

Sentinel lymph node biopsy in breast cancer: review on various methodological approaches

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ABSTRACT

Aims and background. Sentinel lymph node biopsy has been accepted as a standard procedure for early stage breast cancer. In this retrospective analysis, the results obtained with different methodological approaches using radiocolloid with or without blue dye were examined.

Methods. A total of 158 sentinel lymph node biopsies were performed in 152 patients. Group A (85 patients) underwent lymphatic mapping using a combination of periareolar intradermal radiocolloid and subareolar blue dye injections. Group B (73 patients) underwent only periareolar intradermal radiocolloid injection. One large tin colloid and two small radiocolloids (nanocolloid of serum albumin -NC- and colloidal rhenium sulphide -CS-) were used.

Results. Successful lymphatic mapping was attained in 157 of 158 procedures (99.4%). Radiocolloids localized sentinel lymph nodes in 99.4% and blue dye in 75.3% of the cases. The number of sentinel lymph nodes removed was greater in nanocolloid and colloidal rhenium sulphide groups ($P \leq 0.05$). Among 60 metastatic sentinel lymph nodes, frozen section analysis using hematoxylin and eosin staining failed to detect 1 macro- and 10 micrometastasis. Radiocolloid uptake was higher in sentinel lymph nodes accumulating blue dye (1643 ± 3216 counts/10 sec *vs* 526 ± 1284 counts/10 sec, $P < 0.001$). Higher count rates were obtained by using larger sized colloids (median and interquartile range: tin colloid, 2050 and 4548; nanocolloid, 835 and 1799; colloidal rhenium sulphide, 996 and 2079; $P = 0.01$). Only 2 extra-axillary sentinel lymph nodes were visualized using periareolar intradermal injection modality.

Conclusions. Radiocolloids were more successful than blue dye in sentinel lymph node detection. More sentinel lymph nodes were harvested with small colloids, but different sized radiocolloids were similarly successful. Sentinel lymph nodes having higher radiocolloid uptake tended to accumulate blue dye more frequently. Sentinel lymph nodes manifested higher count rates when a larger colloid was used. Frozen section was very successful in detecting macrometastatic disease in sentinel lymph nodes, but the technique failed in most of the micrometastases.

Key words: breast cancer, isosulfan blue, radiocolloid, sentinel lymph node biopsy.

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Received May 5, 2012;
accepted December 4, 2012