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2025 International Symposium on Breast Diseases of Inland São Paulo: oncoplastic surgery in breast cancer treatment

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ABSTRACT

Introduction: Oncoplastic surgery has become an essential component of breast cancer management, aiming to balance oncologic safety with aesthetic outcomes. However, controversies persist regarding its application in specific clinical scenarios, such as multicentric tumors, implant-based reconstruction in the context of adjuvant radiotherapy, and reconstruction after inflammatory breast cancer with optimal response. **Methods:** This study reports the clinical guidelines established during the 2025 International Symposium on Breast Diseases of Inland São Paulo. A total of 110 panelists participated, including 99 mastologists (90%) and 11 breast cancer–related specialists (pathologists, breast imaging specialists, radiotherapists, and clinical oncologists; 10%). Four priority topics were addressed through evidence-based lectures, followed by structured technical discussions and anonymous electronic voting. Consensus was defined as agreement ≥75%. **Results:** Sectoriectomy with oncoplastic techniques was preferred for the management of multicentric tumors (65%), although consensus was not achieved. Prepectoral implant-based reconstruction was the most frequently selected option (53%), also without consensus. Consensus was reached regarding the use of definitive implants in patients undergoing adjuvant radiotherapy (80%) and the absence of an absolute contraindication to breast reconstruction in cases of inflammatory breast cancer with optimal response to systemic therapy (84%). **Conclusions:** These guidelines reflect contemporary oncoplastic practice, emphasizing breast preservation, oncologic safety, and aesthetic outcomes. The use of definitive implants in the setting of adjuvant radiotherapy and breast reconstruction after inflammatory carcinoma with optimal response is supported by consensus. In contrast, the management of multicentric tumors and implant positioning remains individualized, underscoring areas where further prospective research is needed.

KEYWORDS: breast neoplasms; oncoplastic surgery; mammaplasty; breast reconstruction; radiotherapy, adjuvant; inflammatory breast neoplasms.

INTRODUCTION

Oncoplastic surgery integrates oncologic and plastic surgery techniques to optimize local control of breast cancer while preserving aesthetics and quality of life[1]. The 2025 International Symposium on Breast Diseases of Inland São Paulo, held on April 4–6, 2025, convened 110 panelists, including 99 mastologists (90%) and 11 professionals involved in the diagnosis and treatment of breast cancer — pathologists, breast imaging specialists, radiotherapists, and clinical oncologists (10%). The symposium brought together experts to standardize oncoplastic practices

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in Brazil, guide medical decision-making, address gaps in the literature, and establish evidence-based clinical guidelines for four critical areas: multicentric tumors, implant-based breast reconstruction, adjuvant radiotherapy, and inflammatory breast carcinoma (IBC). Multicentric tumors — defined as lesions in distinct quadrants or separated by more than 5 cm — challenge breast-conserving surgery due to difficulties in achieving clear margins and maintaining aesthetic outcomes[2]. Breast reconstruction with implants, either prepectoral or subpectoral, is influenced by factors such as skin flap thickness and radiotherapy exposure[3]. Adjuvant radiotherapy increases complication risks, but advances enable definitive implant use[4]. Although IBC is aggressive, reconstruction may be considered following an optimal neoadjuvant response[5].

METHODS

The 2025 International Symposium on Breast Diseases of Inland São Paulo was a two-day event held in São Paulo, Brazil. It convened 110 panelists, including 99 mastologists and 11 professionals involved in the diagnosis and treatment of breast cancer, including pathologists, breast imaging specialists, radiotherapists, and clinical oncologists. Panelists were selected based on expertise in their respective fields, with a minimum of ten years of clinical experience or significant academic contributions — subh as peer-reviewed publications or leadership in national breast cancer societies. The symposium acknowledged 94 panelists and organizers (listed in the Acknowledgments), with an additional 13 co-authors contributing to the manuscript preparation, together comprising 107 of the 110 panelists.

Plenary sessions addressed four thematic axes:

1. Approach to multicentric tumors;
2. Primary option for implant-based breast reconstruction (prepectoral vs. subpectoral);
3. Optimal approach in adjuvant radiotherapy (definitive implant vs. tissue expander); and
4. Absolute contraindication to breast reconstruction in inflammatory carcinoma with optimal response.

Each topic was introduced with a 10-minute evidence-based lecture, followed by a 50-minute technical debate among panelists, discussants, and speakers. Anonymous electronic voting was conducted by all 110 panelists, with consensus defined as ≥75% agreement. Results were tabulated descriptively and drafted as clinical guidelines. The event's significance lies in its multidisciplinary composition — 90% mastologists and 10% specialists from complementary fields (pathologists, breast imaging specialists, radiotherapists, and clinical oncologists) — fostering collaboration to standardize oncoplastic practices in Brazil and address gaps in the literature.

RESULTS

Approach to multicentric tumors

Voting results (panelists)

- Sectoriectomy with oncoplastic techniques: 65%
- Mastectomy with reconstruction: 35%

Multicentric tumors, defined as lesions in different quadrants or separated by more than 5 cm, complicate breast-conserving surgery due to difficulties in achieving clear margins and satisfactory aesthetic outcomes[2]. The American Joint Committee on Cancer 7th edition classifies multifocal and multicentric tumors as ipsilateral multiple breast cancers[2]. Two approaches were debated: breast-conserving surgery with oncoplastic techniques and mastectomy with immediate reconstruction[1].

Rationale and evidence

- Sectoriectomy with oncoplastic techniques: Enables the resection of larger or multicentric tumors while ensuring adequate local control and favorable aesthetic results[6]. Studies show comparable oncologic outcomes to mastectomy in selected cases, with fewer complications and the benefit of breast preservation[6,7].
- Mastectomy with reconstruction: Preferred when breast-conserving surgery is not feasible (e.g., due to unfavorable tumor-to-breast ratio or insufficient tissue for remodeling) or in patients with high-penetrance genetic mutations[7-15].

DISCUSSION

The preference for oncoplastic techniques (65%) aligns with global trends favoring breast preservation[6]. However, the absence of consensus (<75%) reflects ongoing debates, with some studies advocating mastectomy for extensive multicentric disease due to higher recurrence risks[2]. Compared to the National Comprehensive Cancer Network (NCCN) guidelines, which recommend individualized approaches, the symposium emphasized the role of oncoplastic surgery in selected cases[14]. In contrast, the 2023 European Society for Medical Oncology (ESMO) guidelines recommend mastectomy for multicentric tumors with unfavorable characteristics, highlighting a divergence[16-20]. The symposium's findings may encourage Brazilian surgeons to adopt oncoplastic techniques, potentially improving patients' quality of life and reducing mastectomy rates. Nevertheless, further research is needed to address recurrence risks in complex cases.

Practical recommendations

- Selection criteria: Perform a thorough physical examination and utilize high-quality imaging (mammography, ultrasonography, tomosynthesis, magnetic resonance

imaging) to assess tumor extent[1]. Ensure a suitable tumor-to-breast ratio for oncoplastic surgery[6].
- Surgical approach: Recommend oncoplastic surgery for eligible patients to enable effective tumor resection with immediate partial reconstruction[6]. Consider mastectomy with reconstruction when tumor distribution compromises oncologic safety or aesthetic outcomes[7].

CONCLUSION

Sectoriectomy with oncoplastic techniques was the preferred approach for multicentric tumors (65%), supporting breast preservation and favorable aesthetic outcomes without compromising oncologic safety[1,6].

Approach to implant-based breast reconstruction (prepectoral vs. subpectoral)

Voting results (panelists)
- Prepectoral: 53%
- Subpectoral: 47%

Implant-based reconstruction is the most common approach in breast cancer treatment centers[3]. Prepectoral and subpectoral techniques were debated, each with distinct advantages and complications[8].

Rationale and evidence

- Prepectoral reconstruction: Involves implant placement above the pectoralis major muscle, reducing postoperative pain, animation deformity, and capsular contracture, but with higher risk of implant loss and rippling[8,9]. Indicated for small-to-medium-volume breasts with thick subcutaneous flaps[9].
- Subpectoral reconstruction: Offers greater implant support and lower rippling rates but increases postoperative pain and animation deformity[10]. Indicated for thin subcutaneous flaps[10].

DISCUSSION

The slight preference for prepectoral reconstruction (53%) reflects its advantages in reducing animation-related complications, particularly in radiotherapy-exposed patients[8]. The absence of consensus indicates variability in practice, consistent with studies showing no definitive superiority[3]. The 2022 ESMO guidelines favor subpectoral reconstruction for thin flaps, while the symposium's findings align with emerging evidence supporting prepectoral approaches in selected patients[12,20]. This shift may influence Brazilian surgical training by reducing postoperative morbidity and improving aesthetic outcomes. However, long-term data on prepectoral reconstruction are still needed to confirm its benefits.

Practical recommendations

Recommend prepectoral reconstruction for small-to-medium-volume breasts with subcutaneous flaps measuring approximately 1 cm or thicker[8,9]. Use subpectoral reconstruction for thin flaps or higher dehiscence risk[10].

CONCLUSION

Prepectoral reconstruction was the preferred approach (53%), offering favorable aesthetic outcomes and reduced complication rates in appropriately selected patients[8,9].

Optimal approach in adjuvant radiotherapy for breast reconstruction

Voting results (panelists)
- Definitive implant: 80%
- Tissue expander: 20%

Implants — either definitive or tissue expanders — are primary options for reconstruction in radiotherapy-exposed patients, despite increased risk of complication[4].

Rationale and evidence

- Definitive implant reconstruction: Suitable for patients with adequate skin coverage, showing lower reconstruction failure rates despite higher capsular contracture[4,11].
- Tissue expander reconstruction: Indicated for inadequate skin coverage, with lower capsular contracture but higher reconstruction loss rates[11,17].

DISCUSSION

Consensus for definitive implants (80%) aligns with recent studies showing improved outcomes with modern implant technologies[4]. Unlike older NCCN guidelines favoring tissue expanders, the symposium's findings reflect a shift toward definitive implants, reducing surgical stages[14]. The 2023 American Society of Plastic Surgeons (ASPS) guidelines also support definitive implants in select cases, though they caution about capsular contracture risks[21]. This consensus may standardize Brazilian practice, reducing variability and improving patient satisfaction by minimizing additional surgeries. Nevertheless, careful patient selection remains critical.

Practical recommendations

Recommend definitive implants for patients with adequate implant coverage and non-ischemic flaps[4].

CONCLUSION

Definitive implant reconstruction was the preferred approach (80%) for radiotherapy-exposed patients, balancing oncologic safety and reduced surgical interventions[4,11].

Breast reconstruction in inflammatory carcinoma with optimal response

Voting results (panelists)

- No absolute contraindication: 84%
- Contraindicated: 16%

IBC is an aggressive form of breast cancer; however, optimal neoadjuvant response may allow reconstruction[5].

Rationale and evidence

Recent studies support the possibility of reconstruction in IBC patients with optimal response, provided oncologic safety is maintained[13,14].

DISCUSSION

Strong consensus (84%) against absolute contraindication aligns with NCCN guidelines, emphasizing individualized decisions[14]. Older studies advocated against reconstruction due to recurrence risks, but recent meta-analyses support its safety in optimal responders[13]. The 2023 ESMO guidelines similarly endorse reconstruction in select IBC cases, though with stricter criteria than the symposium's findings[20]. This guideline may improve quality of life for Brazilian IBC patients by expanding access to reconstruction, though long-term oncologic outcomes require further study.

Practical recommendations

Consider reconstruction in IBC with optimal neoadjuvant response, ensuring multidisciplinary evaluation and adequate margins[13,14]. Prefer tissue expanders without saline filling initially to maintain surgical conservatism[13].

CONCLUSION

Immediate reconstruction is not absolutely contraindicated in IBC with optimal response (84%), supporting individualized, multidisciplinary approaches[13,14].

CONCLUSIONS

The 2025 International Symposium on Breast Diseases of Inland São Paulo established guidelines reflecting current oncoplastic practices. Consensus was achieved for definitive implants in adjuvant radiotherapy and reconstruction in IBC with optimal response, while multicentric tumors and implant positioning require individualized approaches. These guidelines may standardize oncoplastic surgery in Brazil, improving patient outcomes and aligning with global standards, though areas like multicentric tumor management need further research to resolve divergent findings.

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AUTHORS' CONTRIBUTION

ECP: Conceptualization, Methodology, Project administration, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing. FB: Conceptualization, Investigation, Methodology, Validation, Writing – review & editing. MM: Conceptualization, Methodology, Validation, Writing – review & editing. JTAN: Investigation, Methodology, Validation, Writing – review & editing. GMT: Investigation, Validation, Writing – review & editing. FB: Conceptualization, Methodology, Validation, Writing

– review & editing. BBG: Data curation, Visualization, Writing – original draft, Writing – review & editing. DAB: Conceptualization, Methodology, Validation, Writing – review & editing. EFM: Investigation, Methodology, Validation, Writing – review & editing. NR: Investigation, Validation, Writing – review & editing. RSB: Investigation, Validation, Writing – review & editing. RCP: Conceptualization, Methodology, Validation, Writing – review & editing. ATH: Supervision, Validation, Writing – review & editing.

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