APPLICATION OF SIGNAL BIOPSY TECHNIQUE LYMPH NODES IN EARLY BREAST CANCER GLANDS

Xudoyorov M.S
Jabborov J.Sh
Yakubova D.T

Annotation
Data on 47 patients with stage Tis-2cN0M0 breast cancer who underwent surgical treatment with sentinel lymph node biopsy were included. All patients underwent preoperative ultrasound of the regional lymph nodes, followed by the introduction of a radiopharmaceutical (RP) and lymphoscintigraphy of the regional zones of the lymphatic outflow. A retrospective evaluation of the results of visualization of sentinel lymph nodes was performed according to the data of the clinical (ultrasound, lymphoscintigraphy) and intraoperative (GammaFinder) diagnostic methods used. The accuracy of the ultrasonic research method was 76.5%, of the radionuclide - 87.2%. The frequency of false-negative results of an urgent histological conclusion did not exceed 3%. The percentage of finding the sentinel lymph node intraoperatively was 70.2%. With the introduction of radiopharmaceuticals on the eve of surgery and
with radiopharmaceutical activity above 180 MBq, the probability of intraoperative detection of the sentinel lymph node is higher. In 51% of patients, lymphorrhea ceased on the 57th day after the operation.

Key words: breast cancer, sentinel lymph nodes, ultrasound, scintigraphy.

Relevance. Sentinel lymph node biopsy (SLNB) has been the standard for diagnosis and treatment of early breast cancer (BC) in Western countries for about 20 years. The technique for performing this technique was first described in 1994 [1]. In the Russian Federation (RF), the first mention of the advisability of performing a biopsy was
published in 2010 [2]. Currently, in the Russian Federation, the SLNL technique is one of the basic methods for diagnosing lesions of regional lymph nodes in breast cancer and is recommended by experts from the International Anti-Cancer Union as a standard
method [3]. Until now, the issue of the lack of clear recommendations on the optimal size of radiocolloids used to determine the sentinel lymph nodes remains relevant, which may play a role in the formulation of the technique itself [4]. To date, the most popular for conducting SLN are colloidal
radiopharmaceuticals (RPMs) labeled with Technetium-99m [5].
The purpose of the study is to present our own results of the beginning of the application of the SLNL technique in breast cancer.
Material and methods. For the period from August 1, 2020 to December 31, 2021, sentinel lymph node biopsy was performed in 47 patients with primary breast cancer cTis-2cN0M0 (0–IIa stages) in the oncology department of breast tumors of the RSNPMCORiR. All patients underwent preoperative ultrasound of regional
lymph nodes, then the colloidal radiopharmaceutical Technefit-99 was administered peritumorally or praareolarly (for non-palpable tumors) followed by lymphoscintigraphy of the regional zones of the lymphatic outflow. The introduced activity of the radiopharmaceutical ranged from 105 MBq to 220 MBq, the study was performed on an E.CAM Siemens apparatus. During
operation, the search for lymph nodes was carried out by the GammaFinder apparatus. Identified sentinel lymph nodes were sent for urgent histological examination. In the presence of metastases in them, a full-fledged lymphadenectomy (LAE) was performed, with
In the absence of metastases, the volume of lymphadenectomy was limited; if the sentinel lymph node was not found, a full-fledged lymphadenectomy was also performed intraoperatively.
Results. The average age of the patients was 55 years. The distribution by stages of the disease before surgical treatment was as follows: stage I of the disease was established in 37 patients, stage II in 8, stage 0

(Tis) in 2 patients with suspected invasion (according to trephine biopsy). After surgical treatment, an increase in the stage of the disease
occurred in 15 cases: in 10 patients due to damage to the lymph nodes, in 1 case an invasive component of the tumor was detected, in 3 cases due to an increase in the size of the primary tumor according to histological examination, in 1 patient an increase in the stage of the disease also occurred due to metastatic damage to the lymph nodes, and due to more
tumor size according to histological findings. The decrease in the stage of the disease from II to I occurred in 4 patients, due to the smaller size of the tumor, detected histologically. Thus, in 36 out of 47 patients, clinically intact lymph nodes (N0) were confirmed after surgical treatment. The introduction of radiopharmaceuticals and subsequent lim-
foscintigraphy in 29 cases was carried out the day before surgery, in 18 cases directly on the day of surgery. With the introduction of the radiopharmaceutical on the day of surgery, intraoperative detection of SLN was 66.6% (the sentinel lymph node was identified in 12 out of 18).
managed to map the sentinel lymph node). According to lymphoscintigraphy, sentinel lymph nodes were detected in 37 cases out of 47. Intraoperatively using a gamma probe
sentinel lymph nodes were found in 33 patients, which in 32 cases corresponded to the data of lymphoscintigraphy. In 14 cases, the lymph nodes accumulating radiopharmaceuticals during the operation were not found, which corresponded to the data of liposcintigraphy in 9 cases. With the introduced radiopharmaceutical activity from 180 MBq and above, in 8 cases out of 34, a signal
the lymph node was not found intraoperatively, which was 23.5%. With radiopharmaceutical activity of 170 MBq and below, the incidence of undetected lymph nodes was 46.1% (6 cases of 13). The discrepancy between intraoperative data and lymphoscintigraphy occurred in 6 cases.
teas (12.7%). Thus, in 29.7 % of cases (14 patients) a standard lymphadenectomy was performed, taking into account the undetected sentinel lymph node during the operation. 9
In patients (19.1%), an urgent histological examination revealed metastases in the sentinel lymph nodes, which were confirmed after a planned conduction; a full-fledged LA E was also performed in this category of patients. Precision removal
only sentinel lymph nodes (in the absence of a metastatic lesion in them according to an urgent histological examination) was performed in 15 cases, which amounted to 31.9%. In 9 (19.1%) cases, in the absence of lesions in the sentinel lymph nodes, according to the urgent histological conclusion, an additional 5 to 7
lymph nodes, which macroscopically seemed to be changed in size and / or density. In this group of patients, a larger volume of LA E was performed than required by the LSLU technique, which we consider justified at the stage of mastering the technique. In 1 case, metastatic lesions of 2 lymph nodes were detected only during a planned histological examination.
Following, in this patient during the operation, 9 lymph nodes were removed, thus, the volume of the operation was considered radical, reoperation was not performed. The frequency of false-negative results of an urgent histological conclusion was 2.4%.
In the postoperative period, 24 patients (with a limited volume of LA E) had a cessation of lymphorrhea on days 5–7 after surgical treatment. There were no postoperative complications during biopsy of sentinel lymph nodes.

Conclusions. The biopsy of the sentinel lymph node is a reliable method for diagnosing regional lymph node involvement in early breast cancer, which has a number of advantages over standard level I–III lymphadenectomy. The accuracy of the ultrasonic research method was 76.5%, the accuracy of the radionuclide method was 87.2%. Frequency
false-negative results of an urgent histological conclusion did not exceed 3%. Intraoperative detection rate of the sentinel lymph node was 70.2%. The percentage of finding the sentinel lymph node intraoperatively is higher with the introduction of the radiopharmaceutical the day before
operations and with radiopharmaceutical activity from 180 M Bq. In 51% of patients, lymphorrhea ceased on days 5–7 after surgery.

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