

Sentinel lymph node biopsy has become an important tool for axillary lymph node staging in women with early-stage breast cancer. The sentinel node (SN), "guardian node," is the first node that drains the tumor. It is assumed that this node is the first location to which the tumor spreads by lymphatics. In certain cases, more of these nodes may be present. In breast cancer, the sentinel node is usually found in the axilla, although in a small percentage of cases it can be present wherever in the lymphatic system of the breast.

The procedure is associated with much less morbidity than axillary dissection, and it has become the axillary staging procedure of choice for many surgeons. It appears that blue dye or radiocolloid, or both, may be used to identify the sentinel node effectively. A variety of injection techniques have been verified successfully, and many factors previously thought to affect the accuracy of the procedure have been shown to be of limited significance. The indications for the procedure are expanding, and the histopathological evaluation of the sentinel node have been clarified. The positive result of immunohistochemical evaluation of the sentinel node have prognostic significance and should alter the therapy.

The aim of the model phase was to test if the location of the tumor and its sentinel node forms a reproducible correlation and to determine the most probable nodes for the development of metastases of cancer in relation to the location of the tumor in individual quadrants of the breast.

In the clinical phase, the method of detection and sampling of the sentinel node were tested, and it was determined whether its status was sufficiently definite and is always in agreement with the pathological finding in the lymph nodes of the 1st and 2nd level, and to thus determine whether it is appropriate for predicting the status of the axillary nodes especially in combination with resection of the breast for cancer. In the case of sentinel node positivity, a search for a correlation with the histological type of tumor, its characteristics (grading, estrogen and progesterone receptors, receptors HER-2/neu, cytokeratine), and stage of the disease will be done.

This study confirms some facts that were published before:

1. along with the diameter and grading of primary breast tumor is increasing the number of positive sentinel nodes and diameter of metastase.
2. tumors in elderly patients have lower grading.
3. along with the diameter of metastase in sentinel node is increasing the number of positive axillary nodes.
4. hormone receptor negative tumors have higher grading and rate of HER-2/neu positivity.

This study did not prove relation between characteristics of primary tumor and sentinel node metastases. There was no success in predicting sentinel lymph node status.

Sentinel node identification rates and accuracy improved with surgeon experience.

Surgeons should perform at least 20 cases with routine axillary dissection. After 53 cases is possible to achieve a success rate 95% and false negative rate of less than 5% with „backup" axillary dissection. In this study was achieved similar rates (success in 96,2% and false negative rate 1,6 %).

In spite of difficulties with initiation of this method was the sentinel lymph node biopsy included in surgery of breast cancer. Incorporation of this method into routine clinical practice will maintain accurate axillary staging with lower morbidity and improved quality of life for women with early breast cancer.