Image guided radiotherapy of breast cancer is based on the assumption that we must irradiate only region with lymph flow from the tumour-regions containing SLN.
Results: axillar region contained SLN in all 49 patients, in 24 of them it was only region with visualised SLN. In another 26 patients we detected additional regions containing SLN: 11 (22%) tumours drained to Ax+SSCL, 8 (16%) – Ax+IM, 7 (14%) – Ax+SSCL+IM lymph-nodes.
In 13 patients with "internal tumours" 5 (38%) had SLN in the Ax region only, 5 (38%) – Ax+IM, 2 (16%) – Ax+SSCL, 1 (8%) – Ax+IM+ISSCL. After SLN visualization standard radiotherapy portals were reduced in 12/13 (92%) cases.
In 36 patients with "external tumours" 18 (50%) had SLN in the Ax region only, 3 (8%) – Ax+IM, 9 (25%) – Ax+SSCL, 6 (17%) – Ax+IM+ISSCL. After SLN visualization standard radiotherapy portals were changed in 27/36 cases (75%): in 50% – reduced, in 25% – enlarged.
Conclusion: Visualization of SLN help to optimized extent of radiation fields in 75% of patients with external and 92% – with internal tumour localization.

5114 POSTER

Is fine needle aspiration cytology useful in male breast lesions?

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Background: The purpose of this retrospective study was to determine the value of fine needle aspiration (FNA) cytology in the work-up of male breast lesions. A malignancy in the male breast is a rare pathologic finding and a challenge for the pathologist with limited cytopathologic experience. Focussed was on items as atypia and inadequacy. The results of the study were compared with the recent literature on male breast tumors since 2001.
Materials and Methods: From 1993 to 2008 8,484 FNAs of the breast were examined in our institute, 147 FNAs were from unilateral lesions of the male breast. The FNAs were classified in the categories proposed by the 1996 National Cancer Institute-sponsored conference approach: malignant, suspicious for malignancy, atypical, benign and unsatisfactory. Cytohistologic correlation was done with the data from the available histopathology records. Sensitivity, specificity, accuracy, positive and negative predictive values were calculated.
Results: In 85 cases of the 147 FNAs on male breasts histologic correlation was available. On FNA the 16 malignant cases were classified as positive (n = 12), suspicious for malignancy (n = 2) or atypical (n = 2). Of the 35 benign lesions on histology only 3 cases were classified as atypia and one as suspicious for malignancy on FNA. In the unsatisfactory FNAs (n = 64), no carcinomas were diagnosed. The sensitivity and specificity were 100 and 89.7%, respectively. The overall accuracy was 92.7% and the positive and negative predictive values were 75 and 100%, respectively.
Our results confirm the outcomes of the studies on male breast lesions in the recent literature.
Conclusions: FNA on benign breast lesions yielded many unsatisfactory cases. However, due to the good cytohistologic correlations and favourable statistic figures, we can conclude that FNA cytology is an excellent diagnostic tool in the work-up of male breast carcinomas.

5115 POSTER

Value of sentinel lymph node biopsy in ductal carcinoma in situ of the breast

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Background: Though the role of axillary staging in invasive breast cancer has been established, the value of the sentinel lymph node biopsy (SLNB) in ductal carcinoma in situ (DCIS) of the breast remains controversial.
Material and Methods: A retrospective study of the medical records of all patients with DCIS diagnosed by core-needle biopsy during a 4 year period (2005–2008) was performed. Patients with an invasive component in histology were excluded.
Results: During the 4-year study period, 1013 patients were operated for breast cancer; 44 patients had a preoperative diagnosis of DCIS (without invasive components) on core-needle biopsy. The majority of these patients were referred through the national breast cancer screening program and had no palpable masses at physical examination; mammography mostly showed pathologic clusters of microcalcifications with no ultrasonographic substrate. Definitive preoperative diagnosis of DCIS was based on examination of core-needle biopsies, mostly performed stereotactically (vacuum-assisted biopsy). All patients underwent SNLB combined with either wide local excision (57%) of the primary tumor or mastectomy (43%). On definitive pathological examination, invasive growth was found in 10 patients (23%) (Table 1). Sentinel node (SN) positivity was found in 4 patients (9%), 3 of whom demonstrated positivity at intraoperative frozen section examination. All but 1 of these 4 SN-positive patients were ultimately proven to have invasive breast cancer. All 4 patients underwent axillary lymph node dissection (ALND); in 1 patient further axillary metastases were found.
Conclusion: In patients with an initial diagnosis of DCIS on core-needle biopsy, SNLB should be performed routinely, as a substantial portion of these patients will be upstaged to invasive breast cancer based on definitive histological examination; moreover, the 9% SN-positivity rate found in this study exceeds the 5% threshold for SNLB performance maintained in most studies and guidelines.

Table 1

	N (%)
preoperative diagnosis DCIS	44 (100%)
postoperative diagnosis	
DCIS	34 (77%)
invasive breast cancer	10 (23%)
SNLB	
negative	41 (93%)
positive	4 (9%)
ALND	4 (9%)
further metastases (apart from SN)	1 (25%)

5116 POSTER

Treatment of small invasive breast cancer with ultrasound-guided radiofrequency ablation followed by immediate resection

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Background: The trend towards less invasive local treatment of breast cancer has led to studies evaluating minimally invasive techniques to locally eradicate tumors. Radiofrequency ablation (RFA) is a minimally invasive thermal ablation technique. After performing an ex vivo study which resulted in complete cell death in 17/20 breast cancer lesions, an in vivo study was initiated to determine the feasibility, safety and complications of this procedure.
Materials and Methods: Postmenopausal women with a small ($\leqslant$1.5 cm) invasive ductal carcinoma – diagnosed by core needle biopsy – were considered eligible for this study. RFA was performed in the operating room, followed by immediate resection (lumpectomy or mastectomy). A needle electrode was placed in the centre of the tumor using ultrasound guidance. Subsequently, the tumor was ablated for a period of 12 minutes. Pathologic evaluation of the specimens was performed using conventional hematoxilin-eosin (HE) staining as well as cytokeratin 8 staining and NADH diaphorase to assess cell viability.
Results: Up to now, 8 patients with an average age of 67 years (range 58−72) have been included. The mean tumor size was 14 mm (range 8−24). Histopathological examination revealed complete cell death in all lesions. One patient suffered a burn wound due to heat conduction by a localization wire placed in the tumor before the procedure, which healed completely after conservative treatment.
Conclusions: In vivo ultrasound-guided radiofrequency ablation can result in complete cell death in invasive breast cancer. To avoid skin burns the distance of the tumor to the skin should be more than 1 cm and the placement of a localization wire before the procedure should be avoided.

5117 POSTER

Are lymphogenic micrometastases in breast cancer a prelude to macrometastases?

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Background: The increased observation of lymph node micrometastases in breast cancer patients since the introduction of the sentinel lymph node (SLN) procedure offers an opportunity to study the development of metastatic disease within a lymph node.