

SHORT COMMUNICATIONS AND CASE REPORTS

Metastases to the internal mammary lymph nodes as the only spread of ductal breast cancer: case description

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Summary

The present paper describes a case of a breast cancer patient in whom lymphoscintigraphy identified metastases in the internal mammary nodes whilst the axillary lymphatic center was tumor-negative. Because of the lymph node involvement, cancer was restaged from original I to IIIc. Con-

sequently, the patient was qualified for chemotherapy with docetaxel and doxorubicin. The case described is another contribution for the routine application of sentinel lymph node biopsy (SLNB) in breast cancer patients.

Key words: breast cancer, internal mammary lymph nodes, sentinel lymph node biopsy

Introduction

The introduction of SLNB into routine clinical practice resulted in the decreased number of lymphadenectomies performed in breast cancer patients in whom the axillary lymph nodes were impalpable [1,2]. There is some anatomical and clinical evidence, however, that the axillary lymphatic centre is not the only basin in breast malignancies [3-8].

The present paper describes a case of a breast cancer patient in whom lymphoscintigraphy identified metastases in the internal mammary nodes whilst the axillary lymphatic center was tumor-negative.

Case presentation

A 36-year-old female, in whom thin-needle biopsy revealed the presence of cancer cells in the lower medial quadrant of the left breast, was admitted to the 1st Department of Surgical Oncology, Regional Cancer Comprehensive Center in Wroclaw on November 28th, 2006. The case was initially classified as stage I (T1N0M0) breast cancer and the patient was qualified

for surgical treatment. Since the axillary lymph nodes were impalpable it was decided to proceed to operation with SLNB and quadrantectomy.

Lymphoscintigraphy and isosulfan blue dye were used to identify the sentinel lymph node intraoperatively. Lymphoscintigraphic mapping with ^{99m}Tc-labeled sulfur colloid (Tc-SC) was performed 24 h before SLNB (i.e. on November 29th, 2006) in the Laboratory of Nuclear Medicine by the Clinic of Endocrinology and Diabetology, Wroclaw Medical University. The neo2000[®] Gamma Detection System Model 2100 (Neoprobe Corporation, USA) was used for the intraoperative visualization of radiolabeled tissues. Additionally, patent blue V dye (Guerbet GmbH, Germany) was injected at the site of the primary tumor 10 min before surgery.

Both techniques revealed that the tumor was drained by the two internal mammary lymph nodes, and there was no lymph flow into the axillary lymphatic center (Figure 1).

The patient underwent left quadrantectomy together with biopsy of the internal mammary sentinel lymph nodes on November 30th, 2006. Histopathological evaluation of the removed breast tissue revealed

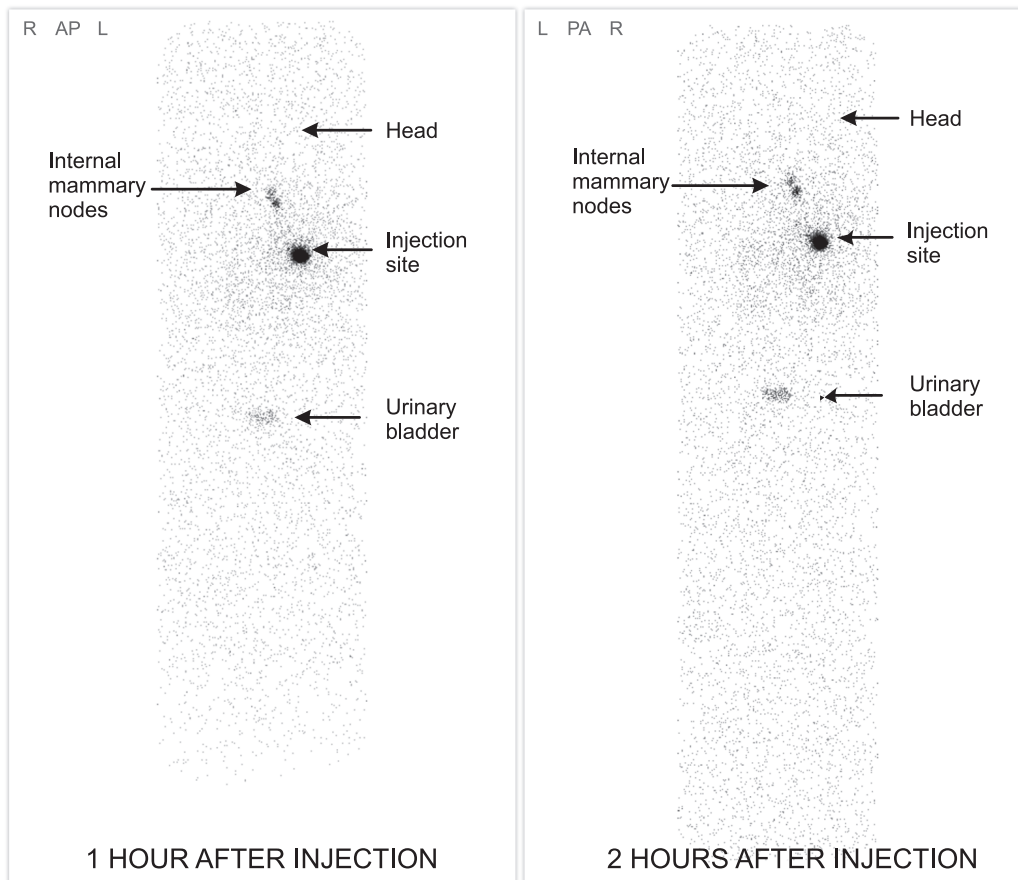


Figure 1. Lymphoscintigraphic image of the case described.

a tumor 1.5 cm in diameter. It was identified as an infiltrating ductal carcinoma. Moreover, metastases were found in both of the dissected internal mammary lymph nodes.

Because of the lymph node involvement, the disease was restaged from I to IIIc (pT1pN3bM0). Consequently, the patient was qualified for adjuvant chemotherapy with docetaxel (75 mg/m^2) and doxorubicin (50 mg/m^2).

Discussion

Hereby we have described a case where lymphoscintigraphy was a clue for the proper staging and treatment of breast cancer. Only the identification of the sentinel lymph node in the internal mammary chain enabled the recognition of secondary malignant spread.

A hundred years ago Halsted was the first to identify that the internal mammary nodes might constitute a second lymphatic basin in breast cancer. Further observations accumulated during extended radical mastec-

tomies, being a standard oncological procedure in the second half of 20th century, revealed that the internal mammary chain might be a target for the lymphatic spread of breast cancer [9,10]. This evidence, however, was not fully utilized until SLNB was implemented into clinical practice [1,2]. Lymphoscintigraphy of the tumor basin, being an integral part of the SLNB procedure, demonstrated that in some cases lymph might be transported into the internal mammary nodes [3-8].

The case described in the present study, together with the literature data, is another argument for the routine performance of SLNB in breast cancer patients. The avoidance of unnecessary axillary lymphadenectomies, which are related to numerous complications, was usually emphasized among the advantages of SLNB [1,2]. In some cases, however, when the breast tumor is drained by the internal mammary lymph nodes that are invaded by malignant cells, SLNB not only prevents axillary lymphadenectomy but also averts understaging. Consequently, there is a possibility of proper treatment with a subsequent improvement of prognosis [6,11].

Until now, SLNB was suggested in cases of breast cancer with impalpable axillary lymph nodes [1,2]. This procedure, however, seems also advisable in cases of evidently involved axillary nodes, since there is evidence that some tumors might be drained simultaneously by two lymphatic centers [12]. Consequently, axillary lymphadenectomy alone is no guarantee for a successful outcome.

The optimal technique for sentinel lymph node identification is crucial for the effectiveness of SLNB. Usually the procedure consists of two stages – preoperative lymphoscintigraphy together with an intraoperative tracing with blue dye [13]. It is suggested, however, that the experienced surgeon will achieve similar sensitivity of SLNB using blue dye tracing only [14-16]. Such an attitude, however, seems undesirable in cases of breast cancer patients. Lymphoscintigraphy makes it possible to demonstrate the eventual internal mammary drainage of the tumor preoperatively, and consequently facilitates the planning of further surgical procedures. It should be remembered, however, that the radiocolloid injection site will strongly affect the result of SLNB. Many authors revealed internal mammary node drainage by means of a peritumoral injection whilst it was undetectable after the intradermal administration of radiocolloid [17-22].

It should be emphasized that the SLNB technique is relatively simple and safe for the patient. The low cost of a single examination constitutes the final argument for the routine application of SLNB in breast cancer patients.

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