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COMPARATIVE PROGNOSTIC SIGNIFICANCE OF SENTINEL LYMPH NODE BIOPSY AND AXILLARY LYMPHADENECTOMY IN CARCINOMA OF THE BREAST

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Purpose:

It has been hypothesized that the enhanced pathologic assessment and immunohistochemical staging performed for nodes identified by lymphatic mapping/sentinel lymph node biopsy will identify patients with small metastases, resulting in stage migration and improved outcomes for pN0(i-) patients as compared to those who are pN0 by axillary lymphadenectomy. This study compares the prognostic accuracies of axillary lymphadenectomy (ALND) and SLNB in patients with carcinoma of the breast, operated on by a single breast surgeon during the period 1991-2004.

Methods:

An Institutional Review Board-approved retrospective analysis of a prospectively maintained database of breast cancer patients identified all node negative women operated upon from 1991-2004. This population included 135 women who underwent ALND from 1991-1996 and 238 patients assessed by SLNB from 1997-2004. The demographics of these cohorts were compared using Chi-Square analyses (MS Excel). Disease free status was calculated for both groups and compared.

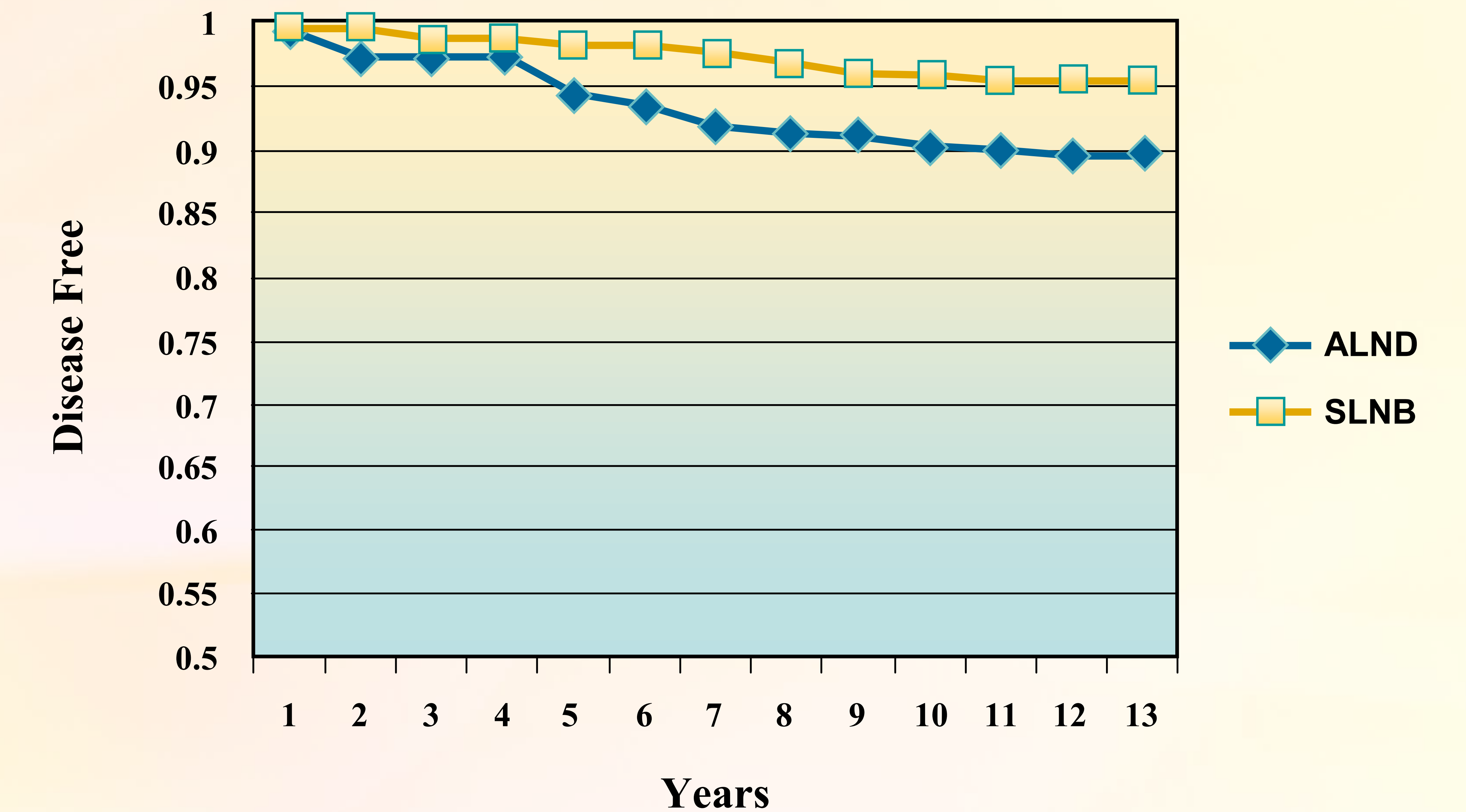
Results:

The ALND and SLNB cohorts were statistically similar (Table 1). Although there were no statistically significant differences in the demographics, women from the ALND cohort had a slight preponderance of T2 cancers. The SLNB patients were more likely to have breast preservation (87% versus 64%, $p < 0.01$) and consequently were also more often treated with adjuvant radiation therapy (85% versus 61%, $p = 0.03$). Adjuvant chemotherapy (21% v. 16%) and endocrine therapy (49% v. 48%) were employed equally in these two cohorts. In our study, 89.6% of the ALND cohort was disease free at a median follow-up of 130 months while 95.8% of the

Table 1. Patient Demographics

| | Axillary Lymph Node Dissection | Sentinel Lymph Node Biopsy | p value |
|---------------|--------------------------------|----------------------------|---------|
| N | 135 | 239 | |
| Age | 61.3 | 60.5 | NS |
| % ER Positive | 108/130 (83%) | 187/225 (83%) | 0.16 |
| Stage | | | |
| 0 | 2 (1%) | 13 (5%) | 0.07 |
| 1 | 108 (80%) | 204 (85%) | 0.57 |
| 2 | 25 (19%) | 22 (9%) | 0.03 |
| Grade | | | |
| Well | 37 (27%) | 102 (43%) | 0.05 |
| Moderate | 53 (39%) | 71 (30%) | 0.02 |
| Poor | 31 (23%) | 54 (23%) | 0.41 |
| N/D | 14 (10%) | 12 (5%) | |
| Tx | | | |
| BCS | 86 (64%) | 208 (87%) | <0.01 |
| MAST | 49 (36%) | 31 (13%) | <0.01 |
| CT | 28/135 (21%) | 39/239 (16%) | 0.33 |
| HT | 66/134 (49%) | 114/239 (48%) | 0.64 |
| RT | 82/135 (61%) | 202/239 (85%) | 0.03 |

Figure 1. Disease Free Survival by Nodal Procedure



Conclusions:

This data set demonstrates equivalent prognostic ability for sentinel node biopsy and axillary lymphadenectomy as assessed by disease-free survival at a median follow-up of almost six years. These two cohorts were statistically similar in age, stage of disease, grade of disease, and use of adjuvant systemic therapy. Significant differences exist in the frequency of breast conserving surgery and radiation therapy, perhaps reflecting more frequent and sensitive screening mammography in the cohort operating upon from 1997-2004.

SLNB cohort was disease free at a median follow-up of 71 month. At a comparable median follow-up of 71 months, 92.2% of the ALND cohort was free of disease ($p=0.73$).