

Body Image and Quality of Life after Breast Implant Removal

Imagem corporal e qualidade de vida após explante mamário

Raissa Barakatt de Figueiredo¹ Eduardo Machado Mariano¹ Maria Madureira Murta¹
Wilson Cintra-Junior¹ Álvaro de Azevedo Ferreira¹ An Wan Ching¹ José Antônio Cezaretti¹

¹ Plastic Surgery Service, Instituto de Assistência Médica ao Servidor Público Estadual, São Paulo, SP, Brazil

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Address for correspondence Raissa Barakatt de Figueiredo, Serviço de Cirurgia Plástica, Instituto de Assistência Médica ao Servidor Público Estadual, Rua Pedro de Toledo 1.800, 9° andar, Vila Clementino, CEP: 04039-000, São Paulo, SP, Brazil (e-mail: raissa_barakatt@hotmail.com).

Abstract

Background Silicone breast implants were introduced into the surgical practice in the 1960s and have been widely used ever since, but with a decreasing percentage in aesthetic surgeries and with an increase in breast explant surgeries. The objective of the present study was to evaluate body image and quality of life before and after breast implant removal.

Materials and Methods The BREAST-Q questionnaire and the Breast Evaluation Questionnaire were applied pre- and postoperatively to 11 patients undergoing breast implant removal.

Results The BREAST-Q, with a score ranging from 0 to 100, revealed that satisfaction with the breasts increased from 52.3 to 64.3, and the mean satisfaction with the outcome was of 85.9. According to the Breast Evaluation Questionnaire, with a score ranging from 1 to 5, satisfaction with the appearance of the breasts increased from 3.0 to 3.8.

Conclusion The study suggests improved body image after breast implant removal, but further data is required to draw relevant conclusions.

Keywords

- ▶ body image
- ▶ breast implants
- ▶ mastodynia
- ▶ quality of life
- ▶ surgery
- ▶ plastic

Resumo

Introdução Os implantes mamários de silicone foram introduzidos na prática cirúrgica na década de 1960 e são muito utilizados desde então, mas com porcentagem cada vez menor entre as cirurgias estéticas e com aumento da explantação. O objetivo deste trabalho é avaliar a imagem corporal e a qualidade de vida antes e após o explante.

Materiais e Métodos Aplicação dos questionários BREAST-Q e Questionário de Avaliação das Mamas no pré e pós-operatório de 11 pacientes submetidas a explante mamário.

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Palavras-chave

- ▶ cirurgia plástica
- ▶ imagem corporal
- ▶ implante mamário
- ▶ mastodinia
- ▶ qualidade de vida

Resultados Pelo BREAST-Q, utilizando uma escala de 0 a 100, a satisfação com as mamas aumentou de 52,3 para 64,3, e a satisfação com o resultado teve uma média de 85,9. Pelo Questionário de Avaliação das Mamas, utilizando uma escala de 1 a 5, a satisfação com a aparência das mamas teve aumento de 3,0 para 3,8.

Conclusão O estudo sugere melhora da imagem corporal após a explantação, mas necessita de mais dados para gerar conclusões relevantes.

Introduction

The introduction of silicone breast implants into the surgical practice occurred in the 1960s,^{1,2} and these implants have been widely used ever since.^{3,4} The 2018 census of Sociedade Brasileira de Cirurgia Plástica (Brazilian Society of Plastic Surgery) indicates that augmentation mastoplasty is the most performed surgery in Brazil, but its percentage has been progressively decreasing over the years.⁵ Statistics from the American Society of Plastic Surgeons show an increase in breast implant removals from 2019 to 2020 in the United States.⁶

The most significant complications from silicone breast implants are capsular contracture, implant malposition, breast asymmetry, rupture, pain, and infection.^{4,7,8} In addition, cases of the association of silicone with systemic symptoms and potentially autoimmune diseases have been described, but with no clear evidence, and this remains a controversial topic.^{3,4,7-11}

Breast implant disease (BID) is an unofficial diagnosis of systemic symptoms starting after implant surgery.^{4,7,10} More than 100 distinct symptoms have been reported to date, and the most common include chronic fatigue, arthralgia, myalgia, cognitive impairment, dry mouth and eyes, alopecia, and skin lesions.^{3,4,7,11,12} There is a theory that pain perception changes due to a nociceptive stimulus caused by the breast implant and the extensive concern about implant safety, similar to fibromyalgia.^{3,9} Another theory is that BID is a functional somatic syndrome in which systemic symptoms result from a somatization disorder.⁴

Breast implant removal surgery is on the rise due to local and systemic symptoms, concerns about breast implant-associated anaplastic large cell lymphoma (BIA-ALCL), and lifestyle changes.^{7,8} Extensive media coverage on implant safety may contribute to this trend.¹⁰

Objective

The objective of the present study was to evaluate patients undergoing breast implant removal by comparing their body image and quality of life before and after the surgical procedure.

Materials and Methods

The present prospective study was conducted at Hospital do Servidor Público Estadual (which is part of the health system of Instituto de Assistência Médica ao Servidor Público Estadual, IAMSPE), São Paulo, Brazil, from December 2022 to

April 2023. The study evaluated 11 female patients who underwent breast implant removal at the Plastic Surgery outpatient clinic. The evaluation included the application of the Breast Evaluation Questionnaire^{13,14} and the breast reduction module of the BREAST-Q questionnaire^{15,16} before surgery and 60 days after the procedure. The Wilcoxon signed-rank test was used to assess the results.

The study included patients who wanted to remove their breast implants regardless of age. The reasons for the removal included breast pain, capsular contracture, fear of developing breast cancer, implant rupture or rotation, arthralgia resulting from rheumatoid arthritis with no improvement with drug treatment, and the presence of a solid peri-implant mass (▶ **Table 1**).

The surgical technique consisted of breast implant removal with partial or total capsulectomy, depending on the technical ease, followed by mastopexy with fat grafting if the resulting breast volume was small (▶ **Fig. 1**).

Results

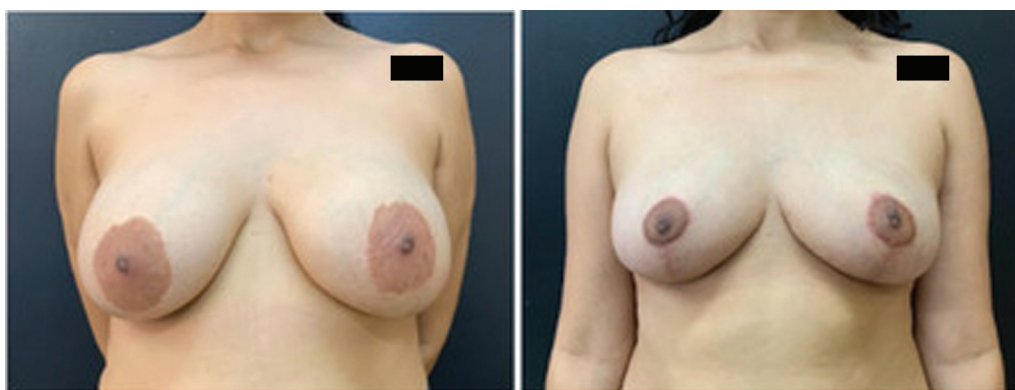
We evaluated 11 patients with a mean age of 55 (range: 40–87) years. We converted the answers to the breast reduction module of the BREAST-Q questionnaire to a Rasch scale ranging from 0 to 100, in which the higher the score, the greater the satisfaction and the better the quality of life.¹⁵ The mean score on the “breast satisfaction” module score in the preoperative period was of 52.3 (standard deviation [SD]: ± 18.6), and it increased to 64.3(±31.9) after surgery. The mean score on the “psychosocial well-being” module was of 67.9(±27.3) before and of 67.2 (±27.3) after surgery. The mean score on the “physical well-being” module was of 50.7(±25.0) before surgery, and it decreased to 36.6(±12.6) in the postoperative period (▶ **Table 2**).

Other assessments of BREAST-Q items assessments were only performed in the postoperative period. The mean score for satisfaction with the postoperative outcome was 85.9 (±17.1) (▶ **Tables 3–4**). Regarding satisfaction with the nipple-areola complex, 72.7% of the patients were very satisfied with the alignment and shape, 63.6% were very satisfied with its height in the breasts and its appearance, and 54.5% were very satisfied with its sensitivity (▶ **Table 5**).

In the other questionnaire, the Breast Evaluation Questionnaire (BEQ 55), the score for the answers in each sector ranges from 1 to 5, and, the higher the score, the greater the satisfaction.^{13,14} The mean score for satisfaction with breast

Table 1 Reasons for breast implant removal among the studied patients

Patient	Breast pain	Capsular contracture	Other reasons
1	Yes	Yes (Baker III)	Fear of a pathology (cancer)
2	Yes	No	No
3	Yes	No	Local mass
4	Yes	Yes (Baker IV)	Implant rotation
5	Yes	Yes (Baker IV)	No
6	Yes	Yes (Baker III)	Implant rupture
7	Yes	Yes (Baker I)	Systemic symptom (arthralgia)
8	Yes	No	No
9	Yes	No	No
10	Yes	Yes (Baker III)	No
11	Yes	No	No

**Fig. 1** Preoperative and 2-month postoperative photos of one of the studied patients.**Table 2** Scores on the pre and postoperative modules of the BREAST-Q

Modules	Preoperative			Postoperative			p-value
	Mean	Median	Standard deviation	Mean	Median	Standard deviation	
Satisfaction with the breasts	52.3	48.0	± 18.6	64.3	61.0	± 31.9	0.3276
Psychosocial well-being	67.9	66.0	± 27.3	67.2	66.0	± 27.3	0.8785
Physical well-being	50.7	51.0	± 25.0	36.6	40.0	± 12.6	0.0251

Note: Wilcoxon signed-rank test.

Table 3 Score on the postoperative module of the BREAST-Q

Satisfaction with the postoperative outcomes	Mean	Median	Standard deviation
	85.9	100.0	± 17.1

appearance was of $3.0(\pm 1.6)$ in the preoperative period, and of $3.8(\pm 1.5)$ in the postoperative period. The mean score regarding satisfaction with breast size went from $3.0(\pm 1.6)$ to $2.9(\pm 1.7)$ before and after surgery. The mean score for satisfaction with breast shape went from $2.4(\pm 1.6)$ to $2.9(\pm 1.7)$, and the mean score for satisfaction with breast firm-

ness increased from $2.4(\pm 1.2)$ to $3.2(\pm 1.7)$ from the pre- to the postoperative period. The results of the two questionnaires had no statistical relevance (► **Table 6**).

Discussion

Breast implant removal in BID cases relies on the theory of symptomatic improvement due to adjuvant withdrawal, reducing autoimmunity and nociceptive stimulus, and increasing psychological factors.^{3,4,11} In the present study, only one patient had systemic symptoms, that is, arthralgia resulting from rheumatoid arthritis, which progressively improved after surgery.

Table 4 Scores on the postoperative satisfaction module of the BREAST-Q

Satisfaction with the outcomes	Disagree		Partially agree		Totally agree	
	n	%	n	%	n	%
Undergoing the surgery was the best decision for me	0	0.0	0	0.0	11	100.0
I would encourage other women in my situation to undergo a surgery like mine	0	0.0	1	9.1	10	90.9
I would undergo it again	0	0.0	0	0.0	11	100.0
In general, the surgery was a positive experience	1	9.1	1	9.1	9	81.8
The surgery changed my life for the better	0	0.0	5	45.5	6	54.5
I do not regret undergoing the surgery	0	0.0	0	0.0	11	100.0
The outcome was exactly as I expected	0	0.0	3	27.3	8	72.7
It happened exactly as I planned	0	0.0	4	36.4	7	63.6

Table 5 Scores on the postoperative nipple satisfaction module of the BREAST-Q

Nipple satisfaction	Very unsatisfied		A little unsatisfied		A little satisfied		Very satisfied	
	n	%	n	%	n	%	n	%
How high or low are your nipples regarding your breasts?	1	9.1	0	0.0	3	27.3	7	63.6
How are your nipples aligned between them?	1	9.1	0	0.0	2	18.2	8	72.7
How is the shape of your nipples and areolas?	2	18.2	0	0.0	1	9.1	8	72.7
How is the appearance of your nipples and areolas?	1	9.1	1	9.1	2	18.2	7	63.6
How sensitive are your nipples?	1	9.1	2	18.2	2	18.2	6	54.5

Table 6 Scores on the pre and postoperative modules of the BEQ 55

Modules	Preoperative			Postoperative			p-value
	Mean	Median	Standard deviation	Mean	Median	Standard deviation	
Which is your degree of satisfaction with the SIZE of your breasts?	3.0	3.0	± 1.6	2.9	3.0	± 1.7	0.5281
Which is your degree of satisfaction with the SHAPE of your breasts?	2.4	2.5	± 1.6	2.9	3.0	± 1.7	0.7498
Which is your degree of satisfaction with the FIRMNESS of your breasts?	2.4	3.0	± 1.2	3.2	4.0	± 1.7	0.2812
Are you satisfied with the (visual) appearance of your breasts?	3.0	3.0	± 1.6	3.8	4.5	± 1.5	0.3079

Note: Wilcoxon signed-rank test.

Before deciding on surgery, patients must receive all the updated scientific information on the subject, to align their expectations with the potential outcomes. Local changes resulting from the expansive implant effect, that is, muscle and breast parenchyma atrophy and increased skin redundancy, require reporting. There is no evidence that the capsule requires complete removal in order for the symptoms to improve, and partial or total capsulectomy may be performed depending on local conditions. In addition, the risk of hematoma and pneumothorax requires assessment.¹⁷⁻¹⁹ After implant removal, the incisions may be simply closed, or mastopexy techniques may be combined with local flaps and fat grafts.²⁰

Few studies have evaluated the quality of life of patients after implant removal. Miranda²¹ used the BREAST-Q questionnaire for this purpose and noted an improvement after removal. No studies have used the Breast Evaluation Questionnaire in the context of implant removal.^{13,14}

In the current study, the BREAST-Q showed an increase in the mean score for satisfaction with the breasts after surgery and no change in psychosocial well-being. There was worsening of the physical well-being, probably due to the early postoperative application of the questionnaire, since many patients were still recovering from surgery. The overall satisfaction with surgery was high, and all

patients stated that “undergoing surgery was the best decision” and that they “would do it again” (–Table 4). The Breast Evaluation Questionnaire demonstrated improved satisfaction with breast appearance and improved breast shape and firmness. Both questionnaires showed positive initial outcomes but were limited by the small sample size and short follow-up period to assess the impact on quality of life.

There is a growing discussion about breast implants on social media, often with no scientific basis, with debates on the issues and safety of the procedure.^{4,10} This is a potential cause for the decrease in breast implant procedures and increased removal.⁵ Despite this trend, it is critical to highlight that breast implants remain the most widely used technique for breast augmentation, and the prevalence of BID and BIA-ALCL is extremely low.^{8,22}

Conclusion

Although initial data indicate an increase in satisfaction with the breasts after implant removal, we need to assess more patients during longer postoperative periods to draw conclusions on the impact on quality of life with significant outcomes.

Authors' Contributions

RBF: data analysis and/or interpretation, statistical analysis, data collection, conceptualization, study conception and design, project management, methodology, and writing – preparation of the original manuscript; **EMM:** Data collection, investigation, and writing – preparation of the original manuscript; **MMM:** data collection and writing – preparation of the original manuscript; **WC-J:** data analysis and/or interpretation final manuscript approval, project management, writing – manuscript review and editing, and supervision; **AAF:** data analysis and/or interpretation, final manuscript approval, study conception and design, writing – preparation of the original manuscript, writing – manuscript review and editing, and supervision; and **AWC and JAC:** supervision.

Clinical Trials

None.

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Conflict of Interests

The authors have no conflict of interests to declare.

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