

MANAGEMENT OF DUCTAL CARCINOMA IN SITU

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Ductal carcinoma in situ (DCIS) now represents nearly a quarter of all newly diagnosed breast cancers in the United States, largely as the result of increased use of high resolution screening mammography. DCIS is a heterogeneous entity. While most DCIS lesions are detected as isolated areas of microscopic calcifications on mammography, some DCIS patients have a palpable mass, Paget's disease, or a nipple discharge as a presenting complaint. Histologically DCIS ranges from low-grade forms to high-grade tumors with necrosis. While pathologists subdivide DCIS into comedo, cribriform, solid, papillary, and micropapillary types, many tumors have a mixture of the different histologies. The biology of DCIS varies from occult minimal DCIS lesions detected at autopsy to extensive, high-grade cancers with occult regions of invasion that may lead to nodal and distant metastases. Because of the variability of DCIS, patient care needs to be individualized depending primarily on the basis of tumor grade and extent of disease.

Breast conservation therapy is the current standard treatment for most women with DCIS. Modified radical mastectomy was once the treatment of choice for DCIS, but both axillary nodal dissection and total mastectomy are more radical treatments than most DCIS patients require. The incidence of local recurrence of DCIS after mastectomy was 1-2% in the era when most tumors were detected on physical examination. No randomized prospective trial has compared mastectomy with lumpectomy in the treatment of DCIS, but given the excellent outcomes with breast conservation, this study will never be undertaken. The women who should have mastectomy for DCIS are those with extensive malignant calcifications, multicentric disease, inability to achieve clear margins on excision, contraindications to breast radiation therapy, and those that prefer mastectomy. Immediate reconstruction with skin-sparing technique and use of either a prosthesis or tissue transfer technique can be safely pursued in nearly all DCIS patients.

In those women who appear eligible for lumpectomy and who prefer breast conservation, wire localization is commonly needed. Specimen mammography is obtained to assure that all worrisome or indeterminate calcifications are included within the surgical specimen and demonstrate the site of potentially close margins. Because of data showing skip areas of DCIS, especially in lower grade tumors, several millimeters (at least 10 is considered ideal, but not practical in many patients) of normal breast tissue should be removed around the cancer. Postoperative breast radiation therapy significantly reduces the risk of both in situ and invasive in breast disease recurrences, as shown by randomized trials in both the U.S. and Europe. Uncontrolled data in selected DCIS patients show an equivalent control rate for lumpectomy alone with a margin of at least one centimeter. Of the two randomized prospective trials evaluating postoperative tamoxifen therapy, one found significant benefit of reducing all forms of breast cancer recurrence, the other did not recommend adjuvant tamoxifen.

Because axillary nodal metastases do not occur in pure DCIS, routine axillary lymph node evaluation is unwarranted. Some DCIS cancers will harbor unsuspected areas of invasion. These are typically larger, high-grade DCIS lesions that often are clinically apparent. Approximately 5-10% of selected women with DCIS having a sentinel lymph node biopsy will have axillary metastases. The majority of the positive nodes contain only micrometastatic disease. The biological significance of tumor cells detectable only on immunohistochemical staining remains unknown.

The prognosis for women with DCIS is excellent. Overall and disease-free survivals are comparable to women without breast cancer. Because inadequate local treatment increases the frequency of disease recurrence and 25-50% of these events show progression to invasive breast cancer, appropriate individual patient treatment should be pursued. Regular follow-up, including annual mammography and physical examination are imperative to detect recurrences and second primary breast cancers at an early stage.

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