Sentinel node biopsy. Evolving from melanoma to breast cancer
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CHAPTER 11

IMPROVED STAGING OF BREAST CANCER THROUGH LYMPHATIC MAPPING AND SENTINEL NODE BIOPSY

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INTRODUCTION

A sentinel node is the first lymph node to be involved when lymphatic dissemination occurs\(^1\). Sentinel node biopsy is a less invasive technique for staging breast cancer than complete axillary lymph node dissection and may be as accurate. These two cases demonstrate the potential of this novel approach.

CASE ONE

A 71-year old woman presented with a T1N0M0 left breast cancer in the upper inner quadrant. The day before surgery, lymphoscintigraphy was performed and revealed three sentinel nodes (Fig. 1). The next day, modified radical mastectomy (Madden) was performed, preceded by sentinel node biopsy using patent blue dye (Bleu patente V, Laboratoire Guerbet, France) and a gamma detection probe (Neoprobe 1000, Dublin, Ohio, USA). All three sentinel nodes were identified: one in the internal mammary chain, a second node in the axilla and a third node located deep medially in the interpectoral area.

Metastases were found in both the internal mammary chain node and the interpectoral node. Eighteen axillary lymph nodes, including the axillary sentinel node, were examined immunohistologically but none was involved. The tumour was an infiltrating ductal carcinoma, 1.5 cm in diameter, grade II, estrogen receptor negative, mitosis index was six.

She received adjuvant systemic treatment and radiotherapy to the left internal mammary chain.
Fig. 1. Lymphoscintigraphy images half an hour and 2 hours after injection of the tracer. Arrow: radioactivity remaining at the injection site; 1: sentinel node in the internal mammary chain; 2: interpectoral sentinel node; 3: axillary sentinel node.

**CASE TWO**

A 61-year old woman presented with a T1N0M0 right-sided breast cancer in the upper inner quadrant. Two sentinel nodes and two second-echelon nodes were seen on preoperative lymphoscintigraphy (Fig. 2). The next day, sentinel node biopsy was performed as described for case 1, followed by lumpectomy. Both sentinel nodes were identified: one in the contralateral internal mammary chain and a second node in the axilla.

Metastasis was found only in the left internal mammary chain node. Axillary node dissection was not performed because the axillary sentinel node was not involved. The tumour was an infiltrating ductal carcinoma, 0.8 cm in diameter, grade III, estrogen receptor positive, mitosis index of more than 10.
She received adjuvant hormonal treatment and radiotherapy to the breast and the left and right internal mammary chain. She was free of disease 3 months after surgery.

Fig. 2. Lymphoscintigraphy images four hours after injection of the tracer. Left: anterior image revealing one sentinel node and one second-echelon node in the right axilla and a similar configuration in the left internal mammary chain. Right: left anterior oblique image made at an angle of 45 degrees: no focal accumulations are seen in the area of the right (ipsilateral) internal mammary chain.

**CONCLUSION**

Through sentinel node biopsy, metastases were discovered that would not have been found by routine axillary node dissection. Therefore, these patients received radiotherapy of the internal mammary chain and hormonal treatment that otherwise would not have been given.

**REFERENCES**
