Aim: The role of sentinel lymph node biopsy (SLNB) in patients with ipsilateral breast tumor recurrence (IBTR) still remains to be elucidated. The aim of this study is to evaluate technical feasibility and validity of performing SLNB in patients with IBTR.

Methods: A prospective database of 1176 patients who had breast-conserving surgery (BCS) from January 2005 to December 2013 at Keio University Hospital was analyzed and 35 patients with IBTR underwent SLNB. Sentinel lymph nodes (SLNs) were detected using a combined method of blue dye and radioisotope.

Results: The median disease-free interval of 35 patients with IBTR was 66.7 month and the median tumor size of IBTR was 1.2cm. A total of 22 patients had previous SLNB, 8 patients had previous axillary lymph node dissection (ALND), and 5 patients had no previous axillary treatment. The average number of lymph nodes harvested at the time of primary surgery with SLNB and ALND was 2.9 and 20.8, respectively. Among 35 patients with IBTR, repeat BCS (n = 10), nipple sparing mastectomy (n = 10) and total mastectomy (n = 15) were performed as the second surgery. Overall, SLNs were successfully identified in 28 (80.0%) of 35 patients. The identification rate in patients with previous SLNB, ALND and no axillary treatment was 81.8% (18/22), 75% (6/8) and 80% (4/5), respectively. The aberrant lymphatic drainage included the contralateral axillary nodes with 3 patients and the internal mammary nodes with 2 patients. The aberrant drainage was found more frequently in patients with previous ALND comparing with SLNB and no axillary treatment (37.5% vs. 4.5% vs. 0%, p = 0.048). Among 28 patients with successful SLNB, SLN metastases were found in 2 patients. In one patient with previous SLNB, ALND found the positive non-SLN (1/21). The other patients with previous ALND had micrometastasis at the contralateral SLN and did no further axillary treatment. No axillary recurrence was observed after the median follow-up time of 37.3 months from the second surgery for IBTR.

Conclusions: SLNB is a technically feasible and valid procedure for staging and treatment of regional lymph nodes in patients with IBTR.

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