

Publication

Accuracy of frozen section analysis versus specimen radiography during breast-conserving surgery for nonpalpable lesions

JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)

ID 1194680

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Year 2008

Title Accuracy of frozen section analysis versus specimen radiography during breast-conserving surgery for nonpalpable lesions

Journal World journal of surgery

Volume 32

Number 12

Pages / Article-Number 2599-606

BACKGROUND: Whereas specimen radiography (SR) is an established strategy for intraoperative resection margin analysis during breast-conserving surgery for nonpalpable lesions, the use of frozen section analysis (FSA) is still a matter of debate. **METHODS:** A retrospective review was conducted of 115 consecutive operations in which the two objectives sought were the excision of nonpalpable malignant lesions and breast conservation. Breast surgery was performed in the Gynecology and the Surgery Departments at the Basel University Hospital Breast Center. Whereas one department preferably uses SR for intraoperative margin assessments of lesions involving ductal carcinoma in situ (DCIS) or atypical ductal hyperplasia, the other uses FSA to increase the rate of complete removal of these lesions with a single procedure. The respective accuracy and therapeutic impact of these two techniques are compared here. **RESULTS:** Intraoperative resection margin assessments were performed with FSA in 80 and SR in 35 of a total of 115 operations performed on 111 patients with pTis, pT1, or pT2 nonpalpable breast cancer. FSA diagnostic accuracy, sensitivity, and specificity were 83.8%, 80.0%, and 87.5%, respectively, compared to 60%, 60%, and 60%, respectively, for SR. FSA tended to have a stronger therapeutic impact than SR in terms of the number of patients in whom initially positive margins were rendered margin-negative thanks to intraoperative analysis and immediate reexcision or mastectomy (27.5% vs. 14.3%; $p = 0.124$). More importantly, significantly fewer secondary reexcisions were performed in the FSA series than in the SR series (12.5% vs. 37.1%; $p = 0.002$). Finally, the intraoperative detection of invasive cancer with FSA led to a significantly lower number of secondary procedures for axillary lymph node staging (5% vs. 25.7%; $p = 0.001$). **CONCLUSIONS:** The present results suggest that FSA may be more accurate than SR for analyzing intraoperative resection margins during breast-conserving surgery for nonpalpable lesions.

Publisher Springer

ISSN/ISBN 1432-2323

edoc-URL <http://edoc.unibas.ch/dok/A6004887>

Full Text on edoc No;

Digital Object Identifier DOI 10.1007/s00268-008-9757-8

PubMed ID <http://www.ncbi.nlm.nih.gov/pubmed/18836763>

ISI-Number WOS:000260968500010

