

# TRENDS AND ATTITUDES TOWARD ONCOPLASTICS TRAINING IN MASTOLOGY IN BRAZIL

## Tendências e atitudes para o treinamento oncoplástico em Mastologia no Brasil

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### ABSTRACT

**Introduction:** There is a growing interest in, and an increasing demand for, oncoplastic (OP) and reconstructive surgery training by breast surgeons. However, until now there has been a lack of a specific model for training in this field in most countries and no data with respect to learning curves. Mastology has been a medical specialty in Brazil since 1978. It is fully dedicated to studying, preventing, diagnosing, and managing all diseases of the breast. Incorporation of OP and reconstructive surgery in Mastology presents a number of challenges, and there are some controversial issues to overcome. **Objective:** The purpose of this study, therefore, was to analyze how OP and reconstructive techniques are being incorporated into surgical training in Mastology in Brazil. **Methods:** A specific survey was designed to cover all surgical residents who concluded their regular program in Mastology in Brazil in 2015 and 2016. **Results:** One hundred twenty-four residents from 49 breast units were included, with the majority having their training for all 2 years of their residence, as recommended by the Brazilian Society of Mastology. In addition, most of the respondents were able to perform partial breast reconstructions and reconstructions using expanders and implants, but 20% of them had a lack of specific training in these techniques. **Conclusion:** As adequate local control of disease and quality of life are related to surgical decisions, it is expected that breast surgeons expand their limits and responsibilities in order to improve the reality of most breast cancer patients.

**KEYWORDS:** Breast reconstruction; oncoplastic surgery; education, medical; breast neoplasms.

### RESUMO

**Introdução:** Existe um interesse e uma demanda crescente de treinamento oncoplástico (OP) e cirurgia reconstrutiva por cirurgiões de mama. No entanto, até agora tem faltado um modelo específico de treinamento neste campo na maioria dos países, sem dados com relação à curva de aprendizado. A Mastologia tem sido uma especialidade médica no Brasil desde 1978. É totalmente dedicada a estudar, prevenir, diagnosticar e gerenciar todas as doenças da mama. A incorporação de OP e cirurgia reconstrutiva na Mastologia apresenta uma série de desafios, e há algumas questões controversas a serem superadas. **Objetivo:** O objetivo deste estudo, portanto, foi analisar como a OP e as técnicas reconstrutivas estão sendo incorporadas no treinamento cirúrgico em Mastologia no Brasil. **Métodos:** uma pesquisa específica foi projetada para cobrir todos os residentes cirúrgicos que concluíram seu programa regular em Mastologia no Brasil em 2015 e 2016. **Resultados:** Foram incluídos 124 residentes de 49 unidades mamárias, com a maioria treinada durante todos os 2 anos de residência, conforme recomendado pela Sociedade Brasileira de Mastologia. Além disso, a maioria dos entrevistados foi capaz de realizar reconstruções e reconstruções mamárias parciais usando expansores e implantes. Mas ainda 20% deles apresentaram falta de treinamento específico nestas técnicas. **Conclusão:** uma vez que o controle local adequado da doença e da qualidade de vida está relacionado às decisões cirúrgicas, espera-se que os cirurgiões de mama ampliem seus limites e responsabilidades para melhorar a realidade da maioria dos pacientes com câncer de mama.

**PALAVRAS-CHAVE:** Reconstrução mamária; cirurgia oncoplástica; educação médica; neoplasias de mama.

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## INTRODUCTION

Surgical management of early breast cancer includes partial and total reconstruction in order to achieve appropriate tumor extirpation and minimize deformities. Poor cosmetic outcomes and asymmetry after breast cancer surgery can lead to fear of death, a loss of femininity and a decline in the quality of life<sup>1</sup>. In order to meet these needs, oncoplastic surgery (OP) is now part of surgical training and competency in Mastology in Brazil.

Although OP was pioneered by European surgeons, particularly in France and Germany, there are breast surgeons in Brazil who started performing these techniques in the 1980s. In addition, the field of Mastology, as a medical specialty in Brazil, has experienced an increasing interest from breast residents, fellows and specialists (“mastologists”) in OP over the past 15 years.

However, the incorporation of OP techniques in Mastology presents a number of challenges and controversial issues. One of these issues is the lack of a specific model for OP training. In addition, some controversies remain in many countries about whether it is better to have breast surgeons and plastic surgeons working together, or a breast specialist doing everything in most, or indeed in all, cases. Also, surgical mentoring is a significant challenge for all specialties<sup>2-16</sup>. The delivery of qualified OP and reconstructive training is expected to be tailored as to meet educational needs and to be recognized internationally.

The purpose of this study, therefore, was to analyze how OP techniques are being incorporated into surgical training in Mastology, in Brazil, and to address potential concerns for the better training of future specialists in breast surgery.

## METHODS

A specific survey was designed by the authors to assess the current surgical training in OP in Mastology in Brazil. The questionnaire had 25 multiple-choice items and it was disseminated to all surgical residents who concluded their Mastology program in Brazil in two consecutive years (2015 and 2016). The survey was anonymously applied just before their test for being approved as specialists by the Brazilian Society of Mastology. The surveys were then collected and exported to Microsoft Excel®. All completed surveys were analyzed using IBM SPSS statistical software for Windows, version 20.0 (SPSS, Chicago, IL). Multiple-choice scales were analyzed as ordinal variables. Bivariate analyses using Pearson's  $\chi^2$  were carried out in order to analyze the categorical data obtained from the research and to compare the residents' answers about which professional was responsible for the training of breast surgeons in each institution, whether plastic surgeons or mastologists. All results found to be statistically significant, with a two-sided alpha error of <0.05, were further analyzed by calculating crude *odds ratios* (OR) and 95% CI, which allowed the identification of demographic determinants of attitudes towards training in OP.

## RESULTS

In Brazil, there are 49 breast units accredited by the Brazilian Society of Mastology and by the Brazilian National Committee for Residence Training to provide specific training in Mastology. Each year, more than 60 residents attend these programs. This study included 124 residents who concluded their training in Mastology in 2015 and 2016. All but two of the residents responded to this survey, and the characteristics of those with valid surveys and their related breast units are listed in Table 1. Table 2 shows how

**Table 1.** Characteristics of breast units and Medical Residents who concluded their surgical training in Mastology in Brazil in 2015–2016.

Characteristic	n (%)
Sex	
Male	37 (29.8)
Female	87 (70.2)
Number of new breast cancer cases/year in the Breast Unit where the resident was trained	
50–100	7 (5.6)
101–200	23 (18.5)
201–300	27 (21.8)
>300	67 (54.8)
Who is in charge of breast reconstructions in the Breast Unit?	
Mastologist	25 (20.1)
Plastic surgeon	49 (39.5)
Mastologist and plastic surgeon (both perform breast reconstructions)	50 (40.3)

**Table 2.** Characteristics of oncoplastic and reconstructive surgeries in Mastology' residents breast unit.

Characteristics of the breast reconstructions in the Breast Unit	n (%)
% of immediate breast reconstructions after mastectomies	
<10%	18 (14.5)
10–20%	31 (25.0)
20–50%	27 (21.8)
>50%	48 (38.7)
How most of breast reconstructions after mastectomy are done?	
Mostly with expanders/implants	105 (84.7)
Mostly with pedicle flaps	18 (14.5)
Mostly with microsurgical flaps	1 (0.8)
% of breast conserving surgeries with oncoplastic techniques	
<10%	30 (24.2)
10–20%	26 (21.0)
20–50%	35 (28.2)
>50%	33 (26.6)

breast reconstructions are carried out in Mastology residence training, in Brazil.

Three different realities, in terms of surgical training in OP, emerged from this survey. Most Mastology residents did their training in OP for the whole period of residence. Besides, around 20% of residents had been in specific stages in Plastic Surgery Departments for 3 months, and around 20% did not have access to these stages or only had minimal contact with these techniques (Figure 1).

Table 3 shows what residents feel able to do after 2 years of surgical training in Mastology in comparison to those who are performing OP and reconstructive surgery in the unit.

## DISCUSSION

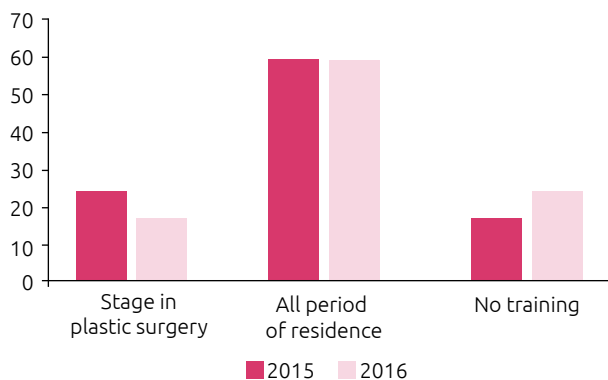
New generations of breast surgeons should now be oncoplastic surgeons. In other words, oncoplastic surgeons are specialist breast surgeons. While the controversy about whether breast or plastic surgeons should perform breast reconstruction is still present in some countries, the breast is an aesthetic-functional organ, and surgeons who perform breast surgeries should always consider aesthetic outcomes in all their procedures. It is expected that even those breast surgeons who work together

with plastic surgeons will perform better surgeries if they incorporate skills in plastic surgery of the breast.

However, until now, there is a lack of a specific model for training in OP in most countries, and no data with respect to learning curves. In Brazil, Mastology has been a medical specialty since 1978. It is fully dedicated to studying, preventing, diagnosing, and managing all diseases of the breast. There are 2 years of specific residence training, which is completed after 2 or 3 years in General Surgery or Gynecology. During this period, the medical resident attends an educational program approved by the Brazilian Society of Mastology and by the Brazilian National Committee for Residence Training, carried out in 49 different institutions (both public and private). There are specific stages in their regular training regarding radiology, pathology, medical and radiation oncology, and surgery (benign, oncologic, reconstructive and aesthetics ones).

Traditionally, breast cancer surgeries have been performed in many countries by general surgeons/surgical oncologists or gynecologists, together with plastic surgeons when breast reconstruction is recommended. In some countries, however, breast surgeons carry out the majority of OP and reconstructive surgeries. In the United Kingdom, for example, general surgery trainees undertake OP during their last 3 years of specialty rotations, which can be supplemented by a one-year fellowship in a highly competitive National Training Interface Group<sup>7</sup>. There are several potential advantages to the development of the breast surgeon specialist with OP and reconstructive skills. There are many places in Brazil, as the big country it is, with just a few plastic surgeons available to provide reconstructive surgeries for all patients in need. Fully trained OP breast surgeons would be able to carry out more extensive resections and avoid some unnecessary mastectomies, achieving symmetry intraoperatively<sup>13</sup>.

The survey highlighted the fact that, when a breast surgeon is in charge of breast reconstruction (alone or in collaboration with a plastic surgeon), the Mastology resident has better training in all levels of skills in OP and reconstructive techniques than those



**Figure 1.** Breast Surgeons Training in Oncoplastic Surgery in Brazil in 2015 and 2016.

**Table 3.** What the resident in Mastology is able to do in oncoplastic and reconstructive surgery at the end of their training, according to who is in charge of breast reconstruction in the breast unit.

Technique	Breast Surgeon does Reconstruction (n=75)	Plastic Surgeon does Reconstruction (n=47)	P
Partial reconstruction	66 (88%)	15 (32%)	<0.0005
Expander/implants	58 (77%)	5 (11%)	<0.0005
Latissimus dorsi	31 (41%)	3 (6%)	<0.0005
TRAM	11 (15%)	1 (2%)	0.028
Breast reduction	46 (61%)	5 (11%)	<0.0005
Augmentation mammoplasty	40 (53%)	4 (9%)	<0.0005

TRAM: transverse rectus abdominis myocutaneous.

who were trained in breast units where there are no breast surgeons performing breast reconstructions<sup>3</sup>. This phenomenon is probably related to some controversies between the specialties of Mastology and plastic surgery, which have not yet been resolved in Brazil. It was also shown that most residents are able to do partial reconstructions and reconstructions with expanders and implants. In an ideal situation, both specialties could, together, contribute to the better education of breast and plastic surgery residents. In Brazil, a discrepancy between private and public health practice has been noted due to the lack of a populational mammographic screening program<sup>17,18</sup>. As a consequence, public health care institutions more often have more advanced cases than private ones. Indications and techniques of reconstruction can vary as well as the levels of training.

In the United States, where breast surgery is not a medical specialty, breast diseases comprise 14–25% of general surgeons' practice by volume. Nearly half of all general surgeons perform only two or fewer breast cases per month. Unquestionably, survival is linked to performance measures. For instance, survival is greater if surgeons perform more than 15 breast cancer operations per year. Breast-focused surgeons, according to an editorial by Pass, Klimberg and Copeland III, are more competent<sup>8</sup>. It is worth noting that most Mastology residents are trained in breast units with large numbers of new breast cancer cases and that breast reconstruction is a major element in most of these cases, indeed being performed in most of them.

However, there are controversial issues to be resolved between breast and plastic surgeons regarding boundaries and who should be in charge of OP and reconstructive surgery. Future directions for the training of mastologists/breast surgeons and plastic surgeons should include exchange of experiences, which

would be very positive for both specialties and for patients. There is a growing interest in, and an increasing demand for, OP and reconstructive surgery in the field of Mastology in Brazil, as well as for breast surgeons around the world. The challenge will be to deliver qualified OP and reconstructive training, both theoretical and practical, which can be tailored to meet educational needs and also be internationally recognized. The avoidance of errors is essential, which requires training in early recognition and the ability to deal with complications.

Finally, it will be regarded the issue of competence. Conceptually, competence can be defined as being both physically and intellectually adequate or well qualified for a given activity. Breast surgeons should be well trained and competent in all aspects of breast oncology and have broad understanding of breast defects and all their reconstructive requirements, as well as being proficient in prevention and providing care for all potential complications. This is the challenge for present and future mentoring of breast surgeons<sup>3-16</sup>. Adequate local control of disease and quality of life are both deeply related to surgical decisions and skills at the moment of breast cancer diagnosis and treatment. This means breast surgeons must expand their limits and responsibilities in order to improve the reality of most breast cancer patients.

## CONCLUSION

The Brazilian program for OP and reconstructive training in Mastology demonstrates an appropriate efficacy regarding educational environment in most breast units. However, this is only a starting point to identify and further develop standards for OP and reconstructive training and credentials at international level.

## REFERENCES

1. Waljee JF, Hu ES, Ubel PA, Smith DM, Newman LA, Alderman AK. Effect of Esthetic Outcome After Breast-Conserving Surgery on Psychosocial Functioning and Quality of Life. *J Clin Oncol*. 2008;26:3331-7.
2. Rombeau J, Goldberg A, Loveland-Jones C. *Surgical mentoring: building tomorrow's leaders*. New York: Springer; 2010.
3. Urban CA. New classification for oncoplastic procedures in surgical practice. *The Breast*. 2008;17(4):321-2.
4. Cardoso MJ, Macmillan D, Merck B, Munhoz AM, Rainsbury R. Training in oncoplastic surgery: an international consensus. *The 7th Portuguese Senology Congress, Vilamoura, 2009. The Breast*. 2010;19:538-40.
5. Brown I, Wilson CR, Doughty JC, George WD, Cooke TG, Weiler-Mithoft EM, et al. The future of breast surgery: a new subspecialty of oncoplastic breast surgeons? *The Breast*. 2004;13:82.
6. Audisio R, Chagla LS. Oncoplastic fellowship: can we do better? *The Breast*. 2007;16:11-2.
7. Down SK, Pereira JH, Leinster S, Simpson A. Training the oncoplastic breast surgeon—current and future perspectives. *Gland Surg*. 2013;2(3):126-7.

8. Pass HA, Klimberg SV, Copeland III EM. Are “breast-focused” surgeons more competent? *Ann Surg Oncol*. 2008;15:953-5.
9. Losken A, Kapadia S, Egro FM, Baecher KM, Styblo TM, Carlson GW. Current Opinion on the Oncoplastic Approach in the USA. *Breast J*. 2016 (in press). doi: 10.1111/tbj.12592
10. Urban CA. Oncoplastic in pre-paradigm era: a Brazilian perspective in an American problem. *Plast Reconstr Surg*. 2010;125:1839-41.
11. Nahabedian MY. “Plastic surgery”... beware. *Plast Reconstr Surg*. 2014;133:965-6.
12. Losken A, Nahabedian MY. Oncoplastic breast surgery: past, present, and future directions in United States. *Plast Reconstr Surg*. 2009;124:969-72.
13. Urban CA, Schwartz JC. Oncoplastic surgeons: heroes or villains? *Plast Reconstr Surg*. 2014;133:845-6.
14. Urban CA, Rietjens M, Hurley II J. Oncoplastic and reconstructive surgery: qualifications, limits, and mentoring. In: Urban CA, Rietjens M (eds.). *Oncoplastic and reconstructive breast surgery*. New York: Springer; 2013.
15. Munhoz AM, Aldrighi CM, Ferreira MC. Paradigms in oncoplastic breast surgery: A careful assessment of the oncological need and esthetic objective. *Breast J*. 2007;13:326-7.
16. Matthes AGZ, Vieira R, Micheli RAD, Ribeiro GH, Bailão A Jr., Haikel RL, et al. The development of an oncoplastic training center – OTC. *Int J Surg*. 2012;10:265-9.
17. Liedke PE, Finkelstein DM, Szymonifka J, Barrios CH, Chavarri-Guerra Y, Bines J, et al. Outcomes of breast cancer in Brazil related to health care coverage: a retrospective cohort study. *Cancer Epidemiol Biomarkers Prev*. 2014 Jan;23(1):126-33.
18. Lee BL, Liedke PE, Barrios CH, Simon SD, Finkelstein DM, Goss PE. Breast cancer in Brazil: present status and future goals. *Lancet Oncol*. 2012 Mar;13(3):e95-e102.