
LOCAL TREATMENT OF BREAST CANCER

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OBJECTIVES: *To describe the local control of breast cancer, including initial biopsy, lumpectomy or mastectomy, and sentinel node biopsy or axillary node dissection, and to discuss the role of radiation therapy following lumpectomy or mastectomy in advanced cancer.*

DATA SOURCES: *PubMed, Scopus, Cochran.*

CONCLUSION: *The local treatment of breast cancer is an essential component of primary breast cancer treatment. Residual cancer cells may increase the risk of recurrent ipsilateral disease.*

IMPLICATIONS FOR NURSING PRACTICE: *Nurses and advanced practice nurses who provide care for cancer survivors should possess the skills to patiently teach information, empathetically understand the flagrant or suppressed emotional turmoil, explain the full complement of treatment options, appreciate the rationale behind choices made, and help patients navigate the educational and decisional byways.*

KEY WORDS: *Surgery, breast cancer, mastectomy, lumpectomy, sentinel lymph node biopsy*

Breast cancer is a collection of multiple different cancers that require personalized interventions to maximize outcomes, and decision making for local and systemic treatment of breast cancer is complex. This article reviews the local treatment of breast cancer, including biopsy options, surgical

procedures, and radiation therapy. The treatment of male and female breast cancers is similar; therefore, this manuscript will discuss primarily the female breast.

BREAST ANATOMY

In normal embryonic development, humans develop a pair of complex mammary organs that evolve on the anterior chest and are separated from the chest wall muscles by a thin layer of fascia.¹ In the young adult female, extensive ductal, lymphatic, and vascular networks develop that enable the functional aspect of breastfeeding.¹ Deep within the breast are lobules to create breast milk for lactation that link to a widespread ductal system to transport milk (Fig. 1).² Final development occurs during pregnancy and breastfeeding.¹

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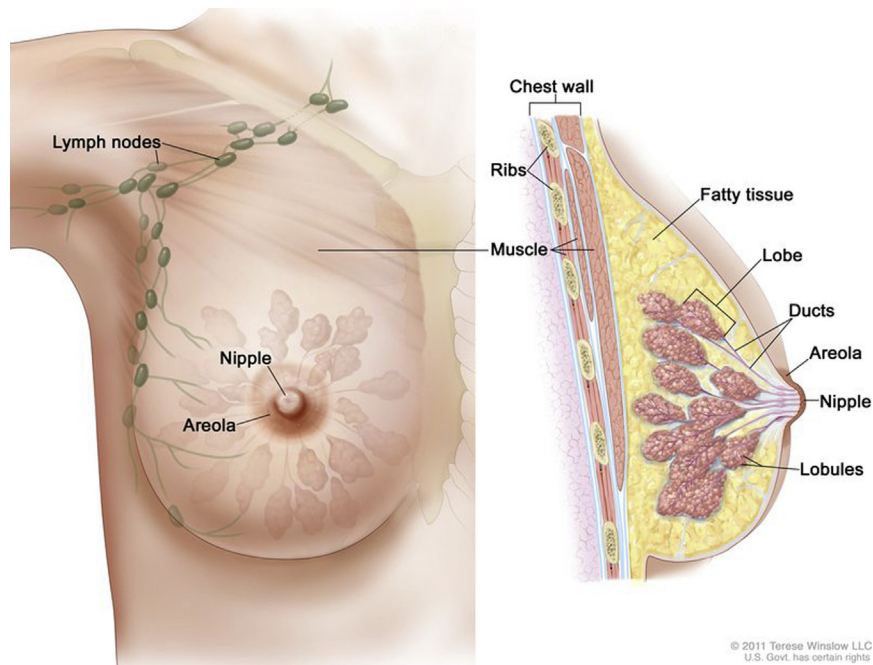


FIGURE 1. Anatomy of the female breast.

The breast is a combination of glandular and connective tissue, subcutaneous fat, and supportive Cooper's ligaments, components that change depending on host exogenous hormonal environment and body weight.¹⁻³ The breast lies atop the pectoralis major muscle and extends vertically from the posterior margin of the clavicle to the inframammary fold on the anterior chest wall.¹⁻³ Horizontally, breast tissue extends bilaterally from the mediolateral edge of the sternum to the mid-axillary line.¹⁻³

The lymphatic system (Fig. 1) is responsible for removal of toxins and byproducts and includes three levels of axillary lymph nodes, inframammary and supraclavicular nodes, and interconnecting lymphatic vessels to drain the breast.^{2,3} An axillary sentinel lymph node biopsy (SLNB) or axillary dissection provides a component of local treatment for a breast malignancy and identifies valuable information to guide systemic treatment.²⁻⁵

BREAST ABNORMALITIES AND BIOPSY OPTIONS

Abnormalities that are benign or malignant can occur within components of the breast tissue and may be palpated on physical or visual exam or on imaging studies. A breast mass warrants biopsy

with the exception of the simple cyst, a fluid-filled mass that may be aspirated (using a 10-cc syringe and 21-G needle) with resolution confirmed by ultrasound or palpation.^{6,7} Cystic fluid, unless bloody or foul smelling, does not warrant further examination because cyst formation indicates normal evolution of fibrocystic breast tissue.^{6,7} Complex cysts may require biopsy or close follow-up to ascertain stability.⁸ See Table 1 for the clinical presentation of breast abnormalities, the types of biopsies, desired outcome, interventions, and related patient education.⁴⁻¹¹

For palpable lesions, biopsy options include fine-needle, core-needle (with or without ultrasound guidance), and incisional or excisional procedures that partially or completely remove the lesion.^{9,10} A fine-needle biopsy provides cytological information and may confirm a suspicious malignancy, although will give little information about pathologic characteristics.¹⁰ Core needle biopsy is the preferred method to investigate breast abnormalities because several small slivers of tissue can be removed from the suspicious lesion. This procedure can be accomplished in the clinical setting with little preparation or with ultrasound guidance.^{9,10} Core needle biopsies provide the necessary pathological components to proceed with surgical planning for local treatment of the breast and to guide the initial planning of

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