

# Is sentinel node mapping possible in surgically removed ectopic axillary breast cancer? A case report

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## Abstract

We reported a 24-year-old female patient with the history of ectopic axillary breast cancer which was removed surgically. Sentinel node mapping was performed for lymphatic axillary staging of this patient with two injections of the <sup>99m</sup>Tc-phytate in both ends of the surgical scar. Lymphoscintigraphy showed an axillary sentinel node which was harvested during surgery and was not pathologically involved. Our case showed that sentinel node mapping is possible for ectopic axillary breast cancer patients even after excisional biopsy of the index lesion.

**KEY words:** lymphoscintigraphy, accessory breast, sentinel, breast cancer

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## Background

Ectopic breast tissue can occur anywhere from axilla to groin in the embryonic mammary line with the incidence of 0.6 to 6% [1]. Malignancy can occur in these ectopic breast tissues which behaves the same as the orthotopic breast cancers. However, the prognosis of carcinoma arising from ectopic breast, due to early lymph node metastasis or delayed diagnosis, is worse than that of normal breast cancer [2]. Ectopic breast neoplasm, once detected, should be treated similar to the typical breast neoplasms [3, 4]. In case of malignant transformation in an ectopic breast tissue, the treatment should be directed towards standard breast cancer therapy. We reported a case of axillary ectopic breast cancer with the history of previous excisional biopsy of the lesion that was treated successfully with sentinel node mapping.

## Case report

A 24-year-old female patient with the history of an asymptomatic mass in the left axilla was referred to our department for sentinel node mapping. The patient had undergone excisional biopsy of the mass 3 weeks before and invasive ductal carcinoma was proven.

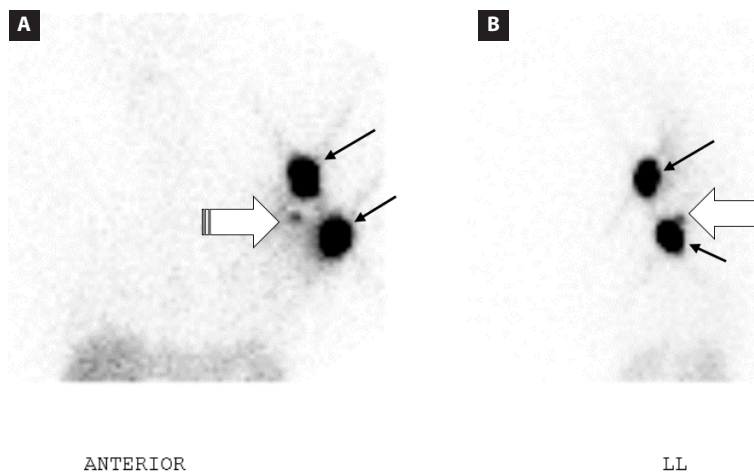
Two aliquots of <sup>99m</sup>Tc-phytate (1 mCi each) were injected in both ends of the surgical scar 24 hours before surgery. Planar imaging (anterior and left lateral view) was performed 12 hours post-injection using dual-head variable angle gamma camera (E.CAM, Siemens) equipped with low energy high resolution collimator and <sup>99m</sup>Tc photopeak with 20% window.

The images showed an axillary sentinel node as a focal zone of increased tracer uptake in the left axillary region (stripped arrows). Injection sites were visible adjacent to the sentinel node (arrows) (Figure 1). During surgery, a hot sentinel lymph node was found (using a hand-held gamma probe) in the left axillary region, which was harvested. Harvested sentinel node was not pathologically involved in the frozen section analysis, thus lymphadenectomy was not performed.

## Discussion

Lymph node staging should correspond to the specific lymph flow drainage site of the malignant tumor. Sentinel node mapping is a viable alternative to lymph node dissection in case of malignant transformation of the ectopic breast tissues [2, 5, 6]. However, our case had a previous history of excisional biopsy of the ectopic breast tissue with a scar in the axilla. Although sentinel node mapping is not contra-indicated in case of excisional biopsy of the primary breast cancer lesions [7–11], a history of previous surgery in the axilla is considered as a contra-indication for sentinel node mapping by many experts. They argue that previous axillary surgery can impede the lymph flow to the axilla with a resulting unacceptable

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**Figure 1A, B.** Lymphoscintigraphy of the patient. The images showed an axillary sentinel node as a focal zone of increased tracer uptake in the left axillary region (striped arrows). Injection sites were visible adjacent to the sentinel node (arrows)

risk of sentinel node mapping failure [12]. On the other hand, many researchers reported successful sentinel node mapping following previous axillary surgery in breast cancer patients [13]. Our case showed that with proper injection of the radiotracer (in both ends of the surgical scar), lymphatic mapping in a previously excised axillary ectopic breast cancer can be successful.

Another problem with axillary ectopic breast cancer sentinel node mapping is the close proximity of the injection sites to axilla which can make intra-operative sentinel node detection very hard by surgical gamma probe due to high background. In our case, we used a two day protocol (radiotracer injection a day before surgery) for lymphatic mapping which can decrease the interfering background from the injection sites [14, 15].

## Conclusion

In conclusion, sentinel node mapping is a viable method for lymph node staging in ectopic axillary breast cancers. History of excision of the primary lesion should not deter the treating physicians from sentinel node mapping.

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