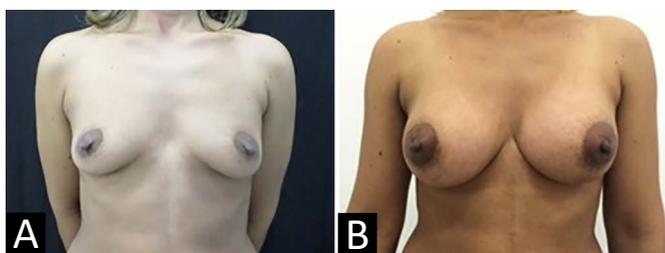
In the present study, half of the patients had their inverted T-type scars. According to Neligan, in 2015<sup>12</sup>, the various surgical approaches to mastopexy are divided based on the scar's pattern. There are four basic scar patterns for mastopexy techniques: periareolar, vertical, J or L, and inverted T.

Regarding the breast pocket plane, 75% of patients had the subglandular plane. According to Spear et al., in 2004<sup>1</sup>, in daily surgical practice, inserting a silicone implant, particularly in the subglandular plane, seems simple. However, the indications for the best tissue plane to use for implant coverage and association with mastopexy can become challenging, eventually requiring secondary procedures<sup>1</sup>.

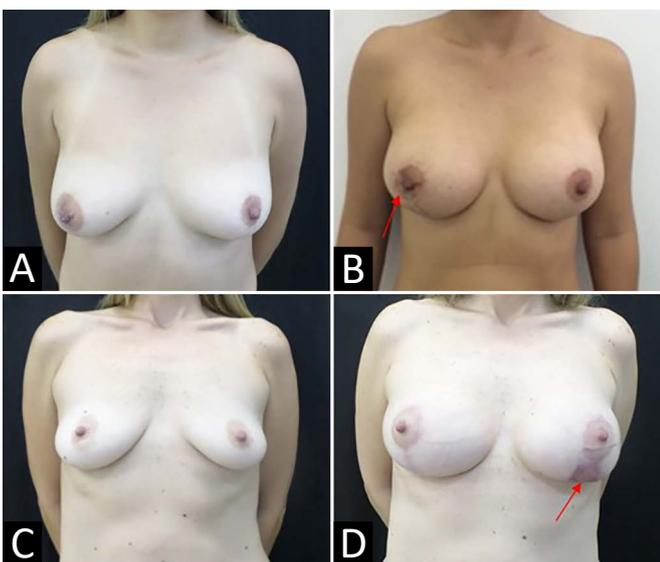
Among the existing mastopexy techniques, Neligan, in 2015<sup>12</sup>, states that the periareolar technique is the most suitable for patients with mild to moderate breast ptosis, which would be the case for more than 83% of the patients evaluated in this study. In this technique, firmer parenchyma is preferable to more

**Table 2.** Answers to questions related to patient satisfaction concerning surgery (n = 22).

Question	Yes	No
Do your breasts interfere with professional life?	7	15
Did you regret having the surgery?	0	22
Did surgery influence social life?	15	7
Did the surgery influence the affective life?	16	8
Did surgery influence sex life?	16	8
Are you satisfied with the result of breast surgery?	22	0
Was the result of the surgery close to what you heard from the plastic surgeon?	22	0
Is the result close to what you expected?	22	0
Did the surgery change your life? How?	22	0
	<b>Self-esteem</b>	
Did breast surgery affect body care?	16	8
Are you satisfied with your breasts?	21	Partly
Has your body improved?	22	0
Are you satisfied with your body?	21	1
Do you believe that breast surgery has anything to do with satisfaction with your body?	21	1



**Figure 2.** Patient who was completely satisfied with the surgery. **A.** Before surgery; **B.** Postoperative.



**Figure 3.** Patients who were not satisfied with the scar. **A** and **C.** Before surgery; **B** and **D.** Postoperative with arrows indicating the scars.



**Figure 4.** Patient who was dissatisfied with the scar in the postoperative period and needed reintervention.

flaccid tissues. The incisions for this technique range from an upper half moon to a full circle of removed skin.

Mild ptosis was defined as presenting the nipple 1 cm from the inframammary fold and being above the breast's lower pole. In moderate ptosis, the nipple is 1-3 cm below the inframammary fold but is still above the breast's lower pole. In severe ptosis, the nipple is more than 3 cm below the inframammary fold and is located below the lower breast contour. In pseudoptosis, the nipple is above the inframammary fold, but most of the breast tissue is below and gives the appearance of ptosis<sup>2</sup>.

**Table 3.** Results of the evaluation of the plastic surgeon for the different items evaluated by patients undergoing mastopexy (n = 22).

Evaluated items	Score 0	Score 1	Score 2
<b>Surgeon 1</b>			
Form	1	5	16
Volume	1	3	18
Symmetry	2	9	11
NAC*	3	7	12
Scar	3	10	9
<b>Surgeon 2</b>			
Form	1	15	6
Volume	1	7	14
Symmetry	1	8	13
NAC	2	15	5
Scar	2	10	10
<b>Surgeon 3</b>			
Form	2	10	10
Volume	0	11	11
Symmetry	1	12	9
NAC	3	10	9
Scar	6	7	8
Total (%)	29 (8,8)	139 (42,2)	161 (48,9)

\*NAC: Nipple-areola complex.

Regarding the questioning about the patients' satisfaction with the surgery, Ozgür et al., in 1998<sup>13</sup>, affirm that psychology should be an integral part of plastic surgery since many patients showed relief from psychological and social problems after the surgical procedures.

All patients reported that they did not regret having the surgery and said that the surgery result was within the expected expectations; only one was partially satisfied because she would like it to get bigger. According to Neligan, 2015<sup>12</sup>, most patients come to the consultation with some notion of what to expect from the surgery. These predetermined ideas come from internet research and image observation and conversations with other people who have undergone mastopexy.

All patients evaluated stated that their self-esteem improved after the surgery. In this sense, several studies have already been carried out, highlighting the improvement in self-esteem<sup>11,14</sup>. According to Santos et al., in 2019<sup>15</sup>, in a study with patients who underwent breast surgery, most were dissatisfied with the body in the pre-surgical period and pointed out the breast as the most significant discomfort, and the desire to raise self-esteem showed as the primary motivation among the evaluated group. Finally, the authors report that the level of post-surgical satisfaction among patients was

high, with surgery interfering in professional, personal, and sexual aspects.

When asked about what they liked least about the surgery, about 33% of patients reported that they did not like the scar. In 2015<sup>12</sup>, Neligan stated that although scars are an inherent part of any surgical procedure, their final quality cannot be predicted. According to Sanfelice and André, in 2007<sup>16</sup>, the breasts have very varied shapes, and therefore they must have specific approaches for each type in particular and, consequently, they can present different results in the face of surgery due to this variation.

Among the characteristics mainly cited by patients they liked the most, are the increase in volume and the reduction of sagging. Mansur and Bozola, in 2009<sup>17</sup>, claim that most patients who seek breast plastic surgery, want larger breasts and correction of flaccidity.

Regarding the difference between surgeons in the results obtained, the significant variability and subjectivity in the evaluation of the items analyzed are perceived, which was also reported in a study carried out by Cintra Júnior et al., in 2016<sup>7</sup>. However, these same authors affirm that the weak agreement between the scores awarded by the evaluators do not invalidate the results obtained.

However, it is noteworthy that surgeons considered 91.1% of surgeries to be regular or good, demonstrating that even surgeons considered surgeries with satisfactory results.

## CONCLUSION

The degree of satisfaction of patients who underwent mastopexy with insertion was excellent, and there was a favorable impact on the quality of life and well-being of the patients evaluated.

In the evaluation of plastic surgeons, the post-surgical results of mastopexy with insertion of the evaluated patients, the majority, 90%, of the items were considered to be fair or good.

## COLLABORATION

<b>GFMP</b>	Analysis and/or data interpretation, Conception and design study, Data Curation, Final manuscript approval, Investigation, Methodology, Project Administration, Realization of operations and/or trials, Writing - Original Draft Preparation, Writing - Review & Editing
<b>JLA</b>	Writing - Review & Editing
<b>GS</b>	Writing - Original Draft Preparation

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**\*Corresponding author:****Giselly de Fátima Mendes Pascoal**

Rua Artur Sabóia, 328, Paraíso, São Paulo, SP, Brazil.

Zip Code: 04104-060

E-mail: [gisapascoal@yahoo.com.br](mailto:gisapascoal@yahoo.com.br)