

CLINICAL INVESTIGATION

Breast

REGIONAL NODAL RECURRENCE AFTER BREAST CONSERVATION TREATMENT WITH RADIOTHERAPY FOR WOMEN WITH EARLY-STAGE BREAST CARCINOMA

J. NICHOLAS LUKENS, M.D.,\* NEHA VAPIWALA, M.D.,\* WEI-TING HWANG, PH.D.,<sup>†</sup>  
AND LAWRENCE J. SOLIN, M.D.\*

Departments of \*Radiation Oncology and <sup>†</sup>Biostatistics and Epidemiology, University of Pennsylvania, Philadelphia, PA

**Purpose:** To report the long-term outcomes for women presenting with regional lymph node recurrence after breast conservation treatment with radiotherapy for Stage I and II invasive breast carcinoma.

**Methods and Materials:** Of the women with pathologic Stage I and II invasive breast carcinoma treated with breast conservation treatment at the University of Pennsylvania, 29 developed regional nodal recurrence as their first site of failure. An analysis of the patterns of regional nodal recurrence and their prognosis after recurrence was undertaken. The median follow-up from regional nodal recurrence was 5.4 years.

**Results:** The pattern of regional nodal recurrence was as follows: 14 (48%) with simultaneous local and axillary recurrence, 7 (24%) with recurrence in the axilla only, 5 (17%) with recurrence in the supraclavicular region only, and 3 (10%) with multiple nodal sites of recurrence. For the entire study group, the 5-, 10-, and 15-year overall survival rate was 70%, 37%, and 28%, respectively. The 10-year overall survival rate for patients with locoregional recurrence was 32% compared with 45% for patients with regional-only recurrence ( $p = 0.50$ ). The 10-year overall survival rate for patients with axillary recurrence discovered on pathologic examination of the mastectomy specimen was 31% compared with 42% for patients with palpable regional lymphadenopathy ( $p = 0.83$ ).

**Conclusion:** Patients with regional nodal recurrence after breast conservation treatment with radiotherapy for early-stage breast carcinoma are potentially salvageable. The prognosis after regional nodal recurrence was not significantly different when stratified by the presence or absence of simultaneous in-breast recurrence or the method of detection. © 2009 Elsevier Inc.

Invasive breast carcinoma, Breast conservation treatment, Radiotherapy, Regional nodal recurrence, Salvage treatment.

INTRODUCTION

After treatment of invasive breast carcinoma, regional nodal recurrence is an uncommon pattern of disease relapse that has traditionally been associated with a poor prognosis. Regional nodal recurrence is found in approximately 1–5.4% of early-stage breast cancer patients after mastectomy or breast conservation treatment (BCT) (1–3). The most common site of regional nodal recurrence is the axilla, which is potentially amenable to surgical resection. Recurrence in other regional nodal sites is often associated with simultaneous distant metastases and results in a poorer prognosis. Because of the relative rarity of cases, few long-term data are available on the prognosis of early-stage breast cancer patients presenting with regional nodal recurrence as their first site of failure after BCT, in the absence of apparent distant disease. In the present study, we report the long-term outcome data from this subset of patients and analyze the potential prognostic factors.

Reprint requests to: J. Nicholas Lukens, M.D., Department of Radiation Oncology, Hospital of the University of Pennsylvania, 3400 Spruce St., 2 Donner Bldg., Philadelphia, PA 19104. Tel: (215) 662-7872; Fax: (215) 349-5445; E-mail: [nick.lukens@uphs.upenn.edu](mailto:nick.lukens@uphs.upenn.edu)

METHODS AND MATERIALS

The study population was derived from a database of women with invasive breast carcinoma who had undergone BCT, including radiotherapy, at the Hospital of the University of Pennsylvania between 1977 and 2004. The criteria for inclusion in the present study were (1) pathologically confirmed Stage I (T1N0M0) or Stage II (T2N0M0, T1N1M0, or T2N1M0) invasive breast carcinoma at the initial diagnosis, using the American Joint Committee on Cancer staging manual, 5th edition (4); (2) surgical evaluation of the axilla; (3) treatment consisting of breast-conserving surgery followed by definitive breast radiotherapy; (4) no previous contralateral breast cancers or other nonbreast malignancies; (5) regional nodal recurrence as a component of their initial relapse, with or without simultaneous local recurrence; and (6) no evidence of distant disease discovered during the workup for regional nodal recurrence. Ultimately, 29 patients met the inclusion criteria and were included in the study. A subset of these patients has been reported on in a previous analysis of the prognosis after regional lymph node recurrence. The present study is an update of the previous report (1).

Supported in part by a grant from the Breast Cancer Research Foundation.

Conflict of interest: none.

Received May 27, 2008. Accepted for publication June 26, 2008.

Table 1. Patterns of regional nodal failure

Location	n (%)
Breast and axillary lymph nodes	
Palpable axillary lymph node(s)	3 (10)
Positive axillary lymph nodes on pathology report from mastectomy	11 (38)
Regional nodal recurrence	
Axillary only	7 (24)
Supraclavicular only	5 (17)
Axillary and supraclavicular	1 (3)
Axillary and internal mammary	1 (3)
Supraclavicular and internal mammary	1 (3)

All women underwent BCT, including breast-conserving surgery and definitive breast radiotherapy, as previously described (5–8). The surgical component consisted of complete gross excision of the primary tumor site, and 13 patients (45%) underwent re-excision. All 29 patients underwent axillary lymph node staging before undergoing radiotherapy. Of the 29 patients, 23 (79%) underwent axillary lymph node dissection, encompassing Level I or Levels I and II and 6 (21%) underwent limited axillary sampling earlier in the study period. The median number of lymph nodes obtained was 12 (mean, 13; range, 1–27). The number of nodes obtained was unknown for 1 patient. No patient in the present study underwent sentinel lymph node biopsy (SLNB).

Radiotherapy consisted of whole breast tangent radiotherapy to a median dose of 4,600 cGy (mean, 4619; range, 4,400–5,040). This was followed by a median tumor bed boost of 1,600 cGy (mean, 1668; range, 1,380–2,000) using either electrons (18 patients, 62%) or iridium implants (11 patients, 38%). The median total dose to the tumor bed was 6,400 cGy (mean, 6287; range, 5,900–6,600). Supraclavicular radiotherapy was delivered in 8 patients (28%) to a median dose of 4,600 cGy (mean, 4,550; range, 4,400–4,600). A posterior axillary boost was delivered in 4 (14%) of these 8 patients. Internal mammary fields were delivered in 5 patients (17%) to a median dose of 4,600 cGy (mean, 4,560; range, 4,400–4,600).

Adjuvant systemic chemotherapy was given to 10 patients (34%). Of these, 8 (80%) had node-positive disease at diagnosis. Of the 10 patients, 9 received cyclophosphamide (Cytoxan), methotrexate, and 5-fluorouracil, and 1 Adriamycin and Cytoxan followed by tamoxifen. No other patient received systemic adjuvant hormonal therapy.

The definition of a regional nodal recurrence after BCT was any biopsy-proven carcinoma consistent with the original breast primary found within the ipsilateral axillary, supraclavicular, infraclavicular, and/or internal mammary lymph nodes. The regional nodal recurrence could have been clinically evident or found on pathologic examination of the mastectomy specimen. Local recurrence was defined as biopsy-proven carcinoma at any location in the ipsilateral treated breast at any time after completion of BCT. A distant recurrence was defined as radiographic or pathologic evidence of disease at any site other than the ipsilateral breast, ipsilateral regional lymph nodes, or contralateral breast.

For patients without a known date of death from the medical records, the Social Security Death Index was searched for the date of death (9). The median follow-up after BCT for the 29 patients in the study was 11.1 years (mean, 13.4; range, 1.3–28.6). The median interval from BCT to regional recurrence was 3.1 years (mean, 5.4; range, 0.2–22.5). The median follow-up after regional nodal recurrence for all 29 patients was 5.4 years (mean, 8.0;

range, 0.0–22.8). The median follow-up after recurrence for the 14 patients with locoregional recurrence was 6.5 years (mean, 8.6; range, 0.4–20.2) compared with 4.9 years (mean, 7.3; range, 0.0–22.8) for the 15 patients with isolated regional recurrence ( $p = 0.28$ ).

Descriptive statistics were used to characterize the distribution of the patient prognostic factors. For categorical variables, the frequency and percentage were used. The comparison of patient variables between those with regional recurrence with and without local recurrence was tested using Fisher's exact test for categorical variables. The survival distribution was estimated using the Kaplan-Meier method (10). For the entire cohort at 5, 10, and 15 years, the number of patients at risk was 17, 9, and 7, respectively. Survival was defined as the interval from regional failure to death or last patient contact. Survival was compared between the groups of patients using the log-rank test (11). Follow-up between groups was compared using the nonparametric Wilcoxon rank-sum test or the nonparametric Kruskal-Wallis test, as applicable (12, 13). All  $p$  values are two sided. All tests were performed at the 0.05 significance level. All confidence intervals given are at the 95% level. Statistical analyses were performed using STATA, version 7 (Stata, College Station, TX).

## RESULTS

A total of 29 patients had regional nodal recurrence without simultaneous distant disease as their first site of failure after BCT (Table 1). All 14 patients with simultaneous local and regional recurrence had nodal recurrence in the axilla only. Of these 14 patients, 11 underwent salvage mastectomy for apparently local-only recurrence and were found on pathologic examination of the mastectomy specimen to also have axillary nodal involvement. The remaining 3 women with locoregional recurrence had palpable axillary lymphadenopathy accompanying the diagnosis of local recurrence.

The patient, tumor, and treatment characteristics at BCT for the overall group and according to whether patients subsequently had locoregional vs. regional-only recurrence are listed in Table 2. For all 29 patients, the median age at the initial diagnosis was 47 years (mean, 47; range, 22–80). A trend was found toward patients with regional-only recurrence to be younger at the initial diagnosis than those with locoregional recurrence ( $p = 0.084$ ). The median age at the initial diagnosis for the 14 patients with locoregional recurrence was 48 years (mean, 48; range, 22–64). The median age at the initial diagnosis for the 15 patients with regional-only recurrence was 47 years (mean, 46; range, 27–80). Otherwise, the differences between the two groups were not statistically significant (all  $p \geq 0.43$ ).

The radiotherapy delivered as a part of the initial BCT to patients who subsequently had locoregional recurrence vs. regional-only recurrence was similar. The median total dose to the tumor bed for the 14 women with locoregional recurrence was 6,400 cGy compared with 6,200 cGy for the 15 women with regional-only recurrence ( $p = 0.30$ ). The regional nodal radiotherapy regimens were also similar between the two groups. Supraclavicular radiotherapy was delivered to 4 patients (29%) with locoregional recurrence and to 4 patients (27%) with regional-only recurrence.

Download English Version:

<https://daneshyari.com/en/article/8236331>

Download Persian Version:

<https://daneshyari.com/article/8236331>

[Daneshyari.com](https://daneshyari.com)