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Original Article

Selective sentinel lymph node biopsy after neoadjuvant chemotherapy in breast cancer: results of the GEICAM 2005-07 study☆

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ABSTRACT

Introduction: A controversial aspect of breast cancer management is the use of sentinel lymph node biopsy (SLNB) in patients requiring neoadjuvant chemotherapy (NCT). This paper discusses the detection rate (DT) and false negatives (FN) of SLNB after NCT to investigate the influence of initial nodal disease and the protocols applied.

Methods: Prospective observational multicenter study in women with breast cancer, treated with NCT and SLNB post-NCT with subsequent lymphadenectomy. DT and FN rates were calculated, both overall and depending on the initial nodal status or the use of diagnostic protocols pre-SLNB.

Results: No differences in DT between initial node-negative cases and positive cases were found (89.8% vs 84.4%, *P*=.437). Significant differences were found (94.1% vs 56.5%, *P*=.002) in the negative predictive value, which was lower when there was initial lymph node positivi-

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ty, and a higher rate of FN, not significant (18.2% vs 43.5%, P=.252) in the same cases. The axillary study before SLNB and after the NCT, significantly decreased the rate of FN in patients with initial involvement (55.6 vs 12.5, P=.009).
Conclusions: NCT means less DT and a higher rate of FN in subsequent SLNB, especially if there is initial nodal involvement. The use of protocols in axillary evaluation after administering the NCT and before BSGC decreases the FN rate in these patients.

Biopsia selectiva del ganglio centinela tras quimioterapia neoadyuvante en el cáncer de mama: resultados del estudio GEICAM 2005-07

Palabras clave:
Ganglio centinela
Cáncer de mama
Quimioterapia neoadyuvante

RESUMEN

Introducción: La utilidad de la biopsia selectiva del ganglio centinela (BSGC) en pacientes con cáncer de mama que precisan quimioterapia neoadyuvante (QTN) es controvertida. Nuestro objetivo es analizar la tasa de detección (TD) y de falsos negativos (FN) de la BSGC tras QTN así como la influencia de la afectación ganglionar inicial y de los protocolos aplicados.
Métodos: Estudio prospectivo observacional multicéntrico con mujeres con cáncer de mama tratadas con QTN y a las que se les realizó BSGC tras recibir la QTN y linfadenectomía posterior. Se calcularon las TD y las tasas de FN, tanto globales como dependientes de la afectación ganglionar inicial o del uso de protocolos de diagnóstico pre-BSGC.
Resultados: No se demostraron diferencias en la TD entre los casos sin afectación ganglionar inicial y los que sí la tuvieron (89,8 vs. 84,4%; p = 0,437). Sí se encontraron diferencias significativas (94,1 vs. 56,5%; p = 0,002) en el valor predictivo negativo, menor cuando existía afectación ganglionar inicial, y mayor tasa de FN, aunque no de forma significativa (18,2 vs. 43,5%; p = 0,252) en ese mismo supuesto. Un estudio de la axila antes de indicar la BSGC y tras la QTN disminuyó significativamente la tasa de FN en los casos en los que existía afectación inicial (55,6 vs. 12,5; p = 0,009).
Conclusiones: La QTN da lugar a una menor TD y a una mayor tasa de FN en la BSGC posterior, sobre todo si hay afectación ganglionar inicial. Los protocolos para la evaluación axilar después de administrar la QTN y antes de la BSGC disminuyen la tasa de FN en estas pacientes.

Introduction

In extension studies of breast cancer, sentinel lymph node biopsy (SLNB) is the current standard diagnostic technique used. Through this procedure, it is possible to demonstrate lymph node involvement and therefore avoid the morbidity associated with axillary lymphadenectomies, which used to be performed systematically. At present, even the possibility of not performing this type of lymphadenectomy in selected cases with limited lymph node involvement is being considered.[1,2]

However, in all these studies, it is considered contraindicated to perform an SLNB when primary systemic therapy (PST) has been administered. Chemotherapy has been seen as a factor that can sometimes interfere in the detection and correct identification of the sentinel node due to the changes that it produces in the structure of the lymphatic drainage system, in particular when it generates an effective response.[3,4]

Currently, one controversial aspect is whether the growing number of patients who are receiving PST would benefit from an SLNB and what moment would be best to perform the biopsy.[5–8]

This study has a double objective: (1) to analyse the detection rate (DR) and false negatives (FN) of SLNB performed after administration of neoadjuvant chemotherapy (NCT) and (2) to establish whether results are affected by the detection of initial nodal disease and by the application of care protocols.

Patients and Methods

Prospective observational multicentric clinical study (GEICAM 2005–07) that included patients with invasive breast cancer for whom PST was indicated and on whom an SLNB was performed after administering PST, with subsequent axillary lymphadenectomy.

Patients with a history of previous axillary surgery, an inflammatory carcinoma or for whom SLNB was contraindicated were excluded from the study. Patients on whom, for whatever reason, the SLNB was not performed in the standard manner according to normal care protocols were also excluded. The study was approved by the Research Ethics Committee of the participating centres. All patients were informed and specific informed consent was obtained in order to include the patient in the study.

The general characteristics of the study are shown in Table 1, and Table 2 details the principal changes pre- and post-PST.

The pre-PST evaluation of the patients included an axillary assessment using clinical ultrasonography that was