Aim/Background: ACOSG Z0011 suggested that axillary lymph node dissection (ALND) could be omitted in patients with breast cancer and 1-2 positive sentinel lymph nodes (SLN) treated with breast conservation and systemic therapy. If ALND is omitted, the total number of positive axillary lymph nodes may be unknown and it is difficult to determine the need for chemotherapy in luminal A like type and postoperative radiation targeting the supraclavicular fossa/axillary apex. Predictive factors for non-SLN metastases may be important. The aim of this study is to determine the rate of non-SLN involvement at the time of ALND, and predictive factors for involvement following detection of macrometastases to SLN.

Methods: Between March 2004 and October 2014, we carried out a retrospective study of 146 patients with metastases in SLN, who underwent an additional level I or II ALND and breast conservation. 134 patients were women with clinical T1-T2 invasive breast cancer, no palpable adenopathy, and 1-2 positive SLNs identified by frozen section and hematoxylin-eosin staining on permanent section. (micrometastasis: n=12, macrometastasis: n=122). Patients were ineligible if they received neoadjuvant hormonal or chemo-therapy. There were no non-SLN metastases in patients with micrometastases only to SLN. We evaluated the characteristics of the patients, tumors, and SLN comparing the non-SLN negative and non-SLN positive groups in patients with macrometastases to SLN.

Results: The mean number of lymph nodes examined, including SLN, was 16 (range, 5 to 39). 36 patients had metastatic involvement of non-SLN (29.5%; 36/122), with only one involved LN in 56% of the patients (20/36), two LNs in 25% (9/36), three LNs in 5.6% (2/36), and more than three LNs in 13.9%. More than 3 ALN metastases were 6.5% (8/122). There is no significant difference in tumor diameter on ultrasonography, number of SLN metastases, nuclear grade, ER, PgR, HER2, Ki67, or tumor subtype between the non-SLN negative and non-SLN positive groups.

Conclusions: It is suggested that ALND can be omitted in patients with micrometastases to SLN. Predictive factors for non-SLN involvement in patients with macrometastases to SLN have not been identified.

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