Sentinel node biopsy in early breast cancer: lessons learned from more than 1000 cases at a single institution

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ABSTRACT

Aims. The aims of this paper are to report the development of sentinel node biopsy (SNB) in breast cancer at a single institution and to discuss the relevant issues on SNB still to be elucidated.

Patients and methods. From 1998 to 2010, 1021 SNBs with frozen section examination were carried out in patients with breast cancer. In the early period (1998-2002) SNB was always combined with axillary lymph node dissection (ALND). From 2002 onwards, only patients with a positive SNB result underwent ALND (late period). The characteristics of patients with infiltrating carcinoma (IC) and ductal carcinoma in situ (DCIS) and the histological status of the sentinel nodes were examined. The survival outcomes of node-negative patients were compared between patients submitted to SNB and ALND (ALND group) during the early period and patients who underwent only SNB during the late period (SNB group).

Results. The sentinel node was identified intraoperatively in 98.3% of cases. During the early period the overall accuracy of SNB was 97.0%. During the late period, 700 patients with IC and 140 with DCIS underwent SNB. In the IC group, 149 patients (21.3%) had sentinel node macrometastases and 36 (5.1%) micrometastases; of that subgroup, 21 underwent ALND and no other metastatic lymph nodes were found, and 15 underwent SNB only. Axillary recurrences were observed in 4 patients (0.77%) with negative SNB; none of these were among the patients with micrometastatic SNB. Two patients (1.4%) with DCIS had a positive SNB. In node-negative patients the 5-year overall survival was 96.7% in the ALND group and 96.5% in the SNB group (P = 0.63). The 5-year disease-free survival was 93.8% and 93.2% in the ALND and SNB groups, respectively (P = 0.77).

Conclusions. Overall and disease-free survival in patients with a negative SNB result and no further axillary surgery were equal to those in patients with negative ALND. Intraoperative assessment of the sentinel node in expert hands has a low false-negative rate and allows immediate ALND in patients with sentinel node metastases, avoiding the need for a second operation. ALND for sentinel node micrometastases may be safely omitted in most patients with early stage breast cancer.

Key words: sentinel node, early breast cancer, axillary lymph node dissection, survival.

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