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Does surgery in a specialized clinic improve locoregional recurrence rates in Inflammatory Breast Cancer?

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Background

- Inflammatory Breast Cancer (IBC) is a rare but highly aggressive subtype of breast cancer with a substantial risk of recurrence and poor survival without optimal management.
- Standard of care in the IBC setting involved trimodal therapy – neoadjuvant systemic therapy (NST), modified radical mastectomy (MRM), and adjuvant radiotherapy.
- Surgical quality metrics like margin status, extent of axillary dissection, and adherence to IBC-specific protocols directly impact local control of disease.
- The Specialized Inflammatory Breast Cancer Clinic (SIBCC) operates as a high-volume, multidisciplinary clinic with consistent surgical standards for IBC.
- Surgical management for IBC at a SIBCC routinely consists of MRM that achieves negative margins along with a complete axillary lymph node dissection after NST completion.
- Patients undergoing surgery at outside hospital centers may receive more heterogeneous surgical approaches.
- Understanding how the surgical setting influences outcomes is essential for improving care in IBC.

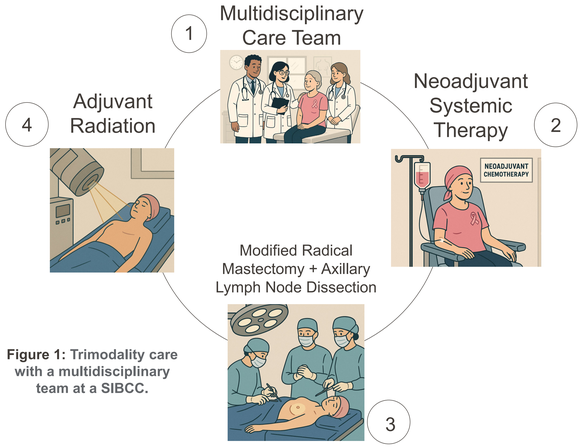


Figure 1: Trimodality care with a multidisciplinary team at a SIBCC.

Study Aim

- We sought to determine how surgical care at SIBCC influences surgical quality and survival outcomes compared to treatment at outside institutions (OSI) in IBC.

Methods

- Study Design: Retrospective analysis of patients with IBC enrolled in a prospective registry at SIBCC from 2003-2025
- Patients were included if they underwent surgery for primary tumor removal either at SIBCC or an outside institution.
- Clinical, treatment, and outcome variables were compared between groups.
- Statistical analyses:
  - Chi-squared test
  - Kaplan-Meier methods

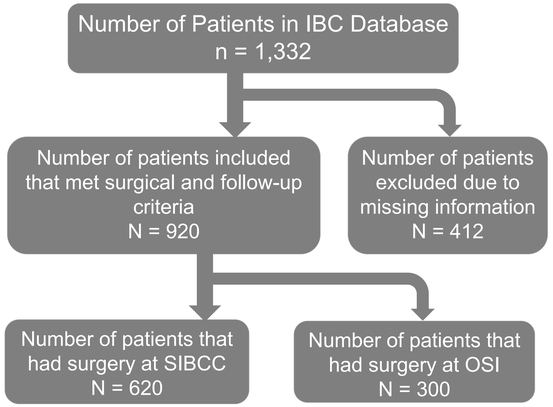


Figure 2 (above): Study Schema

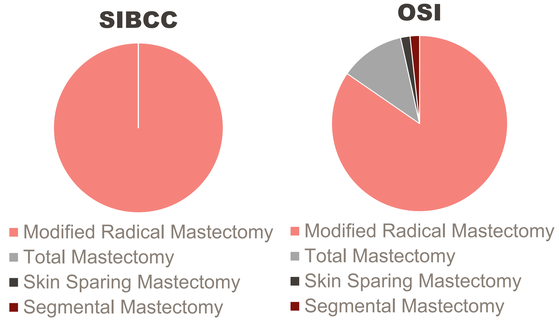


Figure 3 (above): Surgical Procedure Types: SIBCC vs. OSI

Results

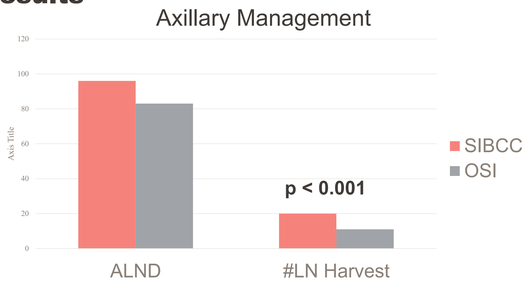


Figure 4 (above): Axillary Management Differences Between SIBCC and OSI. Patients treated at the Specialized Inflammatory Breast Cancer Clinic (SIBCC) were significantly more likely to undergo axillary lymph node dissection (ALND) and had a higher median number of lymph nodes harvested compared to those treated at outside institutions (OSI), indicating more comprehensive axillary staging at SIBCC (p < 0.001).

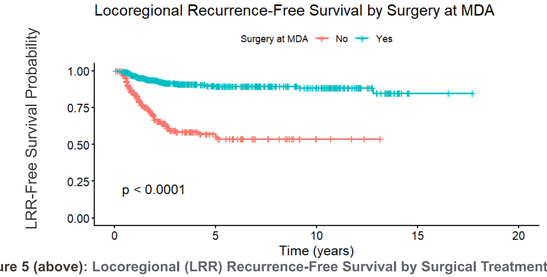


Figure 5 (above): Locoregional (LRR) Recurrence-Free Survival by Surgical Treatment Site. Patients who underwent surgery at SIBCC had significantly longer LRR-free survival compared to those treated at OSI (p < 0.0001). The survival curves separate early and remain distinct over time, demonstrating a substantial and durable benefit associated with receiving surgery at SIBCC.

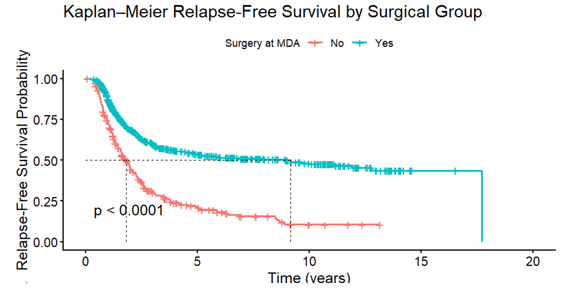


Figure 6 (above): Relapse-Free Survival (RFS) by Surgical Treatment Site. RFS was nearly seven-fold longer in patients treated at SIBCC compared with OSI (9.0 vs. 1.3 years, p < 0.0001)

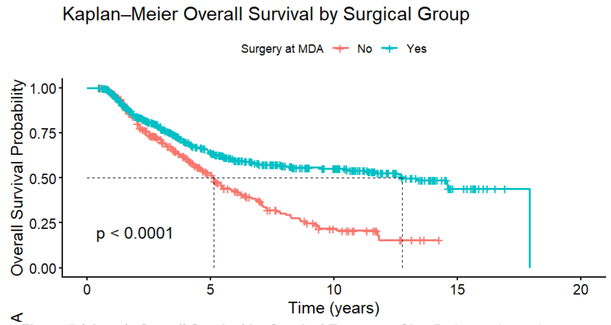


Figure 7 (above): Overall Survival by Surgical Treatment Site. Patients who underwent surgery at SIBCC had significantly longer overall survival compared to those treated at OSI (p < 0.0001). The median overall survival was also substantially longer in patients who had surgery at SIBCC vs. OSI (**12.75 vs. 4.67 years**).

	Nodal Residual Cancer Burden	Positive Surgical Margins
SIBCC	31%	2.5%
OSI	40%	15.5%
Chi-Square	P=0.021	P<0.001

Table 1 (left): Positive Surgical Margins and Nodal Residual Cancer Burden in SIBCC vs OSI: Patients who underwent surgery at the SIBCC had significantly lower rates of nodal residual cancer burden and positive surgical margins compared with those treated at outside institutions. Chi-square analysis demonstrated that both outcomes were statistically improved at SIBCC (p=0.021 and p<0.001, respectively).

Conclusions

- Patients with IBC had significantly better surgical *and* survival outcomes when their surgery was performed at a specialized IBC clinic.
- Specialized center surgery was associated with more consistent surgical management, including higher lymph node harvest and standardized operative approaches.
- These findings highlight the impact of multidisciplinary expertise and protocol-driven care on improving oncologic outcomes in IBC.
- Centralizing IBC surgery at SIBCCs may meaningfully reduce locoregional recurrence risk and improve long-term survival.

Acknowledgements

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References

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