

extension of radiotherapy will be assessed on the basis of the results from a longer follow-up.

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POSTER

Preoperative factors influencing complete excision of palpable breast cancer in breast conserving therapy

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Breast conserving therapy (BCT) is a well established surgical treatment for early breast cancer and failure to achieve clear margins increases the likelihood of ipsilateral breast tumour recurrence. The aim of this study is to identify factors that predicts for achieving complete excision during BCT. Clinical, pathological and mammographic data were reviewed for 159 lumpectomies performed for stage I or II breast carcinomas. We achieved complete excision in 126 (79%) while 33 (21%) had involved margins. Of the latter group 27 went on to have re-excision (30%) or mastectomy (70%) and 11 (41%) had residual disease. The mean age, size of tumour and experience of surgeon of both groups were similar. The factors that significantly affected outcome included tumour type ($p = 0.003$), mammographic appearance of spiculated mass ($p = 0.047$), distortion ($p = 0.003$) or nonvisible abnormality ($p = 0.02$). Mass lesion with spicules that extended more than 1.5 times the size of the mass lesion were particularly likely to be incompletely excised ($p = 0.0085$). Our data suggest that based on the type and mammographic appearance of the tumour, it is possible to detect a large percentage of the cancers that are likely to be incompletely excised. Patients with these factors not only should be warned about the possibility of incomplete excision and requiring further surgery, but also should be considered for a wider initial excision possibly followed by mini LD flap reconstruction.

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POSTER

Dye-guided sentinel lymphadenectomy in clinically node-positive and node-negative breast cancer patients

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Purpose: It was evaluated whether a dye-guided sentinel lymphadenectomy is useful to assess axillary metastases not only in patients with clinically negative node but also in those with clinically positive node.

Method: After induction of general anesthesia, 4 mL of 1% patent blue dye was injected with a 25-gauge needle into the peritumoral area. Approximately 5 min later, blunt dissection was performed through breast incision or axillary incision until a lymphatic tract or blue-stained node was identified. When there was no stained lymph node except for a blue lymphatics going directly into the hilum of a non-blue lymph node, this lymph node was judged as the sentinel lymph node (SLN) in this series.

Results: The SLN was identified in 29 (78%) of 37 patients with clinically negative node, whereas it was in 12 (92%) of 13 patients with clinically positive node. In 3 of 4 patients with extensive axillary involvement, nevertheless, SLN was not stained while a blue lymphatics going directly into the hilum of a non-blue lymph node. A diagnostic accuracy of 88%, a sensitivity of 63% and a specificity of 100% were achieved in clinically negative-node patients, whereas they were 91%, 90% and 100% respectively. Thus, the incidence of SLN identification and the predictive value of sentinel lymphadenectomy were not significantly different between both groups of patients.

Conclusion: It may be concluded that sentinel lymphadenectomy is useful to assess the axillary metastases in clinically node-negative and node-positive patients, unless axillary lymph nodes are extensively involved.

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POSTER

Do lobular & ductal carcinoma lead to different local recurrence rates after breast conservation?

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Introduction: Local recurrence (LR) after breast conservation surgery (BCS) remains a potentially difficult problem. It has been suggested that BCS for lobular carcinoma might lead to more LR.

Methods: A prospective study was performed on 684 patients with newly diagnosed ductal carcinoma and 98 patients with pure lobular carcinoma treated by breast conservation for between 1986–1993. The mean follow-up

was 90 months. Margins were assessed by separate cavity biopsies. Survival analysis was assessed by the Kaplan-Meier method and the Logrank test. Multivariate analysis was performed using Cox's model.

Results: 13.3% of women with ductal tumours and 23.3% with lobular tumours had involved margins (chi 2 test; $p = 0.008$). Overall 5 year local recurrence rates, however, did not appear to be different between the two groups (ductal 8.3% v lobular 8.2%). Analysis of overall survival demonstrated that margin involvement adversely affected survival of women with ductal cancer, but not women with lobular.

Conclusions: This study shows that although margin involvement is higher in lobular cancer, local recurrence rates appear to be similar for both tumour types. In this study, margin involvement in ductal cancer is an independent factor in reducing overall survival. These data suggest that breast conservation leads to similar local recurrence in ductal and lobular cancer.

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POSTER

Efficacy and significance of sentinel lymph node identification with technetium-99m-labeled tin colloids for breast cancer

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Purpose: The sentinel lymph node (SLN) reflects the histologic features of axillary lymph nodes in patients with breast cancer. We used technetium-99m-labeled tin colloids, readily available in Japan, to identify SLN. The characteristics of SLN in terms of number, size, and location are disclosed. The efficacy of emulsion charcoal injection for visible identification of SLN was evaluated.

Methods: Twenty-five patients with invasive breast cancer were studied. Under ultrasonography guide, technetium-99m-labeled tin colloid particles (3 mL) were injected within 3 mm around the tumor or into the wall of the biopsy cavity, 2 hours before surgery. Just before the incision, an emulsion of charcoal particles (2.5 mL) was injected into the breast parenchyma surrounding the tumor. All cases underwent a mastectomy with axillary dissection up to level III. The radioactivity of each lymph node was counted. All axillary specimens were processed in individual blocks for permanent-section histopathologic evaluation with H&E.

Results: SLN were defined as lymph nodes with 100,000 counts per minute (cpm) in radioactivity from labeled tin colloids. In all patients, SLN could be identified in all cases. The 48 SLN were identified in the 25 patients (mean, 1.9 SLN/patient; range 1–4). The mean uptake in SLN was 383,124 cpm, and 884 cpm in non-SLN nodes, so discrimination between SLN and non-SLN nodes was easy. Clearly visible lymph nodes with charcoal staining covered 83.3% of all SLN, although 21.3% of non-SLN were also stained. There were no specific features in the location and size of SLN; SLN were not located at the level III region. The SLN were metastatic in 10 of the 25 patients; in 4, the SLN were the only metastatic nodes whereas in the remaining 6 patients, other axillary nodes were positive. Fifteen patients had negative SLN without any other lymph node involvement. There were no skip metastases.

Conclusion: SLN identified with tin colloids have predictive value in reflecting the histologic features of other lymph nodes in breast cancer.

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POSTER

Stereotaxic guided excisional biopsy (ABBI®) – A new method for precise and minimal invasive breast surgery?

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Purpose: The use of screening-mammography leads to a further increase of diagnosed non-palpable breast lesions and microcalcifications. We analyzed the role of stereotaxic guided core biopsy for the histological diagnosis of occult breast lesions. Furthermore we defined the advantages of the new developed stereotaxic guided excisional biopsy.

Methods: Between 1994 and 1997 we performed stereotaxic guided core biopsy in 160 solid lesions and 50 microcalcifications. All lesions were surgically excised after biopsy. The histological diagnosis of the core biopsy was correlated to the diagnosis after surgical excision. In a pilot study we evaluated the role of stereotaxic guided excisional biopsy (ABBI®) for diagnosis and therapy of non-palpable breast lesions to improve the accuracy and precision of breast surgery.

Results: Stereotaxic guided core biopsy leads to a sensitivity of 93% for the histological diagnosis of solid lesions, while the sensitivity for microcalcifications was 73%. Stereotaxic guided excisional biopsy was able to improve the sensitivity for the diagnosis of microcalcifications and improves the precision of excisional techniques in breast surgery.

Conclusion: For the diagnosis of benign microcalcifications and intraductal breast cancer stereotaxic guided excisional biopsy is an adequate method which leads to a new era of precise and minimal invasive breast surgery.

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POSTER

A prospective study of sentinel lymph node in patients with breast cancer using a combined technique: Dye and radio-labelled colloid

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Background: Sentinel lymph node (SLN) identification in patients with breast cancer has been established by using either blue dye or radio-labelled colloid. The aim of this study is to establish whether the rate of identification of SLN is increased by using the two techniques together.

Methods: A prospective study of 35 consecutive patients with operable breast cancer. Radio-labelled colloid (Tc99) and patent blue injected around the tumour or its biopsy cavity. 18 patients had axillary clearance, 17 had axillary sampling, 5 of whom subsequently underwent clearance. SLN identified by its blue colour and/or hand-held gamma probe.

Results: The SLN was identified by both techniques in 34 patients. The identification rate was: Dye, 94.3% (33/35), Tc99, 91.4% (32/35) and Dye + Tc99, 97.1% (34/35). Both techniques failed to identify SLN in one patient (2.8%). One SLN identified by both techniques contained no tumour (2.8%) but a very large adjacent node contained metastases.

Conclusions: (1) An increase in rate of identification of SLN using combined techniques. (2) Lymphatics leading to large lymph nodes (3 cm or more) replaced by metastases may be blocked by tumour cells, and this may force the dye or isotope to divert their pathway to a nearby falsely -ve SLN.

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POSTER

The frequency of metastases in the interpectoral lymphatic pathway in patients with breast cancer

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Interpectoral lymphatic pathway (ILP) presents the additional way of cellular spread in breast cancer. By this way metastases from breast tissue can be carried to subclavicular lymph nodes, that means to the apex of axilla, bypassing the main axillary nodal group. The aim of the study was to find out the frequency of interpectoral involvement and to estimate factors which can increase the risk of the metastatic changes. The analysis was carried out in 145 patients operated between 1993 and 1994 in Clinical Oncology Unit in Lodz. In 3 women radical mastectomy was performed, in 125 patients modified radical mastectomy was performed and in 17 patients quadrantectomy with axillary dissection was carried out. In all patients the removal of interpectoral lymphatic tissue have been dissected, and all the specimen have been subsequently examined. In two patients in ILP several small lymph nodes were found, in 116 cases ILP was formed by lymphatic vessels, in 27 cases normal fatty tissue was reported. Metastatic changes were found in 27 (23.6%) cases and were presented as massive or embolic metastases in lymphatic vessels. In one of these patients metastases were found in the apex of axilla without any changes in lower parts of the axillary lymph nodes. In one patient metastases in ILP were the only symptom of regional disease. The analysis of our material showed that ILP involvement correlates with size of tumour and its location in the breast: when the diameter of the tumour was more than 2 cm and when the tumour was located in the upper quadrants or in the central part of the breast metastases in ILP were statistically more common.

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POSTER

multiple lymphatic drainage pathways in breast cancer and its implication for sentinel lymph node (SLN) biopsy and internal mammary (IM) lymph node biopsy or radiation

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Purpose: SLN biopsy is used in the staging of breast cancer. This study identifies multiple lymphatic drainage pathways in some patients undergoing SLN biopsy.

Methods: SLN biopsy was performed 2 to 4 hours after lymphoscintigraphy using 99Tc sulfur colloid and 5-10 minutes after injection of isosulfan blue dye. SLNs were identified visually and using a handheld gamma-detection probe. All patients but one underwent standard axillary lymph node dissection. SLNs were analyzed by H&E and/or cytokeratin immunostains. Lymphoscintigraphy and/or intraoperative identification of SLNs that were anatomically separate and unconnected by blue afferent lymphatic tracts identified multiple lymphatic drainage pathways.

Results: Twenty-two women were studied. Tumors ranged from 0.2-2.8 cm. Ten patients had intact tumors; 12 patients had undergone prior breast biopsy. Multiple lymphatic drainage pathways were identified in 7 patients: 4 with intact tumors greater than 1.6 cm and 3 with biopsy cavities greater than 2.7 cm or centrally located. 9% of patients drained to IM and axillary lymph nodes.

Conclusion: Multiple lymphatic drainage pathways to axillary and/or IM lymph nodes may occur as breast cancers enlarge or may result from injections around large or midline biopsy cavities. Implications for SLN biopsy and IM SLN biopsy and/or radiation will be discussed.

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POSTER

Male breast cancer: A retrospective analysis of patients treated in Trieste, Italy

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The present study evaluates retrospectively 35 cases of non-metastatic male breast cancer, treated in Trieste from 1980 to 1996. The median age was 66.5 years (range 32-82). All patients underwent surgery; a radical mastectomy was performed in 33 cases, a wide excision in 2 cases. Pathological staging showed: pT1: 4, pT2: 6, pT3: 3 and pT4: 22 tumours; histological subtypes were: ductal infiltrating carcinoma: 31, lobular infiltrating carcinoma: 2, ductal carcinoma in situ: 2 cases. Positive lymph nodes were found in 20/33 (60.6%) patients, with infiltrating carcinoma, who underwent axillary dissection.

Our series covers a long period, so that treatment modalities, especially adjuvant therapy, change over time. After surgery, 11/35 (31.4%) patients received chest wall and supraclavicular irradiation; adjuvant chemotherapy and hormone therapy were administered to 13/35 (37.1%) and 8/35 (22.8%) patients respectively.

With a median follow up of 67 months (range 10-216 months), 15 patients died of breast carcinoma; 8 from other causes; 7 are alive without relapse and 1 is alive with disease; 4 patients were lost to follow up.

Our retrospective analysis confirms previous studies, showing that both age and cancer stage at diagnosis are more advanced in men with respect to women. However, the prognosis of male patients with breast cancer does not differ significantly from female patients when disease-specific survival rate, tumour size and axillary status are compared.

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POSTER

Breast-conserving therapy in case of carcinoma tumours larger than 2 cm with the help of individually adapted oncoplastic operations

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Purpose: In spite of intensive efforts for early cancer detection the rate of tumours larger than 2 cm reached in our clinic for the last ten years continuously 60% or more. Therefore the breast conserving therapy (= BCT) is limited by the tumour-to-breast size relation. Can we improve this fact by using oncoplastic operation techniques?

Methods: Since 1989 oncoplastic operation techniques with tumour- and constitution-specific incisional patterns were evolved. In the present