Patient and Provider Characteristics That Affect the Use of Axillary Dissection in Older Women with Stage I–II Breast Carcinoma

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BACKGROUND. Axillary dissection for the evaluation and treatment of patients with breast carcinoma often is not performed in older women. The objective of this study was to examine patient, clinical, and surgeon characteristics associated with the use of axillary dissection after breast-conserving surgery (BCS).

METHODS. A cohort of 464 women age ≥ 67 years who were newly diagnosed with Stage I–II breast carcinoma and who underwent BCS were surveyed along with their 158 surgeons, and their medical records were reviewed. Patient, tumor, and provider characteristics were examined for association with the omission of axillary dissection.

RESULTS. The majority of women (63.4%) underwent axillary lymph node dissection after BCS. Increasing age was associated strongly with decreasing odds of undergoing axillary lymph node dissection, even after considering patient health and preferences, clinical factors, and provider factors (odds ratio [OR], 0.11; 95% confidence interval [95%CI], 0.05–0.27). Independent of age and other factors, women in the lowest quartile of physical functioning were 37% less likely to undergo axillary lymph node dissection compared with women in the highest quartile (OR, 0.63; 95%CI, 0.62–0.64). Patients who were cared for by surgeons with subspecialty training in oncology were 60% less likely to undergo axillary lymph node dissection compared with patients who were cared for by other surgeons, even after considering other factors (OR, 0.41; 95%CI, 0.25–0.68).

CONCLUSIONS. The results of this study demonstrated a correlation between lower use of axillary dissection and advancing age, lower functional status, and greater surgeon training. These findings suggest that simple, age-based considerations are important but are not the sole determinants of variations in treatment. Cancer 2002;94:2534–41. © 2002 American Cancer Society.

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KEYWORDS: breast neoplasms, axillary staging, health outcomes, physician characteristics.
Axillary lymph node status is the single greatest prognostic factor in patients with breast carcinoma, and, currently, surgical resection is the only accurate method of determining lymph node involvement. Axillary dissection generally is recommended for all women with invasive breast carcinoma to control disease in the axilla and to provide staging information to guide adjuvant systemic therapy. Despite these guidelines, axillary dissection often is not performed in older women. The omission of axillary dissection may reflect age biases based on misconceptions about the natural history and effectiveness of the treatment of breast carcinoma in older women. Alternatively, the omission of axillary dissection may represent appropriate management, because lymph node dissection has no impact on survival and has little or no impact on the choice of treatment in this age group while causing substantial morbidity, such as limitations of arm function and permanent lymphedema.

Although variations in the use of axillary dissection have been observed, there is little information on factors that affect its use in older women. This study examined patient, tumor, and surgeon characteristics associated with the use of axillary dissection in a cohort of older women with Stage I–II breast carcinoma. We hypothesized that 1) the omission of axillary lymph node dissection would be associated with advanced patient age and poor health; and 2) women who were treated by surgeons with specialty training in surgical oncology, independently, would be less likely to undergo axillary lymph node dissection compared with women who were treated by surgeons without such training.

MATERIALS AND METHODS

This study used data from the Institutional Review Board-approved breast carcinoma Outcomes and Preferences for Treatment in Older Women Nationwide Study project. Details of the study have been described elsewhere. Briefly, older women who were newly diagnosed with breast carcinoma between November 1, 1995 and September 30, 1997 were ascertained at a convenience sample of hospitals (n = 29 hospitals) in Massachusetts, Texas, Washington DC, Western New York State, and New York City. The hospitals included 3 National Cancer Institute-designated comprehensive cancer centers, and 20 of the 29 hospitals (69%) had American College of Surgeons-accredited surgical programs.

Women were considered eligible if they were community dwelling; age ≥ 67 years; and had newly diagnosed, histologically confirmed, primary, T1 or T2, N0 or N1 (clinical or pathologic), M0, invasive breast carcinoma. Because the primary objectives of the study were to examine local treatment choices among women for whom breast conservation or mastectomy would have been considered equivalent, we excluded women with ductal carcinoma in situ or with bilateral, multicentric, or locally advanced disease (T3, N2, or N3). The lower age limit was chosen so that 2 years of Medicare claims prior to diagnosis would be available for all participants to allow for measurement of comorbidity. There was no upper age limit. There were 1377 eligible women at the participating hospitals. Physician consent was obtained to contact 84% of patients (n = 1159 women). Of the 1159 women who were invited to participate, 67.6% consented and completed interviews (n = 784 women). Sixty-six women were found ineligible after interviews were completed (due to incomplete stage or treatment data, advanced stage, or history of prior or second primary breast carcinoma), yielding a sample of 718 women.

For this study, we limited the evaluation of factors associated with axillary dissection to women who underwent breast-conserving surgery (BCS). Axillary dissection with BCS is an active decision compared with mastectomy where removal of at least a few nodes is an integral part of surgery. Axillary dissection with BCS requires an additional incision, usually requires general anesthetic, and causes additional perioperative and postoperative morbidity not associated with BCS without axillary dissection. Axillary dissection with mastectomy does not alter anesthetic choice or morbidity. Among the final study sample of 718 women, 464 women (64.6%) underwent BCS with or without radiation. These 464 women and their surgeons (n = 158 providers) constitute the sample for this analysis.

Data Collection

Data were collected from patient interviews, medical records, and surgeons. Women completed an in-person interview by trained staff between 6 weeks and 24 weeks postsurgery. The structured interview included questions on sociodemographic factors, health status, treatment, and factors considered in making treatment decisions.

Medical records (notes, discharge summaries, and operative and pathology reports) were reviewed using a structured tool and included type of procedures, tumor grade, hormone receptors, staging information, and axillary dissection. Surgeon data were obtained in two manners. First, a 15-minute, self-administered survey was used to ascertain demographic and practice characteristics. The survey was completed by 70% of surgeons who had 401 patients in the study sample. Matching surgeon data were missing for 63 patients.
Definition of Variables

The main dependent variable for this analysis was the receipt of axillary lymph node dissection among women who underwent BCS. BCS was defined as resection of the tumor with one or more operations that did not involve removal of the entire breast and identified from records as excisional biopsy, lumpectomy, partial or segmental mastectomy, tyllectomy, quadrantectomy, and wedge resection. Axillary dissection was defined as removal of any axillary lymph nodes, as reported in the operative and pathology reports. Axillary lymph node dissection may have been performed on the same day or later than the tumor excision. Sentinel lymph node biopsy was not used commonly at participating hospitals in the study period and was not used for any of the patients in this cohort.

Potential predictors of the use of axillary lymph node dissection included patient, clinical, surgeon, and institutional variables. Patient predictors included age, functional status and comorbidity, sociodemographics, and preferences. Age was tested as a continuous variable and by age grouping (ages 67–69 years, 70–74 years, 75–79 years, and ≥80 years). Findings were the same for both approaches, and the data are reported by age groupings for simplicity. Functioning in the 2 months prior to diagnosis was measured using the 10-item Medical Outcome Study Short form 36 (MOS SF-36) physical function scale (Cronbach α, 0.93). This scale yields scores from 0 to 100, with 100 representing the best physical functioning. Comorbidity was measured as a count of the number of illnesses noted in the medical record. Sociodemographic factors were defined as categoric-level variables: white versus nonwhite, less than high school education versus greater than high school education, Health Maintenance Organization enrollment (yes or no), supplemental private insurance (private Medigap) versus other insurance.

Women’s preferences in making treatment decisions were categorized as follows: Yes, this was a concern in making my (surgical) treatment decision; or no, this was not a concern in making my (surgical) treatment decision. For receipt of axillary lymph node dissection, we included the preference for wanting no treatment after (initial) surgery.

Clinical factors included stage, hormone receptors, tumor resection margins, and tumor grade. Disease was categorized according to the American Joint Committee on Cancer/International Union Against Cancer criteria as Stage I (T1N0M0), Stage IIA (T2N0M0; T1N1M0), or Stage IIB (T2N1M0): Most women (68.2%) had their disease staged based on pathology, and the remaining women had their disease staged based on a combination of pathologic and clinical data. Tumor size was categorized as ≤1.0 cm (T1a and T1b), 1.1–2.0 cm (T1c), >2.0 cm (T2), and missing. In the pathology report review, as expected, exact tumor size was missing in a sufficient number of patients (14%) to preclude multivariate analyses by tumor size. Thus, data on tumor size by group are presented, but analyses were done by stage group. Lymph node status was classified by pathologic data for women who underwent axillary dissection. Otherwise, clinical lymph node status was used. Estrogen and progesterone receptors were considered positive, negative, or unknown (not determined; 16%). Patients were classified with positive margins on their last surgery if tumor was present ≤5 mm from the margin of resection based on pathology reports and record notes. Grade was coded as 1, 2, 3, and unknown.

Surgeons’ characteristics included gender, training, year of graduation from medical school, self-reported percent of breast carcinoma practice devoted to older women (age >65 years), and self-reported percent of practice devoted to breast surgery (volume). Gender was ascertained from the survey or, among nonrespondents, by matching name and address to publicly available membership lists or by querying local participating investigators. Specialty training in surgical oncology (yes or no) was ascertained by self-report on the survey. It was assumed that surgeons who did not respond to the survey did not have specialty training. To the extent that nonrespondents actually were trained in surgical oncology, this would bias results to the null (i.e., decrease the ability to detect differences between those classified with and without specialty training). Year of medical school graduation was categorized as 1975 or earlier, after 1975, or unknown. The volume of practice focused on older women was determined by asking what proportion of their patients with breast carcinoma were age ≥65 years (rated from 0 to 100) and was considered as a continuous variable. The overall volume of practice devoted to breast carcinoma also was considered as a continuous variable and was determined by asking what percentage of their practice was devoted to breast surgery (rated from 0 to 100). Patients of surgeons with missing survey data for these latter two items were assigned the group mean for each variable. The last set of variables was comprised of other factors that may have affected treatment, including geographic location, site of care (cancer center; yes or no), and year of surgery (1995, 1996, or 1997).

Statistical Analysis

Bivariate correlations between individual variables and receipt of axillary dissection were examined using...
two-sided t tests and chi-square statistics. A logistic regression model was then constructed entering all variables that were significant in bivariate analyses (P < 0.05), that were important controlling variables, and/or that were relevant to the hypothesis (i.e., a priori specification, not step wise). Thus, age, stage, education, functional status, region, and year of surgery were retained in the model regardless of significance level. Other nonsignificant variables were removed from the final model to derive the most parsimonious model. If two variables were collinear (strongly associated with each other; e.g., systemic therapy and hormone receptors), then only one was retained in the final model. Model fit was assessed by using the C statistic.

RESULTS
In this cohort of older women who underwent BCS, the majority (63.4%) also underwent axillary lymph node dissection. Among the 294 women who underwent axillary lymph node dissection, an average of 14.4 ± 6.5 lymph nodes (± standard deviation) were removed, and 77% of women had 10 or more lymph nodes removed. The majority of women (75%) were lymph node negative, 18% had 1–3 positive lymph nodes, and 7% had ≥ 4 positive lymph nodes.

In bivariate comparisons (Table 1), axillary lymph node dissection was used significantly less frequently with increasing age, in women with lower physical function, in women who preferred no treatment after surgery, and in women with Stage I versus Stage II disease. Women who were hormone receptor negative were less likely to receive tamoxifen and were more likely to undergo axillary dissection compared with women who were hormone receptor positive. The type of hospital, the age of the surgeon, the gender of the surgeon, the proportion of older breast carcinoma patients, and the volume of breast surgery were not related to patterns of the use of axillary lymph node dissection. Geographic location was related to the use of axillary dissection on bivariate analysis. The only hospital and provider characteristic that was associated with the omission of axillary dissection was the surgeon’s training in surgical oncology. Patients who were cared for by surgeons with subspecialty training in oncology were almost 60% less likely to undergo axillary lymph node dissection compared with patients who were cared for by other surgeons (OR, 0.41; 95%CI, 0.25–0.68). Other provider and institutional factors, including geographic location, were not significant.

DISCUSSION
Although most guidelines recommend axillary dissection for all women with invasive breast carcinoma, these guidelines generally are based on evidence from studies that have excluded older women.3,23 Data that exist for older women provide equally compelling arguments for and against the need for axillary dissection when taking into account the benefits and risks of the procedure.

This is one of the first studies to examine patient and provider determinates of axillary surgery in older women. Patient factors that were associated significantly with the omission of axillary dissection after BCS in women age ≥ 67 years included advancing age and lower premorbid physical function. Practice volume did not affect treatment patterns in this older cohort. The only provider characteristic that was associated with the omission of axillary dissection was receiving treatment from a surgeon with subspecialty training in surgical oncology.

The finding of an association of the use of axillary dissection with advancing age and comorbidity has been reported in other settings, including population-based and single-institution studies.5,6,8 However, other studies have found that comorbidity did not fully explain age-related differences in care for patients with breast carcinoma.24 There is concern that the pattern of omission of axillary dissection in older women represents biases based on inaccurate beliefs that older women will not tolerate or benefit from standard treatment.11,18,24,25 The fact that age effects persisted after controlling for comorbidity, physical function, patient preferences, and clinical factors lends some support to this hypothesis.

The primary role of axillary dissection is to provide prognostic data to guide the choice of systemic therapy and to provide local control of disease in the
axilla. Healthy women in their 70s are likely to live many years, may derive substantial benefit from effective systemic therapy, and have been shown to tolerate chemotherapy without untoward additional morbidity compared with younger women.\textsuperscript{26,27} If chemotherapy is to be administered on the basis on

<table>
<thead>
<tr>
<th>Variable</th>
<th>Axillary lymph node dissection (%)</th>
<th>Variable</th>
<th>Axillary lymph node dissection (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>Yes: 294 (63) No: 170 (37)</td>
<td>Positive margins</td>
<td>Yes: 103 (70) No: 45 (30)</td>
</tr>
<tr>
<td>Age (yrs)\textsuperscript{a}</td>
<td>67–69: 56 (84) 70–74: 125 (73)</td>
<td>Treatment\textsuperscript{a}</td>
<td>BCS + RT: 254 (70) BCS alone: 40 (39)</td>
</tr>
<tr>
<td></td>
<td>&gt; 75: 82 (62) &gt; 80: 31 (33)</td>
<td>Hormonal receptor\textsuperscript{a}</td>
<td>Positive: 217 (67) Negative: 44 (83)</td>
</tr>
<tr>
<td>Race</td>
<td>White: 269 (64) Black: 25 (60)</td>
<td>Tumor grade\textsuperscript{b}</td>
<td>0 to 1: 38 (67) &gt; 1 to 2: 74 (70)</td>
</tr>
<tr>
<td>Education</td>
<td>&lt; HS: 124 (65) ≥ HS: 170 (66)</td>
<td>&gt; 2: 36 (88) Unknown: 146 (56)</td>
<td></td>
</tr>
<tr>
<td>HMO member</td>
<td>Yes: 216 (64) No: 78 (63)</td>
<td>Mode of detection</td>
<td>Mammaryography: 153 (65) Other: 141 (62)</td>
</tr>
<tr>
<td>Treated in a cancer center</td>
<td>Yes: 72 (64) No: 222 (63)</td>
<td>Surgeon gender</td>
<td>Male (128–158 male surgeons): 216 (61) Female (30–158 female surgeons): 78 (71)</td>
</tr>
<tr>
<td>Mean number of comorbid illnesses (± SD)</td>
<td>1.54 ± 1.40 1.74 ± 1.70</td>
<td>Surgeon training in surgical oncology\textsuperscript{a}</td>
<td>Yes (37–158 surgeons): 73 (52) No (121–158 surgeons): 221 (68)</td>
</tr>
<tr>
<td>Arthritis</td>
<td>Yes: 106 (65) No: 188 (62)</td>
<td>Mean % of practice devoted to breast carcinoma surgery</td>
<td>84.6 ± 52.0 82.6 ± 55.5</td>
</tr>
<tr>
<td>Physical functioning 2 months prior to diagnosis (mean ± SD)\textsuperscript{b}</td>
<td>77.66 ± 25.3 66.68 ± 30.82</td>
<td>Mean % of elderly in practice</td>
<td>41.6 ± 11.7 40.3 ± 10.59</td>
</tr>
<tr>
<td>Patient preference (wanting no treatment after surgery)</td>
<td>Yes: 254 (70) No: 40 (39)</td>
<td>Region\textsuperscript{a}</td>
<td>Washington DC: 48 (67) MA: 83 (58)</td>
</tr>
<tr>
<td>Receiving tamoxifen\textsuperscript{a}</td>
<td>Yes: 162 (58) No: 132 (72)</td>
<td>NC: 19 (70) NY: 52 (50) TX: 92 (79)</td>
<td></td>
</tr>
<tr>
<td>Receiving chemotherapy\textsuperscript{b}</td>
<td>Yes: 40 (85) No: 254 (61)</td>
<td>Yr of surgery</td>
<td>1995: 20 (74) 1996: 153 (65) 1997: 118 (59)</td>
</tr>
<tr>
<td>Stage\textsuperscript{b}</td>
<td>1: 240 (61) II: 48 (77) IIB: 6 (75)</td>
<td>1.0: 90 (61) 1.1–2.0: 121 (65) &gt; 2.0: 51 (65) Missing: 32 (49)</td>
<td></td>
</tr>
<tr>
<td>Tumor size (cm)</td>
<td>≤ 1.0: 90 (61) 1.1–2.0: 121 (65)</td>
<td>58 (39) 66 (35) 13 (20) 33 (51)</td>
<td></td>
</tr>
</tbody>
</table>

\textsuperscript{a} Significant at P < 0.01.

\textsuperscript{b} Significant at P ≤ 0.05.

HS: high school; HMO: health maintenance organization; SD: standard deviation; BCS: breast-conserving surgery; RT: radiotherapy.
lymph node involvement, then axillary dissection in otherwise healthy older women is appropriate.

However, the majority of older women with breast carcinoma die from causes other than breast carcinoma.9,26,28,29 Because older women generally have been excluded from adjuvant therapy clinical trials, the true value of chemotherapy in older women largely is unknown.25,30,31 The relative reduction in recurrence and death with chemotherapy is lower in postmenopausal women compared with younger women, whereas the benefit from tamoxifen alone is equivalent in both groups.30,31 If an older woman with a hormone receptor positive tumor will be treated with tamoxifen alone regardless of lymph node status, then axillary dissection is not necessary for adjuvant therapy planning.

In terms of the need for axillary dissection to control the disease itself, the evidence is relatively clear that axillary dissection itself does not improve survival, although the data on recurrence in the axilla are conflicting. In some series, 20% of women with clinically negative lymph nodes who were treated without dissection had recurrences. Other recent series reported that the rate of axillary recurrence with no dissection was generally < 10% and that recurrences usually were treatable.27,32–37 The choice of axillary surgery also must take into consideration its morbidity. Long-term follow-up of women who underwent axillary dissection shows that as many as one-third had long-term morbidity, including troubling paresthesias, limited range of motion, and lymphedema.12–17 Lymphedema occurs in as many as 15–20% of women, is permanent, and can be disabling. For older women, such disability may interfere with the ability to complete daily tasks, such as self-care, shopping, or cleaning, that are necessary for independent living.

The finding of this study that women who were treated by more highly trained surgeons with specific oncology training were less likely to undergo axillary dissection suggests that misinformation about the natural history of the disease and treatment options are not an adequate explanation for the omission of axillary dissection. This finding is similar to data from the Province of Quebec, where older women who were treated by surgeons affiliated with larger hospitals that participated actively in clinical trial research were less likely to undergo axillary lymph node dissection compared with women who were treated at smaller hospitals.10 Those authors hypothesized that the hospitals and surgeons were trend setters, ahead of guidelines that required all women to have axillary dissection.

This trend toward less aggressive treatment of older women also was evidenced by the omission of radiation therapy after BCS in 20% of women. The omission of axillary dissection also was associated with the omission of radiation therapy after BCS and with the use of tamoxifen. This strategy of excision with tamoxifen without radiation therapy or axillary dissection in women age 70 years appeared to be effective in a large, single-institution trial with very low rates of local-regional failure.28 This strategy also was the subject of a randomized cooperative group trial examining the role of radiation therapy in older women with small tumors, the preliminary results of which suggest that excision and tamoxifen alone without radiation therapy and axillary dissection is effective treatment.37

Although our results were robust, there are several caveats that should be considered in evaluating these findings, including missing data on surgeons, reliance on surgeon self-report of training and volume, and power. The patients and surgeons in this study were drawn from a convenience sample of hospitals in four

### TABLE 2

<table>
<thead>
<tr>
<th>Variable</th>
<th>Odds ratio</th>
<th>95%CI</th>
<th>Odds ratio</th>
<th>95%CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (yrs)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>65-69</td>
<td>1.00</td>
<td>—</td>
<td></td>
<td></td>
</tr>
<tr>
<td>70-74</td>
<td>0.55</td>
<td>0.24-1.25</td>
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<tr>
<td>75-79</td>
<td>0.31</td>
<td>0.14-0.72</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80 +</td>
<td>0.11</td>
<td>0.05-0.27</td>
<td></td>
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</tr>
<tr>
<td>Radiation therapy after BCS</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Yes</td>
<td>1.00</td>
<td>—</td>
<td></td>
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<tr>
<td>No</td>
<td>0.35</td>
<td>0.19-0.66</td>
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<td>Stage</td>
<td></td>
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<tr>
<td>I</td>
<td>1.00</td>
<td>—</td>
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<tr>
<td>IIA</td>
<td>2.17</td>
<td>1.01-4.69</td>
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<td></td>
</tr>
<tr>
<td>IIB</td>
<td>2.45</td>
<td>0.40-15.04</td>
<td></td>
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</tr>
<tr>
<td>Physical function in the 2 months prior to diagnosis</td>
<td>Beta, 0.0103b</td>
<td></td>
<td></td>
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<tr>
<td>Hormone receptor status</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive</td>
<td>1.00</td>
<td>—</td>
<td></td>
<td></td>
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<tr>
<td>Negative</td>
<td>3.17</td>
<td>1.29-7.79</td>
<td></td>
<td></td>
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<tr>
<td>Unknown</td>
<td>0.26</td>
<td>0.14-0.47</td>
<td></td>
<td></td>
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<tr>
<td>Surgeon with surgical oncology training</td>
<td></td>
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<tr>
<td>No</td>
<td>1.00</td>
<td>—</td>
<td></td>
<td></td>
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<tr>
<td>Yes</td>
<td>0.41</td>
<td>0.25-0.68</td>
<td></td>
<td></td>
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<tr>
<td>Surgeon gender</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Female</td>
<td>1.00</td>
<td>—</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>0.66</td>
<td>0.37-1.20</td>
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<tr>
<td>Wanting no treatment after surgery</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>No</td>
<td>1.00</td>
<td>—</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>0.49</td>
<td>0.24-0.99</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C statistic</td>
<td>0.84</td>
<td>—</td>
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</tbody>
</table>

95% CI: 95% confidence interval; BCS: breast-conserving surgery.

a The logistic regression analysis controlled for patient education, insurance, year of surgery, and region.

b This value represents the per point increase (P = 0.023).
geographic regions of the United States and may not be reflective of general breast surgery practice. Furthermore, it is possible that those hospitals and surgeons who were willing and interested in participating were less likely to perform axillary dissection. However, the results persisted after controlling for surgeon and institution characteristics and geographic region. In addition, nonsurgeons coordinated the study at the vast majority of centers, and patients from all surgeons at those institutions were included. Overall, it is unlikely that selection bias had a major impact on the results.

Missing data on surgeon training is another limitation. However, the effect of any missing data on surgeon training should have been to bias results to the null based on our assumption that missing data represented an absence of specialty training (i.e., no impact of surgeon training on the use of axillary dissection). The surgeons who did not complete the survey were similar in gender, region, year of medical school graduation, and patient characteristics to the surgeons who completed the survey. Although surgeons often over-estimate certain aspects of their practice, such as volume and recommended treatments, this should not have affected the internal validity of our results, and any social desirability biases should have biased results to the null. The use of self-reported volume in surgical oncology was used instead of a self-definition of a doctor as a breast surgeon, because the latter does not exist in terms of accredited training programs or recognition as a specialty. However, many surgeons reported that breast surgery was a large portion of their practice. Finally, although this was a large sample of older women, the relatively low proportion of female surgeons limited the ability to detect surgeon gender effects.

A final factor to consider in generalizing our findings is that, since the time of this study, sentinel lymph node biopsy has entered routine practice. This allows determination of axillary lymph node status with less short-term and long-term morbidity compared with complete axillary lymph node dissection. The reduced procedure morbidity likely will affect the future rates of axillary surgery and the decision-making process in older women with breast carcinoma.

Overall, these conflicting perspectives, the uncertain benefits of chemotherapy in older women, and the lack of clinical trial data leave women and their surgeons with difficult choices. Axillary dissection is reasonable, but its omission also may represent appropriate tailoring of care to a woman’s individual circumstances and preferences. Until there are more definitive clinical trial data, physicians must help women balance the risks and potential benefits of axillary dissection in making treatment decisions and also should actively encourage older women to participate in clinical trials.

REFERENCES


