Lactation Performance after Reduction Mammaplasty with or without Silicone Breast Implants

Desempenho da lactação após mamoplastia redutora com ou sem implante mamário de silicone

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Abstract

Introduction This study evaluated the impact of reduction mammaplasty, with or without implants, on breastfeeding.

Materials and Methods We analyzed 48 women who underwent the procedure from 2007 to 2023, divided into two groups: those who had children before surgery (n = 32) and those who became pregnant after surgery (n = 10). The surgical technique used was the superomedial pedicle approach, aiming to preserve glandular tissue and the lactiferous ducts' integrity.

Results In the group who had children before surgery, 93% successfully breastfed. In contrast, 80% of women who became pregnant after surgery could breastfeed, among whom 50% required supplementation.

Conclusion The results suggest that reduction mammaplasty, when well-planned and performed using techniques that preserve breast functionality, does not significantly compromise lactation. Surgeons should prioritize both aesthetics and functionality, and clearly inform patients about the potential impacts of surgery on breastfeeding.

Keywords

- breast implants
- breastfeeding women
- lactation disorders
- mammaplasty
- partial breastfeeding

Resumo

Introdução Este estudo avaliou o impacto da mamoplastia redutora, com ou sem implantes, na amamentação.

Materiais e Métodos Foram analisadas 48 mulheres submetidas ao procedimento entre 2007 e 2023, divididas em dois grupos: mulheres que tiveram filhos antes da cirurgia (n = 32) e mulheres que gestaram após o procedimento (n = 10). A técnica cirúrgica utilizada foi a de pedículo areolado superomedial, visando preservar o tecido glandular e a integridade dos ductos lactíferos.

Study performed at the Plastic Surgery Service, Hospital Daher Lago Sul, Brasília, DF, Brazil.

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Palavras-chave
- aleitamento materno
- aleitamento materno complementado
- implantes de mama
- mamoplastia
- transtornos da lactação

Resultados No grupo que gestou antes da cirurgia, 93% amamentaram com sucesso. Em contraste, 80% das mulheres que gestaram após a cirurgia conseguiram amamentar, entre as quais 50% precisaram de suplementação.

Conclusão Os resultados sugerem que a mamoplastia redutora, quando bem planejada e executada com técnicas que preservam a funcionalidade das mamas, não compromete significativamente a lactação. Cirurgiões devem priorizar tanto a estética quanto a funcionalidade, informando claramente às pacientes sobre os potenciais impactos da cirurgia no aleitamento.

Introduction

Breastfeeding provides substantial benefits for infant and maternal health.[1,2] The World Health Organization (WHO) recommends exclusive breastfeeding for infants/newborns up to 6 months old, with continued breastfeeding along with proper supplementary foods at least up to 2 years old.[3] The global target is a 50% exclusive breastfeeding rate at 6 months by 2025; the current rate is 38%.[4] The Ministry of Health reported that, in 2022, approximately 46% of Brazilian children under 6 months received breastfeeding alone.[5]

The available articles on lactation performance after breast reduction surgery are uneven and lack adequate control groups. Aboudib et al.[6] reported normal breastfeeding in 91% of 11 patients who underwent the Pitanguy reduction mammaplasty. Sandsmark et al.[7] documented a 65% breastfeeding success rate in 292 women who underwent breast reduction using six different techniques. Marshall et al.[8] observed that 73% of 28 women who underwent different breast reduction techniques before pregnancy were able to breastfeed at the time of hospital discharge after delivery. Harris et al.[9] found a 45% success rate in a group of 20 patients who underwent inferior pedicle mammaplasty. Brzozowski et al.[10] evaluated 37 patients submitted to the inferior pedicle technique and found a 62% success rate. A review of the literature demonstrates a wide variation, from 45 to 91%, in the success rate of breastfeeding after breast reduction surgery with pedicle transposition of the areola-nipple complex.[11]

According to the 2018 Census from the Brazilian Society of Plastic Surgery,[12] reduction mammaplasty is the fourth most performed surgery in Brazil. In addition to its high demand, there are uncertainties regarding the procedure, especially for young patients who wish to become pregnant. One of the main concerns relates to breastfeeding, including scarring, breast sensitivity, as well as breast evolution over time or after pregnancy and breastfeeding. Surgeons' experience and studies cannot accurately predict the likelihood of potential postoperative breastfeeding due to low sample sizes, inadequate controls, and the multiple factors that can hinder or benefit breastfeeding.

Physiologically, there are three stages of lactogenesis. Stage I, which occurs in mid-pregnancy, features secretory differentiation of the lobular alveolar epithelium, but the gland remains quiescent. This period of quiescence depends on high circulating progesterone levels. Stage II, the onset of milk secretion, begins 2 to 3 days postpartum due to a drop in plasma progesterone, while the prolactin level remains high.[13–15] As long as prolactin secretion continues and milk exits the gland, mature breast function is maintained. The hallmark of stage III is sustained lactation.

Successful breastfeeding requires two factors. The first is maintaining the connection between the mammary gland and nipple through the mammary ducts. Disconnection prevents milk release during breastfeeding. The second is preserving as much mammary gland tissue as possible for milk production. Even though the exact amount of tissue remains unknown, greater preservation is likely to increase the chances of successful breastfeeding.

Objective

This study aimed to demonstrate the percentage of women who successfully breastfed after undergoing reduction mammaplasty with or without implants and to compare this rate with the success of women with similar profiles who had not undergone breast surgery. Furthermore, we discussed potential detrimental factors based on the literature and the respondents' answers. Ultimately, it will be possible to provide future patients with reliable and detailed data on the surgery's potential impacts on breastfeeding, enabling them to make informed decisions about treatment.

Materials and Methods

This descriptive qualitative and quantitative study occurred in the city of Brasília, Distrito Federal, Brazil, with women who underwent reduction mammaplasty with and without silicone implants. Participants met the following inclusion criteria: they underwent primary reduction mammaplasty surgery in the study's center and became pregnant after the procedure, between June 2007 and July 2023.

The exclusion criteria were women who did not have children after the surgery, did not answer the questionnaire, or did not sign the informed consent form. The control group for this research consisted of women who also underwent primary reduction mammaplasty but who already had children before surgery.

For data collection, a questionnaire was created on Google Forms (Google LLC.) and sent to the selected patients. It

contained questions about the type of surgery (reduction mammaplasty with or without implants); the date of the surgery; previous breast surgeries (yes/no, type); whether they had children before the surgery (yes/no, how many); whether they were able to breastfeed; the reason for any potential inability to breastfeed; the number of children after the surgery; breastfeeding capacity and duration; any need for formula supplementation; and possible reasons for failure.

The study included 48 women. Their data were objectively analyzed using statistics and graphs.

Results

The study evaluated 48 women who underwent mammaplasty with MCC as the main surgeon, including 22 with silicone implants and 26 without. All surgeries with implants were performed in the retroglandular plane from 1990 to 2024.

In our cohort, 36 patients already had children before surgery, with 33 (91.7%) reporting successful breastfeeding for a variable time, predominantly longer than 6 months. Among them, 13 (36%) women used formula supplementation in the first 4 months.

After surgery, 20 women had children, and 16 (80%) successfully breastfed, most for longer than 4 months. Further, 7 (35%) reported requiring formula supplementation. Among those who failed to breastfeed, the key cause was difficulty in breast emptying despite milk production.

The natural breastfeeding rate was over 90% before surgery and approximately 80% after mammaplasty, indicating a moderate impact of the procedure on lactation. The need for supplementation, both before and after surgery, remained around 35%.

Discussion

Breastfeeding is a complex process involving multiple physiological mechanisms. Several factors can negatively interfere with its occurrence and success, including mammaplasty. This surgical procedure can impact lactogenesis due to breast tissue reduction, potential lactiferous duct interruption (particularly when incisions occur around the areola or in the inframammary region), and alterations resulting from the scarring process. As such, mammaplasty may compromise milk production and ejection.[16,17]

In this study, patients underwent mammaplasty with a superomedial areolar pedicle, with or without prosthesis implantation. These surgical techniques involve resecting a triangle of tissue at the junction of the breast's lower quadrants and repositioning the areola-nipple complex and the remaining mammary gland. It is worth emphasizing that the breast's lower pole has fewer milk-producing units, which may explain the reduced frequency of hypogalactia after this procedure.[18]

The scarring process and its potential complications, such as hematoma, seroma, and infection, can also unpredictably interfere with breast function. Therefore, each case requires individualized assessment.[19]

A relevant point for discussion, still little explored in the literature, is the influence of breast implant insertion on breastfeeding success. In the present study, although there was no statistically significant difference in breastfeeding success rates between patients with and without implants, we observed a trend for a greater need for supplementation in patients who received implants. This higher supplementation requirement may result from breast tissue compression by the implant, changes in the local vascularization, or surgical damage to the lactiferous ducts during surgery. These factors deserve further investigation. Previous studies suggested that breast-sparing surgical techniques and implant placement in the retroglandular plane can minimize these impacts.[18]

Moreover, some mothers reported issues, such as an inability to totally empty the breast despite adequate milk production, pointing to potential alterations in milk ejection resulting from the surgery.

In a comparison with population data, the 2019 National Study of Infant Feeding and Nutrition reported that 96.2% of Brazilian children were breastfed at some point, and 45.8% received exclusive breastfeeding until 6-months-old.[18] Although the success rates observed in the present study are consistent with these values, the need for supplementation in a significant proportion of patients highlights the importance of multidisciplinary follow-up to guide breastfeeding after mammaplasty.

Lastly, it is worth mentioning that both the WHO and the Brazilian Ministry of Health recommend breastfeeding at least until 2-years-old, with exclusive breastfeeding for the first 6 months after birth. These recommendations emphasize the role of strategies promoting and preserving breastfeeding even after breast surgery.[20,21]

Conclusion

When comparing our data with studies from the Brazilian Ministry of Health, the number of women who successfully breastfeed is very similar. This indicates that reduction mammaplasty maintains breastfeeding ability. Therefore, all women who undergo this surgery should be encouraged to breastfeed.

As plastic surgeons, we must achieve a good aesthetic outcome, including proper shape, symmetry, final volume, and cicatrization. The long-term effects must always be a concern, to minimize the risk of complications, and the consequences of poorly performed plastic surgeries.

As such, although at first any surgical procedure on the breasts can influence breastfeeding success, minor procedures with no nipple involvement usually do not affect lactation.

Data Availability

Data will be available upon request to the corresponding author.

Authors' Contributions

BZVB: data analysis and/or interpretation, statistical analysis, final manuscript approval, funding acquisition, data

collection, conceptualization, study conception and design, resource management, project management, investigation, methodology, performance of surgeries and/or experiments, writing – original draft, writing – review & editing, software, supervision, validation, and visualization; MCC: supervision; IMS: writing – original draft; SFAG: writing – review & editing; LVD: investigation; and JCD: supervision.

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Conflict of Interests
The authors have no conflict of interests to declare.

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