SENTINEL LYMPH NODE BIOPSY FOR PATIENTS WITH EARLY-STAGE BREAST CANCER

Clinical Tools and Resources

Clinical Practice Guideline Update

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Introduction

• The original ASCO evidence-based clinical practice guidelines on use of sentinel node biopsy (SNB) for patients with early-stage breast cancer were published in 2005.

• The purpose of SNB is to identify nodal status, as part of staging, which can help determine adjuvant treatment for patients with early-stage breast cancer.

• New evidence published since 2005.

• Systematic review updated for current version.

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Guideline Development Process

• An Update Committee of the original Expert Panel, led by 2 co-chairs, with multidisciplinary representation in medical, surgical, and radiation oncology; nuclear medicine and diagnostic radiology; and pathology; including from academic and community practice was convened

• The Update Committee also included patient representation and representation in guideline and guideline implementation methodology

• Update Committee members contributed to the development of the guideline, provided critical review, interpretation, and finalized the guideline recommendations based upon consideration of evidence

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Guideline Methodology: Systematic Review

• The Update Committee of the ASCO Expert Panel completed a systematic review and analysis of the medical literature to January 2013
  ✓ Medline
  ✓ Cochrane Collaboration Library

• Update Committee reviewed relevant data and revised recommendations

• Guideline approved by ASCO Clinical Practice Guidelines Committee on behalf of ASCO Board of Directors
Clinical Questions

**Overarching questions:** How should the results of Sentinel Lymph Node Biopsy (SNB) be utilized in clinical practice? What are the potential benefits and harms associated with SNB?

- **Question 1.** Can full axillary lymph node dissection (ALND) be avoided in patients who have tumor-free (negative) findings on SNB?

- **Question 2.** Is full ALND necessary for all patients with positive findings on SNB?
  - **Question 2.1.** for women with positive sentinel lymph nodes (SLN) planning to receive breast conserving surgery with whole breast radiotherapy?
Clinical Questions

• Question 2. Is full ALND necessary for all patients with positive findings on SNB?
  • Question 2.2. for women with nodal metastases who are planning to receive mastectomy?

• Question 3. What is the role of SNB in special circumstances in clinical practice?
Special Circumstances

- Special circumstances include: large and locally advanced invasive tumors, multicentric tumors, inflammatory breast cancer, ductal carcinoma *in situ* [DCIS], inflammatory breast cancer, older age [65 years or more], pregnancy, prior breast or axillary surgery, and preoperative/neoadjuvant systemic therapy.
Clinical Questions - note

• Not included in update: obesity, male breast cancer, evaluation of the internal mammary nodes, or prior nononcologic breast surgery or axillary surgery
Systematic Review Inclusion Criteria

- **Population:** women with early-stage breast cancer
- **For Clinical Questions 1 and 2,** fully published or recent meeting presentations of English-language reports of phase III RCTs or rigorously conducted systematic reviews or meta-analyses.
- **Trials** with a population of women with early breast cancer that compared SNB with the standard treatment of ALND; this included studies comparing SNB alone with SNB plus ALND, for those patients with negative SLNs
- **For special circumstances (Clinical Question 3),** prospective comparative cohort trials were accepted
Systematic Review Results

- Clinical Question 1: 7 randomized clinical trials (RCTs)
- Clinical Question 2: 2 RCTs
- Clinical Question 3: 0 RCTs, 13 cohort studies

Identified studies published between 2004-2013
Recommendations

Recommendation 1: Clinicians should not recommend ALND for women with early-stage breast cancer who do not have nodal metastases.

(Type: Evidence-based; benefits outweigh harms; Evidence quality: High; Strength of Recommendation: Strong)
2.1. Women with positive SLNs planning to receive breast conserving surgery with whole breast radiotherapy

- Recommendation 2.1.: Clinicians should not recommend ALND for women with early-stage breast cancer and who have one or two SLN metastases and will receive breast-conserving surgery (BCS) with conventionally fractionated whole breast radiotherapy.

(Type: Evidence-based; benefits outweigh harms; Evidence quality: High; Strength of Recommendation: Strong)
Recommendations

Recommendation 2.2.: Clinicians may offer ALND for women with early-stage breast cancer with nodal metastases found on SNB AND who will receive mastectomy.

(Type: Evidence-based; benefits outweigh harms; Evidence quality: Low; Strength of Recommendation: Weak)
Recommendations

Recommendation 3: Clinicians may offer SNB for women who have operable breast cancer AND who are in the following circumstances:

- 3.1 Multicentric tumors (*Type*: Evidence-based; benefits outweigh harms; *Evidence quality*: Intermediate; *Strength of Recommendation*: Moderate)
- 3.2 DCIS, when mastectomy is performed. (*Type*: Informal Consensus; benefits outweigh harms; *Evidence quality*: Insufficient; *Strength of Recommendation*: Weak)
- 3.3 Prior breast and/or axillary surgery (*Type*: Evidence-based, benefits outweigh harms; *Evidence quality*: Intermediate; *Strength of Recommendation*: Strong)
- 3.4 Preoperative/neoadjuvant systemic therapy (*Type*: Evidence-based, benefits outweigh harms; *Evidence quality*: Intermediate; *Strength of Recommendation*: Moderate)
Recommendations

Recommendation 4: There are insufficient data to change the 2005 recommendations that clinicians should not perform SNB for women who have early-stage breast cancer AND who are in the following circumstances:

- 4.1 Large or locally advanced invasive breast cancers (tumor size T3/T4) (*Type*: Informal Consensus; *Evidence quality*: Insufficient; *Strength of Recommendation*: Weak)
- 4.2 Inflammatory breast cancer (*Type*: Informal Consensus; *Evidence quality*: Insufficient; *Strength of Recommendation*: Weak)
- 4.3 DCIS, when breast-conserving surgery is planned (*Type*: Informal Consensus; *Evidence quality*: Insufficient; *Strength of Recommendation*: Strong)
- 4.4 Pregnancy (*Type*: Informal Consensus; *Evidence quality*: Insufficient; *Strength of Recommendation*: Weak)
Qualifying Statements

• Clinicians may perform SNB for DCIS diagnosed by minimally invasive breast biopsy when
  a. mastectomy is planned
  b. physical examination or imaging shows a mass lesion highly suggestive of invasive cancer
  c. the area of DCIS by imaging is large (≥ 5 cm).

• SNB may be offered before or after NACT, but the procedure appears less accurate after NACT

• No recommendation for patients with prior nononcologic breast surgery or axillary surgery due to insufficient data
Patient and Clinician Communication

- Discuss potential benefits and harms associated with SNB
- Explain potential outcomes, including false-negative result
- Provide accurate information on:
  - risk of complications
  - contraindications for the procedure
  - need for a multidisciplinary team
  - potential costs
  - current status of long-term survival data
  - risk of radiation exposure
  - follow-up protocols for each procedure

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Health Disparities

• Women of color are less likely to receive SNB than Caucasian women
• Elderly women and those with lower socio-economic are less likely to receive SNB
• Consider these disparities in access to care in the context of this clinical practice guideline
• Strive to deliver the highest level of cancer care to underserved/vulnerable populations
• Note: Literature search conducted separately from systematic review
Limitations of Research

• Limited data to sufficiently inform several areas:

  DCIS, T1/T2 tumors, T3/T4 tumors, inflammatory breast cancer, T4d/inflammatory breast cancer who have received NACT, pregnancy, SLN biopsy in patients with T4abc breast cancer whose cancer has been clinically down-staged after receiving NACT, SLN biopsy in patients who have node metastases at presentation by pre-treatment axillary fine needle aspiration (FNA) biopsy and planning to receive NACT, and the presence of suspicious palpable axillary lymph nodes

• Limited data on whether patients with FNA-positive results can undergo SNB and then avoid ALND after resection of the positive SLN

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Future Directions

• More research needed on:
  – SNB and mastectomy
  – The role of age
  – Communicating the choices to patients is needed
  – The role of radiation therapy
  – Circumstances listed on previous slide
The Bottom Line

• **Interventions**
  – Sentinel Lymph Node Biopsy

• **Target Population**
  – Women with early-stage breast cancer

• **Target Audience**
  – Medical oncologists, radiation oncologists, pathologists, surgeons, oncology nurses, patients/caregivers, guideline implementers

• **Methods**
  – Systematic review and analysis of the medical literature

• **Additional Information**
  – Recommendations and summary of the literature and analysis in guideline
  – Appendix on Pathology Evaluation of Sentinel Nodes

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Additional Resources

• This guideline, as well as an Appendix on Pathology and additional information, including:
  • Data Supplement with additional evidence tables
  • Methodology Supplement
  • Slide sets, clinical tools and resources
  • Available at: www.asco.org/guidelines/breastsnb
• Guideline and Appendix at jco.ascopubs.org
• Patient information available at www.cancer.net
## Update Committee Members

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