

Sentinel Lymphnode in Breast Cancer: an Experience with 53 Cases

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ABSTRACT

The value of sentinel lymphnode biopsy or selective lymphadenectomy in assessing axillary status in breast carcinoma is well established in medical literature. This work presents a brief study from our preliminary experience with 53 patients submitted to pre-surgical lymphoscintigraphy and intraoperative detection of sentinel lymphnode and compares our records with those of current medical literature.

Key words: Breast cancer, sentinel lymphnode, intraoperative probe

INTRODUCTION

Sentinel lymphnode localization (SLN) using ionizing radiation and biopsy is a staging procedure that is being employed to evaluate patients with invasive breast cancer who have clinically normal axillary nodes (Keshtgar et al., 1999; Celebioglu et al., 2007).

SLN is increasingly becoming an alternative method for assessing axillary status in breast carcinoma patients (Vijayakumar et al., 2005). This technique has been proposed as an alternative to complete axillary dissection in patients having small invasive tumors and clinically negative axilla, considering as the main advantage of this procedure a decrease in the associated morbidity of a larger lymphadenectomy (Glass et al., 1999; Veronesi et al., 1997). This procedure is already well established for cutaneous melanoma and breast cancer (Mariani et al., 2001).

The property of interstitially-administered radiolabeled colloidal material to be cleared via the lymph has been exploited for a number of years to investigate the functionality of the lymphatic system. The lymphatic system provides the paths for the spread of cancer (metastasis) from one part of the body to another. Hodgkin's disease, lymphocytic leukemia, various metastatic diseases, and many lymphnode disorders can be assessed by lymphoscintigraphy (Dalia et al., 2005, Bernardo-Filho et al., 2007). Lymphnode disease is demonstrated by diminished or absent flow of lymph. Normal lymphoscintigraphy demonstrates the normal nodes in inguinal iliac, and periaortic regions, several lymphnodes in the parasternal regions, and other lymphnodes depending on the site of the injection. Sentinel nodes are easily seen by this procedure of the nuclear medicine (Saha, 2004).

The aim of this report is to present series of consecutive cases of patients with mammary

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cancer who have undergone sentinel node biopsy after previous lymphoscintigraphy.

MATERIAL AND METHODS

In this retrospective study, 53 patients have been evaluated. All patients were submitted to sentinel lymphnode identification and biopsy. For patient selection, we have considered the following parameters: age of the patient, complementary data of the clinical presentation of the tumor, examinations (mammography, mammary ultrasound), intervention performed by nuclear medicine, surgical data, histological analysis of biopsies and surgical pieces. The age of the patients ranged from 32 to 81 years-old (average 54.81 years-old).

In all patients was injected a 300-600 μCi of the radiopharmaceutical Dextran- $^{99\text{m}}\text{Tc}$ the day before surgery. This radiopharmaceutical was administered by intradermal via around periareolar area or by a deeper peritumoral injection. Scintigraphic images were acquired generally about 3 to 4 hours after the radiotracer injection. Images were performed by gamma-camera with large field of view (LFOV), colimator in a 256 X 256 pixel matrix, in order to check possible migration anterior and lateral projections to visualize radiolabeled sentinel node and mark its correspondent site on suprajacent skin. During surgical act, sentinel lymphnode was detected by a gamma probe, excised by the surgeon and immediately sent to frozen section, at a first time, and for histopathological examination under hematoxylin/eosin staining.

RESULTS AND DISCUSSION

In the present study, the sentinel node identification rate was 96.23% (51/53). Seventy-five sentinel lymphnodes were removed, performing an average of 1.47 nodes per patient. In one patient (1.89%) sentinel node was found in the internal mammary chain and in 51 patients (96.23%) the location was axillary. The average size of the tumors was 24.53 mm (ranging from 9 to 45 mm).

In 13 cases (24.53%), sentinel lymphnodes were positive for malignancy in the frozen study, and patients had their axillary lymphadenectomy

completed; 38 patients (71.70%) were reported as negative. All frozen results were confirmed at definitive histopathologic analysis of tissue sections which have been included in paraffin.

According to medical literature the sentinel lymphnode biopsy in breast carcinoma allows sampling of the lymphnode or nodes that directly drain an area of carcinoma of the breast. The major advantage of this technique is that if the sentinel lymphnode is negative for metastasis, a complete axillary lymphadenectomy can be avoided. So, identification and biopsy of the sentinel lymphnode(s) is a suitable and valid method for determining if total axillary dissection in initial breast cancer patients should or not be avoided.

RESUMO

O valor da biópsia de linfonodo sentinela (linfadectomia seletiva) na avaliação do status axilar no carcinoma da mama está bem definido na literatura médica. Neste breve relatório apresentamos um estudo retrospectivo de nossa experiência inicial com 53 pacientes submetidos à linfocintigrafia e detecção intraoperatória do linfonodo sentinela, comparando nossos dados com o da literatura atual.

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