



# Reduction mastoplasty with silicone implants: When is it indicated?

## *Mastoplastia redutora associada a implante de silicone: quando indico?*

OSVALDO RIBEIRO SALDANHA<sup>1</sup>  
ALESSANDRA GRASSI SALLES<sup>2</sup>  
MARCUS CASTRO FERREIRA<sup>3</sup>  
FRANCIS LLAVERIAS<sup>4</sup>  
LUIS HUMBERTO URIBE MORELLI<sup>5</sup>  
OSVALDO RIBEIRO SALDANHA  
FILHO<sup>6</sup>  
CRISTIANNA BONETTO  
SALDANHA<sup>7</sup>

Institution: Clínica Saldanha.

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### ■ ABSTRACT

**Introduction:** Patient dissatisfaction with reduction mammoplasty outcomes can occur, especially in cases of ptosis accompanied by excessive flaccidity, striations, and a higher fat than glandular content. In such cases, achieving long-lasting results is very difficult. Small-volume breast implants can be placed during the reduction mammoplasty with the purpose of obtaining better breast shape, contour, and projection as well as greater long-term satisfaction. **Method:** Between 1997 and 2012, 264 patients aged 27–55 years (mean, 38) underwent reduction mammoplasty with immediate placement of breast implants. **Results:** Satisfactory results were obtained, with adequate filling of the upper pole, increased breast firmness, and statistical reduction in postoperative ptosis. Two cases of carcinoma *in situ* were identified in the pathological exam. **Conclusion:** Reduction mastoplasty associated with silicone implants is safe for selected cases.

**Keywords:** Reduction mammoplasty; Breast hypertrophy; Silicone Implants; Carcinoma *in situ*; Breast ptosis.

### ■ RESUMO

**Introdução:** Insatisfação dos pacientes com resultado de mamoplastia redutora pode ser identificado em alguns casos, especialmente quando apresentam ptose acompanhada de flacidez excessiva, estrias, e ainda, componente mamário mais gorduroso que glandular. Nesses tipos de pacientes, é muito difícil conseguir bons resultados por longo período. Implantes mamários de pequeno volume, podem ser colocados no mesmo tempo da mamoplastia redutora com o objetivo de se obter melhor forma, contorno e projeção das mamas, com maior satisfação a longo prazo. **Método:** No período de 1997 a 2012, duzentos e sessenta e quatro pacientes com idade entre 27 e 55 anos (idade média de 38), foram submetidas à mamoplastia redutora com imediata colocação de implante mamário. **Resultados:** Foram obtidos resultados satisfatórios, com adequado preenchimento do pólo superior, mamas firmes e reduzida estatística de ptose pós-operatória. Foram identificados dois casos de carcinoma *in situ*, como achados no anátomo-patológico. **Conclusão:**

<sup>1</sup>MD, PhD, Division of Plastic Surgery, USP

<sup>2</sup>MD, PhD, Division of Plastic Surgery, USP

<sup>3</sup>MD - Resident of Plastic Surgery, Unisanta.

<sup>4</sup>MD - Resident of Plastic Surgery, Unisanta.

<sup>5</sup>MD - Resident of Plastic Surgery, Specialist in Plastic Surgery.

<sup>6</sup>MD - Resident in Plastic Surgery, Specialist in Plastic Surgery, Unimes.

<sup>7</sup>MD - Resident of Plastic Surgery, General Surgery Service, Sta Casa Santos.

Mastoplastia redutora associada a implantes de silicone é um procedimento seguro para casos selecionados.

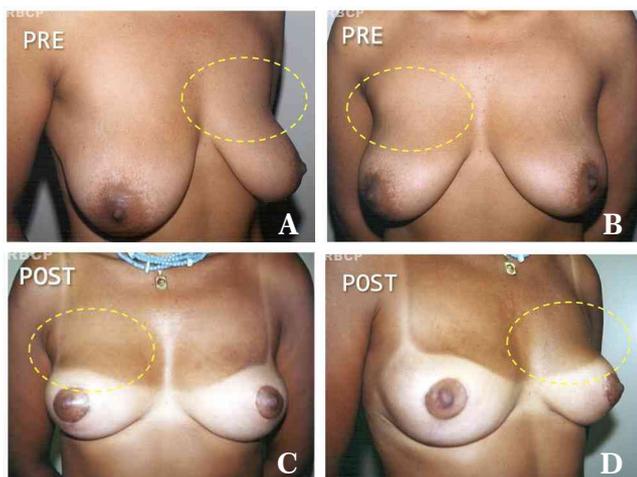
**Descritores:** Mamoplastia redutora; Hipertrofia mamária; Implantes de Silicone; Carcinoma in situ; Ptose de mamas.

## INTRODUCTION

Aesthetic breast procedures are usually divided into breast augmentation, reduction mammoplasty, and mastopexy. Their main objective is to improve breast shape, symmetry, and size.

Since 1930, breast surgery procedures have preserved the blood supply of the nipple-areola complex (NAC)<sup>1</sup>. Many techniques and refinements have been developed over the past five decades with the aim of treating different types and degrees of ptosis, hypomastia, and hypertrophy, which has increased the popularity of this procedure accordingly<sup>2,3,4</sup>.

Since 1997, some patients have sought treatment for breast hypertrophy accompanied by large amounts of flaccid skin and striations by requesting the simultaneous placement of implants. In our experience, some patients with these characteristics who underwent reduction mammoplasty only experienced unsatisfactory long-term results that required revision surgery for the correction of ptosis and the upper pole<sup>5,6</sup>. It is becoming increasingly common for patients to request implants to obtain better shape and aesthetic results (Figures 1A–1D); however, this combination of procedures has not been published to date.



**Figure 1.** A–D. Pre- and post-operative aspect showing lack of projection of the upper pole in a patient who underwent reduction mammoplasty without breast implant placement (11 months after surgery).

## OBJECTIVE

The objective of this study was to report our experience with the simultaneous use of low-volume silicone implants and reduction mammoplasty in 264 patients with breast hypertrophy and excessive skin flaccidity over an observation period > 16 years.

## METHOD

Between February 1997 and December 2012, 264 patients (27–55 years; mean age, 28 years) underwent reduction mammoplasty with placement of small-volume silicone implants.

### The inclusion criteria were:

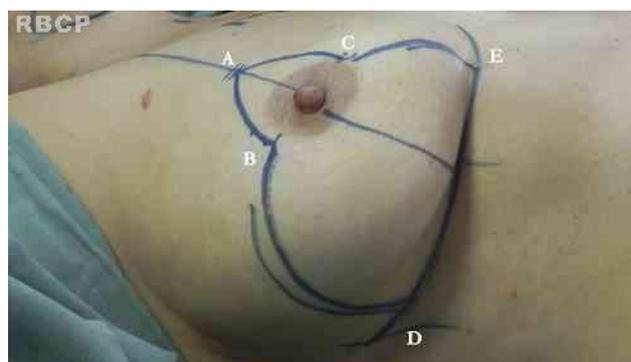
- 1) desire for breast implants and shape correction;
- 2) flaccid skin, ptosis, and breast hypertrophy Times New Roman and
- 3) breasts with a higher fat than glandular content.

### The exclusion criteria were:

- 1) refusal of breast implants Times New Roman;
- 2) young age with a higher breast glandular than fat volume; and
- 3) severe systemic diseases. Patients who previously underwent bariatric surgery were not excluded.

### Surgical Technique

The surgical technique used was based on the technique of Pitanguy. In this procedure, a line is drawn from the cl-



**Figure 2.** Pre-operative markings.

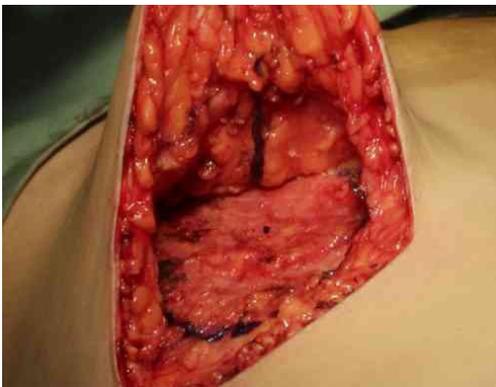
vicular midpoint to the areola to divide the breast into two parts. Lateralization of the NAC is corrected when possible. Point E is marked under the guidance of the projection of the inframammary fold 18–20 cm from the manubrium of the sternum. Points B and C are determined by bi-digital maneuver and 89 cm distant to point A. The distance between points B and C depends on the skin flaccidity and tissue volume to be removed but is usually 4–6 cm. With the patient in the supine position, a bi-digital maneuver is performed and points D and E are marked in the inframammary fold (Figure 2).

While marking the breast, the surgeon must consider the final breast volume desired by the patient, including the volume of the implant, to prevent excessive skin removal.

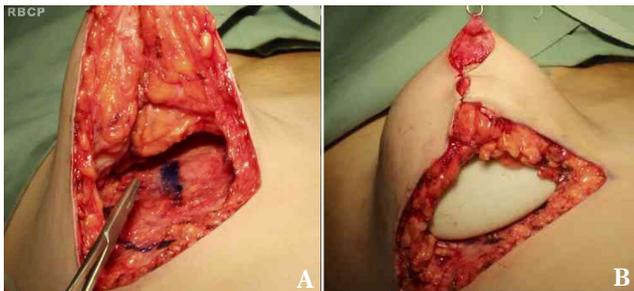
After the Schwartzman maneuver, breast tissue is removed from the lower pole and retroglandular detachment is performed (Figures 3A–C). Next, a type Pontes II comple-



**Figure 3.** (A). Schwartzman maneuver. (B). Resection of the lower pole. (C). complementary resection of the base of the breast according to implant size.



**Figure 4.** Resection of the base of the breast (Pontes II).



**Figure 5.** A. Approximation of the breast pillars. B. Placement of the retroglandular implant.



**Figure 6.** Final suture.

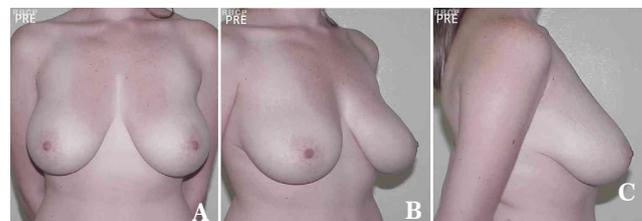
mentary resection is performed at the posterior base of the breast (Figure 4)<sup>7</sup>. The breast pillar is approximated with nylon 3-0 and the implant is placed in the retroglandular position (Figures 5A, 5B). The NAC is repositioned and sutured in two layers using Monocryl® 4-0 in the subcutaneous and subdermal tissues and nylon 5-0 in the skin sutures (Figure 6). Drain placement is optional. The dressing is changed on the first postoperative day and the sutures are removed 7–10 days after surgery. A surgical bra is used for 30 days and Micropore surgical tape is placed for 60 days to prevent scar enlargement.



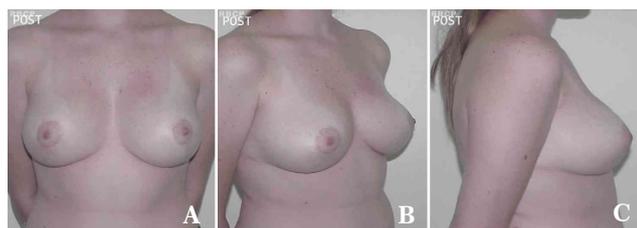
**Figure 7.** A–C. Pre-operative views.



**Figure 8.** A–C. Post-surgical views after removal of 1,170 g of breast tissue plus the insertion of a round, high-profile, polyurethane implant (190 cc).



**Figure 9.** A–C. Pre-operative view.



**Figure 10.** A–C. Post-surgical view after the removal of 590 g of breast tissue plus the insertion of a round, high-profile, polyurethane implant (190 cc).

## RESULTS

The average volume of breast tissue removed was 470 g on each side (range, 210–1,600 g). Carcinoma *in situ* was detected in two patients on histopathological examination. These two patients were regularly monitored and both were considered cured without the need for radiotherapy or che-

motherapy. In most cases, improvement and maintenance of the projection of the upper pole as well as consistency and shape were observed with satisfactory results (Figures 7A–7C, pre-operative; Figures 8A–8C, post-operative; Figures 9A–C, pre-operative; and Figures 10A–10C, post-operative).

There were no significant complications such as flap or NAC necrosis. The incidence of complications was 9.8% (26 patients): one patient (0.3%) developed a unilateral infection that was treated with bilateral implant removal, drainage, and antibiotic therapy followed by the insertion of new implants 3 months later; three (4.9%) developed seroma that required surgical revision without the need for implant removal; Times New Roman three (1.1%) had hematoma that required drainage in the surgical center; Times New Roman five (1.8%) had dehiscence, including one (0.7%) with partial NAC necrosis, requiring surgical review 6 months later; Times New Roman and three (1.1%) developed capsular contracture before 10 years that required implant replacement (Table 1).

**Table 1.** Surgical complications (n = 264).

Surgical complication	No. of cases	%
Unilateral infection	1	0.3
Seroma	13	4.9
Hematoma	3	1.1
Dehiscence	5	1.8
Partial necrosis of the NAC	1	0.7
Capsular contracture (<10 years' post-op)	3	1.1
<b>Total</b>	<b>26</b>	<b>9.8</b>

The revision rate was 17.8% (47 patients). The revisions were performed for the following reasons: 12 patients

(4.5%) developed ptosis of the inferior pole; 11 (4.4%) were submitted to review of the scar; 4 (1.5%) with breast asymmetry; and 2 (0.7%) with asymmetry of the NAC. (Table 2)

**Table 2.** Surgical revisions (n = 264).

Revision	No. of cases	%
Ptosis of the inferior pole	12	4.5
Scar	19	7.3
Breast asymmetry	4	1.5
NAC asymmetry	2	0.7
<b>Total</b>	<b>37</b>	<b>14.0</b>

## DISCUSSION

The apparent paradox of the use of a silicone implant during a reduction mammoplasty can be better understood if we consider the tandem benefits of the two procedures.

In Brazil, the decision to use implants in reduction mammoplasty is usually made by the patients. Their desires and expectations should be questioned and clarified to better inform them of the advantages and limitations of this association.

**Chart 1.** Advantages and disadvantages of reduction mammoplasty with small breast implant placement.

Advantage	Disadvantage
Shape control	Implant cost
Appropriate projection	Possible implant-related complications
Volume control	Possible need to exchange implant
Greater breast firmness	
Avoids multiple surgeries	
Long-term results	
Greater breast consistency	
Improved aesthetics	

The long-term results with the implant seem to be better due to maintenance of the upper pole and breast consistency.

Patients with hypertrophy consisting of more adipose than glandular tissue, flaccid skin, loss of volume of the upper pole, and reduced consistency are the best candidates for the placement of small-volume implants during reduction mammoplasty. The indication for small-volume implants (190 cc) is due to the fact that augmentation mammoplasty is not indicated, so this leverages the existing breast tissue that can be added to the small prosthesis to create the final volume.

The long-term results are obtained due to the greater stability of the implant compared to the fatty tissue consistency. Technological advances currently offer breast implants that feature a lower risk of tissue reaction, which decreases the possibility of complications such as capsular contracture. The implants used can be textured or have polyurethane coverage, the latter being more adherent to tissue, producing good stability in the implant position and maintaining breast shape<sup>8</sup>.

The findings of carcinoma *in situ* in two patients merits attention. Tarone *et al.* reviewed five studies that observed the risk of breast cancer in patients who had undergone reduction mammoplasty. Follow-up studies in post-surgical women who underwent reduction mammoplasty indicate that the risk of cancer decreases in proportion to the increase in resected tissue<sup>9</sup>. The risk of breast cancer is reportedly lower in patients who underwent reduction mammoplasty compared to control patients<sup>10,11</sup>.

In addition to the oncological benefit, reduction mammoplasty results in functional improvements in musculoskeletal pain, headache, sleep, and breathing. Its psychological benefits include improved self-esteem, sexual function, and quality of life as well as reduced anxiety and depression. After reduction mammoplasty, women appear to exercise more and have a reduction in eating disorders<sup>12</sup>.

Reduction mammoplasty with breast implant placement is indicated for patients with moderate or severe flaccidity with any degree of hypertrophy as well as a greater fat than glandular content. Patients who previously underwent bar-

iatric surgery and experienced significant weight loss can benefit from this technique. In our series, the rate of complications was acceptable and the long-term results were satisfactory for both patients and surgeons (Chart 1).

## CONCLUSION

Consistent long-term results, improved aesthetics, and maintenance of the projection of the upper pole as well as breast shape and firmness can be obtained with the tandem use of reduction mammoplasty and placement of a small-volume breast implant. This procedure is especially indicated for patients with large amounts of flaccid skin, ptosis, and breast hypertrophy as well as in those whose breasts have higher fat than glandular content.

Reduction mastoplasty associated with silicone implant is a safe procedure in selected cases and features a high degree of patient and surgeon satisfaction.

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\* **Corresponding author:**

**Oswaldo Ribeiro Saldanha**

Avenida Washington Luiz, 142 - Santos, SP, Brazil

Zip Code: 11.050-200

E-mail: clinica@clnicasaldanha.com.br