stomach were recorded. Slides of the stomach and breast were reviewed to determine the type of tumour and histological similarity. Cancer of the stomach was classified according to Lauren. All cases were stained with antibodies for cytokeratin 7, cytokeratin 20, E-cadherin, estrogen receptor and progesteron receptor and slides were stained in a Benchmark XT automatic stainer (Ventana).

Results: A total of 26 patients were retrieved from our files and in 18 patients slides of the breast and stomach could be reviewed and sufficient material was available for additional staining. Median age was 67 years (37−79 years). In 7 patients (37−71 years) the cancer of the stomach was shown to be metastatic disease. In 6 patients the gastric metastasis had a diffuse growth pattern and in 5 patients the breast cancer was of the invasive lobular type. Median time between diagnosis of breast cancer and gastric metastasis was 32 months (1–167 months). In 2 patients a diagnosis of gastric metastasis was made only after resection of the stomach. All gastric metastases were positive for hormone receptors.

Conclusion: Cancer of the stomach can be metastatic disease in breast cancer patients, even in those with a remote history of breast cancer. Proper clinical information and staining of the gastric biopsy are most helpful in avoiding misclassification.

306 Poster

Clinicopathological features of inflammatory versus non-inflammatory locally advanced non-metastatic breast cancer

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Background: Inflammatory breast cancer (IBC) is a rare but aggressive form of breast cancer. It is mainly a clinical diagnosis. The aim of this study was to compare IBC to clinically diagnosed non-inflammatory locally advanced non-metastatic breast cancer further (cLABC) with respect to clinicopathoIocial features.

Material and Methods: 108 patients were studied: 49 with IBC and 59 with cLABC. The following features were analysed: age at diagnosis, body mass index (BMI), axillary lymph node status (cN), oestrogen receptor status (ER), progesterone receptor status (PR), HER2 status, histological tumour grade and subtype. Short term disease-free and overall survival (DFS, OS) were also assessed in both groups.

Results: Compared with cLABC, IBC was less often PR positive (41.7% vs 66.1%, $p = 0.01$) and showed a trend to be more often HER2 positive (34.7% vs 19.3%, $p = 0.07$) The 3-year DFS was 63% and 77% respectively for IBC and cLABC ($p = 0.01$); these figures were 83% and 85% for OS ($p = 0.17$). No significant differences in age at diagnosis, ER, cN, BMI, histological tumor grade or subtype were detected.

Conclusion: Differences in PR, HER-2 and DFS confirm the distinctive biological nature of IBC and cLABC. Age at diagnosis, ER, cN, BMI, histological tumour grade and subtype show no difference and therefore these features might be more determined by or related to the locally advanced stage than to the inflammatory component itself.

307 Poster

HER-2/neu amplification detected by fluorescence in situ hybridization in touch imprint cytology in comparison with tissue sections

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Background: HER-2/neu status has been used in breast cancer as a prognostic and predictive factor to select patients for trastuzumab treatment. The analysis of HER-2 is usually performed on formalin-fixed paraffin tissue sections and testing with fluorescence in situ hybridization (FISH) is preferred. The objective of our study was to evaluate the reliability of HER-2/neu determination by FISH on touch imprints (TI) of breast core needle biopsies (BCNB) from primary breast cancer patients in comparison with the results obtained by FISH on the corresponding tissue sections (TS).

Material and Methods: The sections tissue of the BCNB were touched a lot of times to one slide, it was made another mirror slide and then, one of them was stained whit H&E to detect malignant cells and other was utilized for FISH: The slides of TI of the breast core needle biopsies and corresponding TS from breast cancer patients were eavluated for HER-2 gene amplification by determining the HER-2/CEP17 signal ratio in 20 tumor nuclei. If the ratio was <2.2, the specimen was considered to lack gene amplification; if the ratio was ⩾2.2, the specimen was considered to show HER-2 gene amplification. Chi square test was made.

Results: A total of 55 BCNB were examined and paired results by FISH cytology and FISH histology were available in 48 cases. Concordance was 83.33% (40/48). Eight cases didn't show concordance. It was not stastistically significant ($p > 0.05$) by chi square on both samples

Conclusion: We conclude that HER-2 gene analysis by FISH on TI is easily done and reliable tecnique. TI provided results earlier and quicker, were easier to score and were more accurate. However, the use of TI sacrifice the arquitectural tissue.

Thursday, 17 April 2008 12:30–14:30

POSTER SESSION

Pathology and biology

308 Poster Discussion

Detection of homologous recombination defects in biopsies of sporadic breast cancers

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Background: It has been suggested that up to 30% of sporadic breast cancers may have defective homologous recombination (HR), the only cellular mechanism that reliably repairs DNA double strand breaks. DNA-damaging drugs including alkylating agents can cause double strand breaks. Tumours with deregulating mutations in the key players of HR may be extremely sensitive to these and to a novel class of agents targeting DNA-repair: the poly (ADP-ribose) polymerase (PARP) inhibitors. The identification of such a subgroup of breast cancers before treatment could be of great clinical utility. This study was initiated to develop a test that can be incorporated in a routine clinical workup.

Materials and Methods: So far, 38 patients with HER2 negative tumours and scheduled for preoperative chemotherapy have been tested prospectively. We investigated the expression levels of BRCA1, FANCC, and FANCF by quantitative RT-PCR and amplification of the EMSY gene first by FISH and additionally by Multiplex Ligation-dependent Probe Amplification (MLPA). Triple-negative patients were additionally checked for BRCA1 germ line mutations by sequencing the BRCA1 gene locus.

Results: EMSY amplification assessment by FISH is technically challenging and is not an optimal choice for clinical routine. MLPA is a reliable alternative that can also detect amplification missed by FISH because of high background staining. Quantitative RT-PCR detected a number of tumours with a considerably lower expression of BRCA1 ($n = 5$) than the other ones ($n = 33$). Of those 5 tumours, four had a triple-negative phenotype, whereas the other one was a luminal tumour with a high expression of the estrogen receptor.

Conclusion: Amplification of the EMSY gene locus is a rather rare event. Detection by FISH may miss samples that can be detected by MLPA. The main changes in the investigated sporadic samples are low expression of the BRCA1 and FANCC protein. Gene expression arrays are available of these samples and an update and comparison of the applied techniques will be presented.

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TP53-mutated breast carcinomas are associated with specific array comparative hybridization (aCGH) patterns involving deletions of 3p, 4p, 4q and 5q

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The TP53 tumor suppressor protein acts as a major defense against cancer. Among its most distinctive features is the ability to elicit both apoptotic death and cell cycle arrest. TP53 plays a key role in mediating cell response to various stresses: one of these is DNA-repair. When *TP53*