



Optimal locoregional therapy in breast cancer after neoadjuvant therapy

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Objectives of neoadjuvant therapy

- Downsize the tumour
- Invivo drug response
- Pathological response and prognostication
- Tailor adjuvant therapy
- **Surgical objectives**
 - Inoperable to operable
 - Improve breast tumour ratio and increases chances of breast conservation
 - Axillary sterilization- post chemo SLNB

Locoregional therapy

- Surgery and radiation
- Which surgery??
 - Primary
 - Mastectomy
 - Conservative mastectomies: Skin and nipple sparing
 - Breast conservation
 - Axilla
 - Axillary dissection
 - Sentinel lymph node biopsy

Neo-adjuvant therapy improves breast conservation rates

Randomized trial	Breast conservation rates	Local-regional recurrence rates	Survival rates
NSABP B-18 (8)			
(1523 patients)			16 y
Neoadjuvant	68%	13%	55%
Adjuvant	60%	10%	55%
		$P = .21$	$P = .90$
EORTC 10902 (10)			
(698 patients)		10-y estimate	10 y
Neoadjuvant	35%	20%	64%
Adjuvant	22%	20%	66%
		HR = 1.0–1.1	$P = .54$
		$P = .97$	
*EORTC = European Organisation for Research and Treatment of Cancer; HR = hazard ratio; NSABP = National Surgical Adjuvant Breast and Bowel Project.			

Comparison of breast-conserving surgery with mastectomy in locally advanced breast cancer after good response to neoadjuvant chemotherapy

A PRISMA-compliant systematic review and meta-analysis

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Abstract

Background: The application of breast-conserving surgery (BCS) on patients with locally advanced breast cancer (LABC) with good response to neoadjuvant chemotherapy (NACT) still remains controversial. The objective in this study is to analyze the safety of BCS in the management of LABC in patients with good response to NACT.

Methods: We searched the electronic databases of Medline (Pubmed) and Cochrane Library for reports on local recurrence (LR), regional recurrence (RR), distant recurrence (DR), 5-year disease-free survival (DFS) or 5-year overall survival (OS) in patients with LABC receiving BCS or mastectomy (MT) and with good response to NACT. Based on the research results, we conducted a meta-analysis using Review Manager 5.3.

Results: Our study showed that 16 studies with a combined total of 3531 patients, of whom 1465 patients underwent BCS, whereas 2066 patients underwent MT. There was no significant heterogeneity among these studies (Q statistic: $P = .88$; $I^2 = 0\%$).

Patients with good response to NACT showed no significant difference in LR and RR [odd ratio (OR)=0.83; 95% confidence interval (CI): 0.60–1.15; $P = .26$; OR=0.56; 95% CI: 0.33–0.93; $P = .03$], while we figured out a lower DR (OR=0.51; 95% CI: 0.42–0.63; $P < .01$), a higher DFS (OR=2.35; 95% CI: 1.84 to 3.01, $P < .01$) and a higher OS (OR=2.12; 95% CI: 1.51 to 2.98, $P < .01$) in BCS compared with MT.

Conclusion: This meta-analysis concluded that BCS was a safe surgery for patients with LABC and had good response to NACT.

Safety and Feasibility of BCS: Indian data

Breast conservation in locally advanced breast cancer

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Abstract

Absence of breast cancer screening in India, lack of awareness in rural population, social inhibitions and poor socioeconomic status leads to a situation where a large proportion of women in India are still presenting with locally advanced breast cancer (LABC) at the time of initial diagnosis, although, there are relatively more of early stage cases detected in the metros and urban areas than maybe a decade ago. With advances in care and introduction of newer chemotherapeutic agents, it has now become feasible to offer neoadjuvant therapy with effective tumor downsizing, thus making it possible to even consider breast conservation surgery in select patients with locally advanced and unresectable disease at presentation. With reports suggesting apparent safety of the procedure, breast conservation treatment after chemotherapy is now being offered as routine care in most major centers for selective women with LABC. Multimodality therapy is the standard of care with neoadjuvant systemic therapy for all women with LABC.

Keywords Breast conservation · Locally advanced breast cancer · neoadjuvant chemotherapy · Response

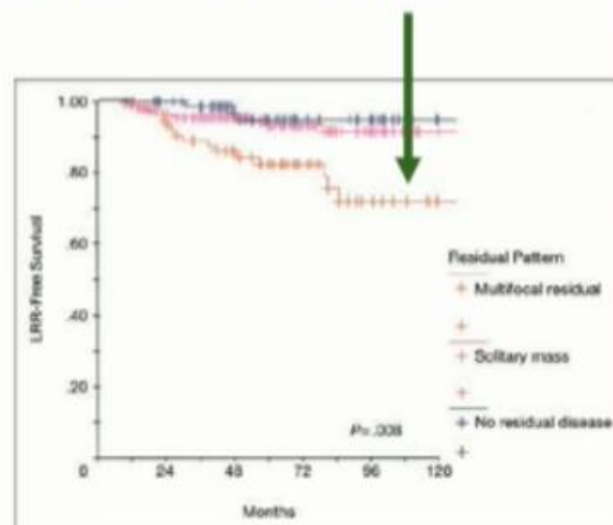
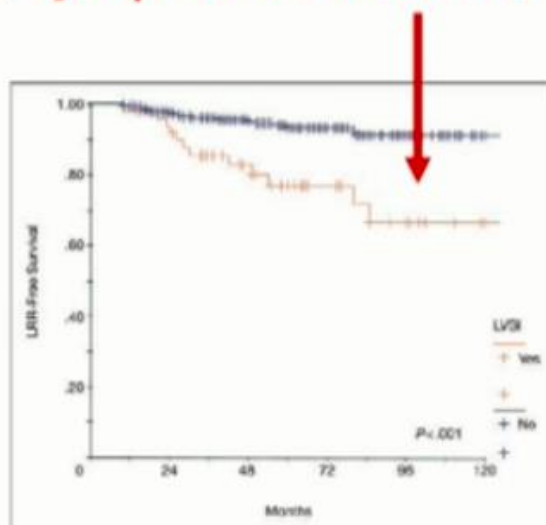
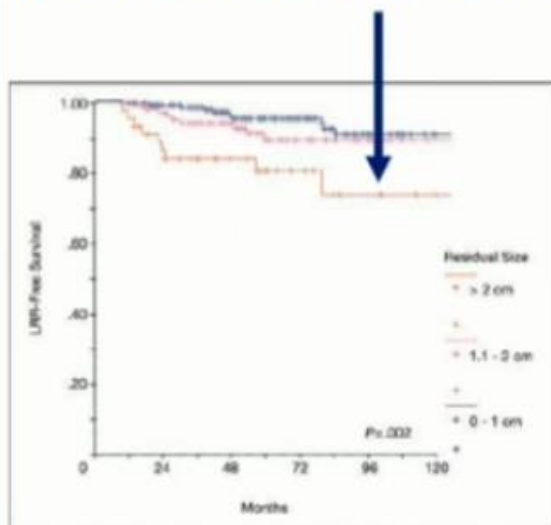
Indian Solutions for Indian Problems—Association of Breast Surgeons of India (ABSI) Practical Consensus Statement, Recommendations, and Guidelines for the Treatment of Breast Cancer in India

S. P. Somashekhar¹ • Gaurav Agarwal² • S. V. S. Deo³ • Chintamani⁴ • P. Raghu Ram⁵ •
Diptendra Sarkar⁶ • Vani Parmar⁷

Expert Group Consensus For the surgical management of LABC, the experts had the opinion that only a subset of LABC can be offered NACT BCS depending on the specifications, and the patients planned for NACT followed by BCS should have core of the tumor marked before initiation or after first cycle of NACT; although the patients could also have periphery of tumor marked before initiation or after first cycle of NACT for specific situations, if applicable. For the patients who have a positive tumor response to NACT, during surgery the extent to tissue to be excised at BCS should be wide of current (post-NACT) margins.

Factors leading to a significant increased local recurrence risk

Residual disease >2cm, lymphatic invasion, multifocal residuals



Patient selection

Breast conservation in locally advanced breast cancer in developing countries: Wise or waste

Mallika Tewari ^a, Arvind Krishnamurthy ^b, Hari S. Shukla ^{a,*}

Surgical Oncology (2009) 18, 3–13

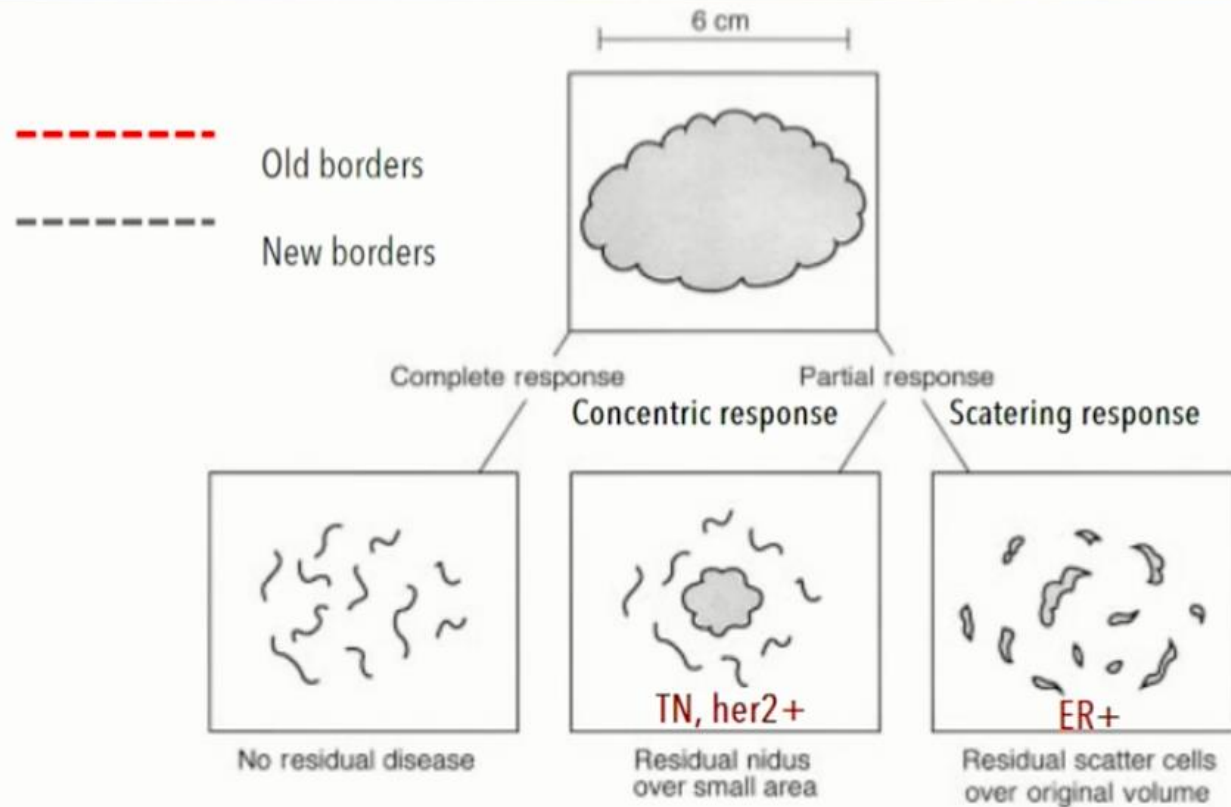
Table 1 Criteria for selecting patients with locally advanced breast cancer for breast conserving therapy after primary chemotherapy [32].

- | | |
|---|--|
| 1 | Solitary primary tumor 4 cm or less in size, or two primary tumors within a sphere of less than 4 cm |
| 2 | Absence of multiple scattered calcifications in the breast |
| 3 | No skin involvement |
| 4 | Tumor: breast size ratio small enough for a good cosmetic result |
| 5 | Clinically node negative, or with small, mobile, low axillary nodes |
| 6 | Absence of extensive involvement within the breast or dermis |
| 7 | No contraindication for radiotherapy (i.e. collagen vascular disease, etc.) |

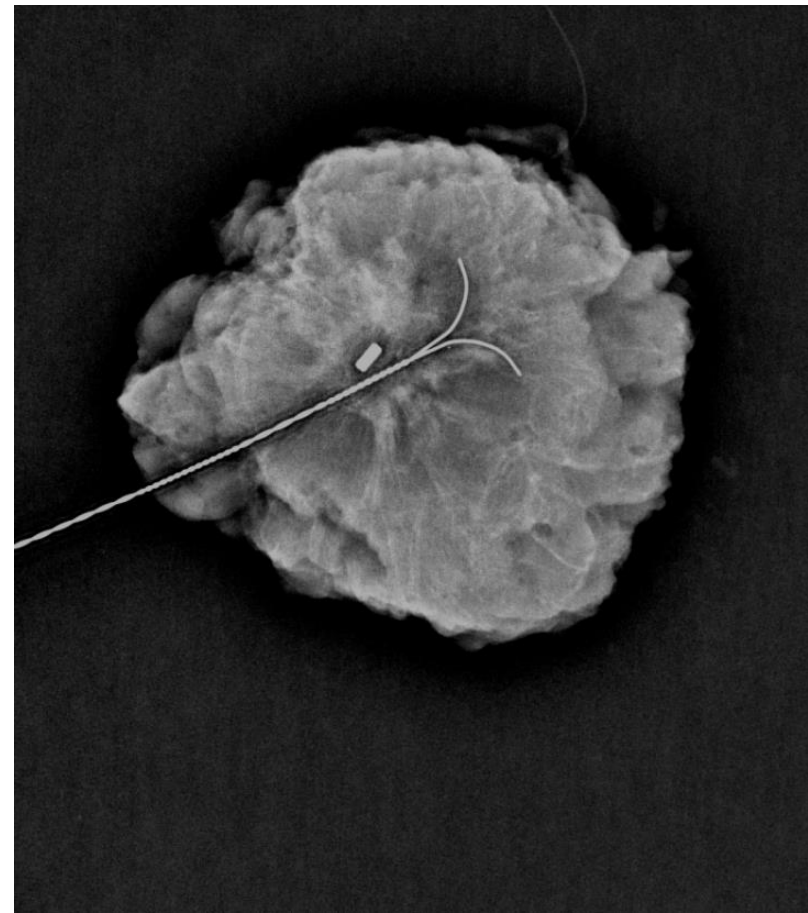
Response Assessment Critical

- Clear documentation of prechemo tumour status
 - Breast imaging : Mammogram +/- USG
 - MRI as a problem solving tool
 - Clip(s) placement
- Interim evaluation every 2 -4 cycles
- Post chemo response assessment
 - Clinical
 - Use of the same breast imaging tool with comparison

Extent of surgical resection – is BCT safe?



Marker placement



Margin Assessment

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Original Article

Role of frozen section in the intra-operative margin assessment during breast conserving surgery

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Abstract


BACKGROUND: Breast conserving surgery (BCS) is increasingly done for early breast cancers in many countries since it has been demonstrated by randomized trials that survival rates after BCS followed by adjuvant therapy are equivalent to those obtained after mastectomy. Frozen section analyses (FSA) is a technique used for intra-operative assessment of margin status in BCS. The aim of this study was to assess the concordance of margin status assessment by FSA and permanent sections and to assess correlation with local recurrence. **MATERIALS AND METHODS:** A total of 162 patients underwent BCS for *in situ* or invasive carcinoma with FSA of margins during the year 2008 at our center. The inclusion criteria in this study were patients with intact tumor at the time of surgery. After application of the inclusion criteria, 60 patients could be included in this study. **RESULTS:** After frozen section, 20 patients had an initial negative margin. 40 subjects underwent additional excisions at the time of initial surgery because of close or positive margins. Of these 40 patients, in 32 patients a negative margin could be achieved with re-excisions. Pathological analyses of frozen section showed concordance to permanent sections in all cases. At a median follow-up of 40 months, there were no local recurrences. **CONCLUSION:** Intra-operative FSA allows resection of suspicious margins at the time of primary conservative surgery and results in low rates of local recurrence and second surgeries. There is good concordance between results of FSA and the final paraffin section in assessing margin status.

Key Words: Breast conserving surgery, frozen section, intra-operative

Oncoplastic Surgical techniques

ORIGINAL SCIENTIFIC REPORT

Surgical Outcomes of Primary Versus Post-Neoadjuvant Chemotherapy Breast Conservation Surgery: A Comparative Study from a Developing Country

Gaurav Agarwal¹  · Chaitra Sonthineni¹ · Sabaretnam Mayilvaganan¹ · Anjali Mishra¹ · Punita Lal² · Vinita Agrawal³

Abstract

Introduction In India and other developing countries, breast conservation surgery (BCS) rates in breast cancer patients are low due to advanced disease at presentation and misconceptions about BCS outcomes. Many patients presenting with large or locally advanced breast cancers (LABC) can be offered post-neoadjuvant chemotherapy (NACT) BCS, safety of which is not as well established as that of primary BCS. This retrospective study compared pathological and surgical outcome parameters in patients undergoing primary and post-NACT BCS.

Methods All non-metastatic breast cancer patients undergoing BCS during 2011–2015 with 1-year follow-up were included. Outcome parameters in form of margin infiltration, ipsilateral breast tumor recurrence (IBTR) rates and IBTR-free survival were compared between primary and post-NACT BCS patients groups.

Results One hundred and twenty-nine patients underwent BCS; 95 underwent primary and 34 post-NACT BCS. Patients in both groups underwent similar multimodality treatment as per institutional protocols. Post-NACT patients more frequently required oncoplastic volume displacement or replacement surgery ($p = 0.002$). Re-excision of infiltrated margins was needed more frequently in primary BCS compared with post-NACT BCS group (14.4 vs. 8.8%; $p = 0.40$). IBTR (Mean follow-up = 30.7 months) was seen in 8.8% post-NACT patients compared with 2.1% primary BCS ($p = 0.114$). IBTR-free survival did not differ significantly between the groups in stage-wise comparison.

Conclusion Post-NACT BCS is safe even in large tumors and LABC, though many require oncoplastic procedures for satisfactory cosmesis. In a developing country where many patients present with large breast cancers or LABC, the benefits of BCS can be offered to a majority with the help of NACT, without compromising the chances of cure.

Axillary Surgery after NACT

- The norm
 - Level I,II+/- Level III axillary dissection
- As use of NACT has increased for 'early' breast cancer
 - Role of sentinel lymph node biopsy after NACT
 - CN0/N1
 - Timing of SLNB
 - Before chemo
 - After chemo
 - Twice

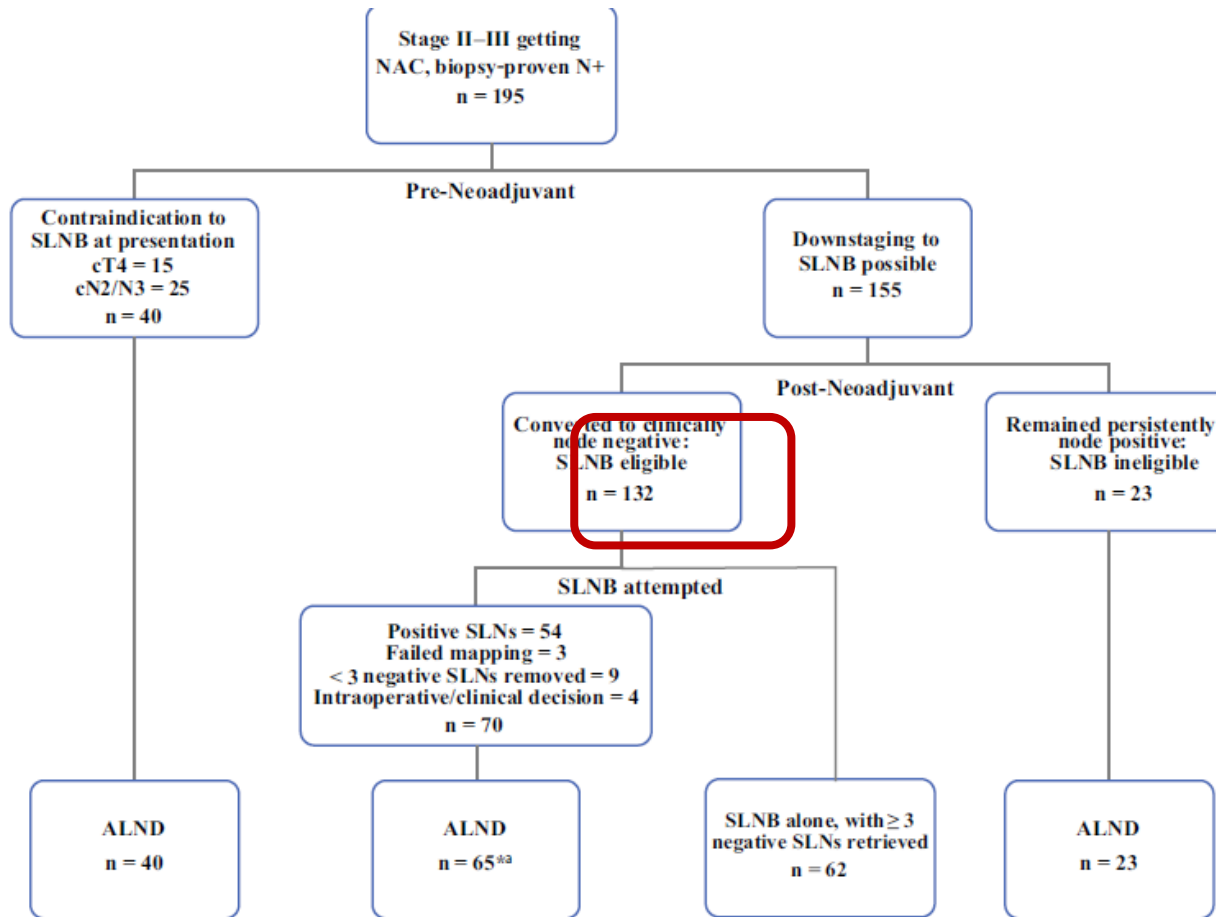
How Often Does Neoadjuvant Chemotherapy Avoid Axillary Dissection in Patients With Histologically Confirmed Nodal Metastases? Results of a Prospective Study

Anita Mamtani, MD¹, Andrea V. Barrio, MD¹, Tari A. King, MD², Kimberly J. Van Zee, MD¹, George Plitas, MD¹, Melissa Pilewskie, MD¹, Mahmoud El-Tamer, MD¹, Mary L. Gemignani, MD¹, Alexandra S. Heerdt, MD¹, Lisa M. Sclafani, MD¹, Virgilio Sacchini, MD¹, Hiram S. Cody III, MD¹, Sujata Patil, PhD³, and Monica Morrow, MD¹

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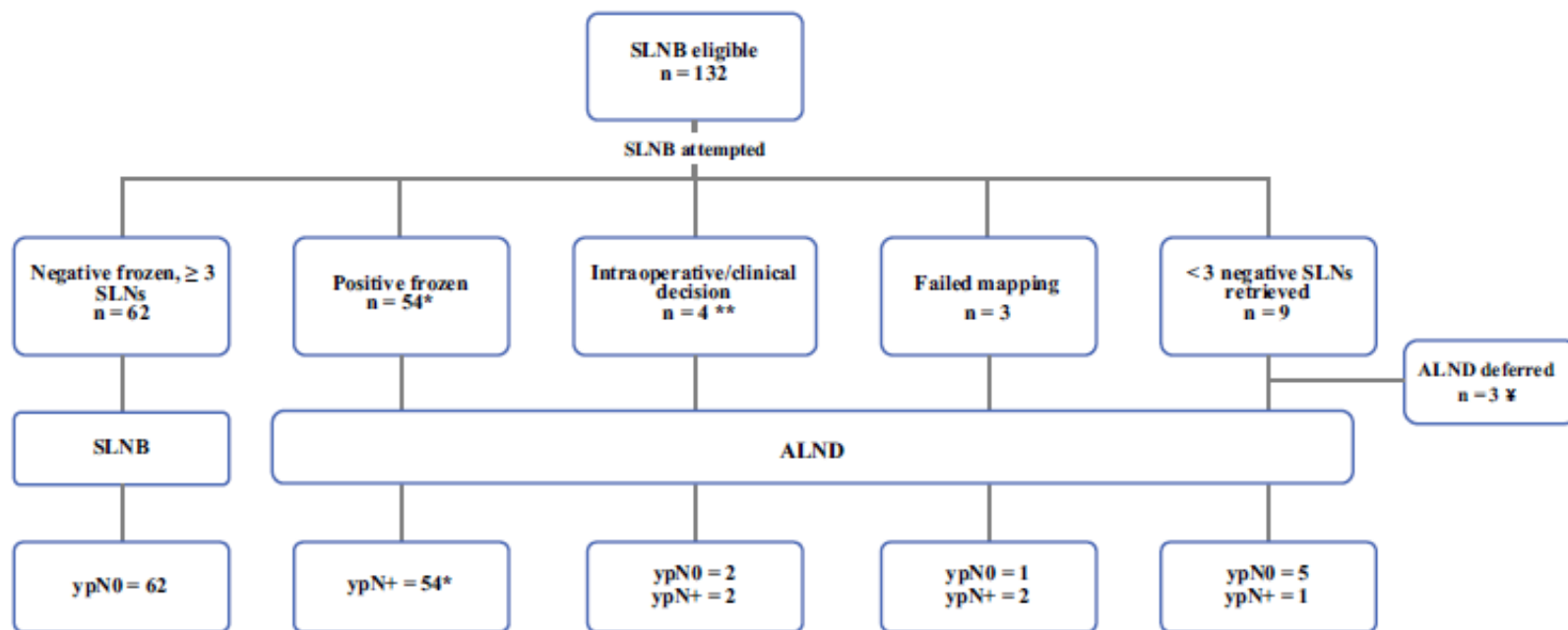
- Among 534 prospectively identified consecutive patients with clinical stages 2 and 3 cancer receiving NAC from November 2013 to November 2015, all biopsy-proven node-positive (N+) cases were identified.
- Patients clinically node-negative after NAC were eligible for SLNB.
- The indications for ALND were failed mapping, fewer than three SLNs retrieved, and positive SLNs.

Flow chart



NAC neoadjuvant chemotherapy, N+ confirmed nodal metastases at presentation, SLNB sentinel lymph node biopsy, SLNs sentinel lymph nodes, ALND axillary lymph node dissection. *Two patients were randomized to radiation therapy in the Alliance A011202 trial. ^aALND was deferred for three patients with fewer than three negative SLNs, two by clinical judgment and one by patient preference

Outcomes for SLNB eligible patients (n = 132)



SLNB sentinel lymph node biopsy, SLNs sentinel lymph nodes, ALND axillary lymph node dissection; ypN0 pathologically node-negative, ypN+ pathologically node-positive. *Two patients were randomized to radiation therapy in the Alliance A011202 trial. **Intraoperative decision (n = 3), patient preference (n = 1). †Two by clinical judgment and one by patient preference

Mamtani A, et al. Ann Surg Oncol. 2016 Oct;23(11):3467-3474

ALND can be avoided for 40 % of patients with nodal metastases and no standard contraindications to sentinel node biopsy at presentation.

Role of Axillary Surgery After Neoadjuvant Chemotherapy

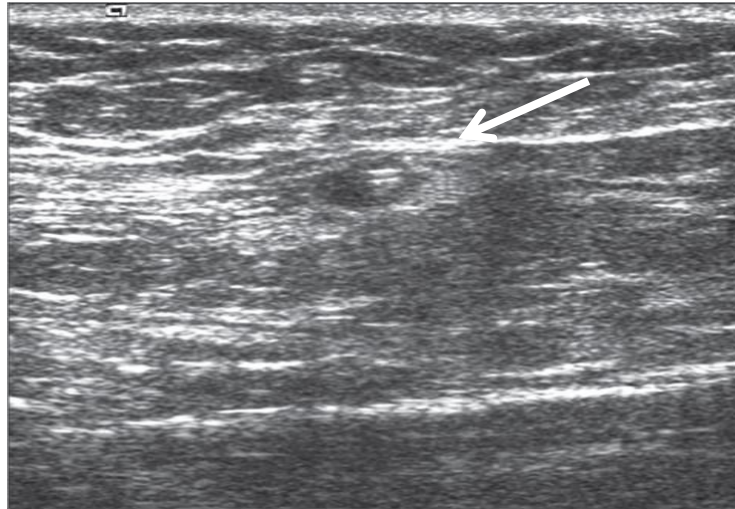
Francisco Pimentel Cavalcante, MD¹; Eduardo C. Millen MD PhD²; Felina P. Zerwas MD PhD³; and Guilherme G. Novita MD⁴

TABLE 1. Comparison of Overall False-Negative Rates and Rates When Three or More SLNs Were Identified in the ASOCOG-Z1071, SENTINA, and SN FNAC Studies

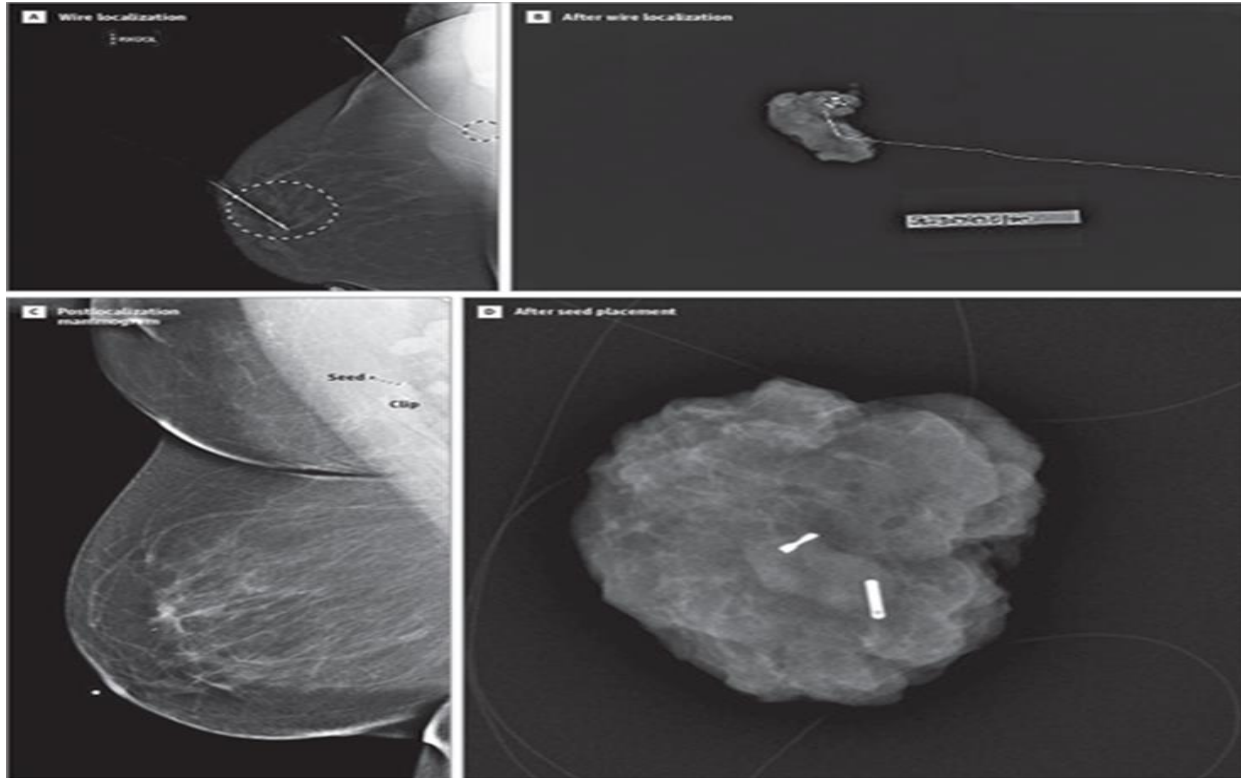
First Author	Study Acronym	Overall False-Negative Rate, %	Three or More SLNs, %
Boughey ¹⁵	ACOSOG-Z1071	12.6	9.1
Kuehn ¹⁶	SENTINA	14.2	7.3
Boileau ¹⁷	SN FNAC	13.3	4.9

- Dual dye
- Atleast 3 nodes
- Clipping of positive node prior to chemo
- Targetted axillary dissection
 - If positive sentinel-complete axillary dissection

Targeted Axillary Dissection



USG Image of the Clip in a Lymph Node After Neoadjuvant Chemotherapy
The clip marker was placed within the sampled lymph node under USG guidance.



Images of Lymph Node Localization A, Wire localization (circles) of the lymph node. B, Intraoperative radiograph confirming removal of the clip-containing lymph node. C, Postlocalization mammogram of the iodine I 125–labeled seed placement. D, Intraoperative radiograph confirming removal of the clip-containing lymph node and seed

Take Home Message

- BCS in LABS is **feasible and safe** with even long-term results available
- Patient's wish, proper imaging and multi disciplinary discussion at the beginning of treatment are key
- **Lesion identification** by clip/marker placement and J wire localisation for excision are paramount
- **Intra-operative FS assessment** of margins is a useful adjunct
- **Oncoplastic techniques** help achieve wide margins with acceptable cosmesis
- **Post chemo SLNB** feasible in carefully selected cases



Thank You