whether radiotherapy was given. The local recurrences were predominantly non-invasive and came from high grade original primaries. Hypotheses will be developed to suggest associations between radiological characteristics and the likely pathological findings and the prognostic significances of these identifiers.

464 ORAL

Micrometastases in sentinel lymph nodes of patients with ductal carcinoma in situ of the breast should have no consequences for further treatment

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Background: (Micro-)metastases may be detected in sentinel axillary lymph nodes of patients with in situ carcinoma of the breast or small invasive carcinomas. For some surgeons this is a reason to routinely perform a sentinel node procedure in situations otherwise known to have an excellent prognosis without axillary staging. The incidence and predictive value of these positive nodes is uncertain.

Methods: The authors used cases from the Netherlands Cancer Institute to determine the incidence of lymph node metastases in ductal carcinoma in situ (DCIS) and small invasive carcinoma after immunostaining. All consecutive patients with primary breast cancer were selected that were treated between 1989 and 1998 and had undergone axillary dissection as part of their treatment. Patients were identified with pure DCIS (n=71), DCIS with microinvasion (n=12), invasive ductal/lobular carcinoma (IDC/ILC) ⩽5 mm (n=18) or tubular carcinoma ⩽10 mm (n=17). All archived lymph nodes of these patients were re-evaluated using immunohistochemistry (IHC) at deeper levels.

Results: More metastases were found with the use of IHC. In DCIS the incidence increased from 1.4% with routine staining to 11% with IHC. For DCIS with microinvasion <2 mm it was 0% versus 27% respectively. In IDC/ILC sized 2–5 mm the incidence rose from 6% to 12% and in tubular carcinoma ⩽10 mm from 0% to 12%. All but one of the immunohistochemically detected metastases were solitary cells (n=9) or micrometastases (n=4). Maximally two nodes per patient were affected. None of the patients with positive lymph nodes died during follow-up (mean 102 months).

Conclusions: Because 1) micrometastases do not have the same prognostic significance as macrometastases and 2) survival of our patients does not appear to be influenced by micrometastases, we advise not to perform an ALND when a micrometastasis is found in the sentinel node of a Tis or T1a tumor.

465 POSTER

Predicting recurrence risk in DCIS: The role of Type 1 tyrosine kinase receptor co-expression

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Background: Up to 20% of patients with DCIS recur following breast-conserving surgery and radiotherapy, half of which are invasive. The type 1 tyrosine kinase receptor HER2(c-erb2/neu) is associated with resistance to hormone therapy and early recurrence in invasive breast tumours. Determining the patterns of co-expression of HER2 with another type 1 tyrosine kinase receptor – HER4 and other tumour markers may aid prediction of recurrence risk following surgery for DCIS. We studied 135 women with DCIS (follow up: range 3–12 years, median 5 years), 42 patients who had recurred (29 recurrent DCIS and 13 invasive disease,) and 94 patients who had not recurred.

Methods: The primary DCIS of the cases were compared for HER2, HER4, oestrogen receptor (ER), cyclooxygenase-2 (COX-2) and Ki67 antigen (a marker of proliferation) expression by immunohistochemistry. HER2/4 and COX-2 were scored 0 (absent) to 3 (maximum). Scores ⩾2 were taken as over-expression. ER was scored positive if ⩾5% of cells stained. Ki67 antigen was expressed as the percentage of positively staining cells. At least 1000 cells were counted for each section.

Results: Of the non-recurrent lesions 57% were HER2 positive and 63% HER4 positive, compared to 81% HER2 positive (p=0.007*) and 40% HER4 positive (p=0.003*) in the recurrent group. Co-expression of HER2 with HER4 was associated with a reduced recurrence compared to HER2 positive tumours that lacked HER4 (p=0.003*). This association remained significant when stratifying for both high-grade (p=0.015*) and breast-conserving surgery (p=0.0001*). HER4 positive DCIS was more likely to be ER positive than HER2 positive DCIS (74% vs. 51%) p=0.048*. ER status did not influence recurrence in HER4 positive tumours (p=0.8*). None of the HER4 positive/HER2 negative recurrences were invasive. HER2 positivity was associated with a higher and HER4 positivity a lower percentage of proliferating cells (mean 19.3 vs. 10.4%) (p=0.004**). 70% of the non-recurrent cases were COX-2 positive compared with 87% of the recurrent cases (p=0.039). There was no relationship between COX-2 and either HER2/4 co-expression or ER status.

	Receptor Co-expression					
	HER2neg/ HER4neg	HER2pos/ HER4neg	HER2neg/ HER4pos	HER2pos/ HER4pos	Total	p value
N=No recurrence (%)	11 (12%)	23 (25%)	29 (31%)	30 (32%)	93	p=0.008*
N=Recurred (%)	5 (12%)	20 (48%)	3(7%)	14 (33%)	42	
Mean Ki67 (%)	13.4	19.3	10.6	15.4		p=0.004**

*Chi-square, **Kruskal-Wallis test.

Conclusion: Co-expression of HER4 with HER2 reduces the risk of early recurrence of DCIS compared to HER2 over-expressing tumours lacking HER4. COX-2 negativity is also associated with a lower risk of recurrence. The assessment of type 1 tyrosine kinase receptor co-expression and COX-2 expression can aid the prediction of recurrence risk in DCIS.

466 POSTER

Trends in diagnosis and treatment of ductal carcinoma *in situ* of the breast in 403 cases over 1986–2002

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Background: The aim of this study is to watch the trends in diagnosis and treatment of 403 cases of ductal carcinoma *in situ* (DCIS) over the period 1986–2002. The impact of clinical, pathological and treatment characteristics were evaluated with respect to risk on recurrence.

Methods and Materials: Four hundred and three (403) cases of DCIS underwent surgery at the Netherlands Cancer Institute/Antoni van Leeuwenhoek hospital (NKI/AvL) from January 1986 to December 2002. All patients with 'pure' DCIS and no prior history of breast cancer were included.

The clinical and pathological characteristics evaluated were: age, detection method, biopsy method, number of surgical procedures, completeness of excision and histological grade.

Mainly, the effect of the introduction of mammographic screening and stereotactic core biopsy on treatment policy was studied.

Results: One hundred and sixty-five patients (41%) were treated with breast-conserving therapy, 97 (24%) with excision alone, and 68 (17%) with excision plus radiotherapy, and 238 (59%) with mastectomy. Median age was 51.0 years (range: 24–81 years).

DCIS detected mammographically increased from 50% in the late eighties to 83.6% in the nineties, whereas the number of symptomatic lesions decreased from 28.9% to 14.8%. Since the introduction 10 years ago, more than 70% of all DCIS are diagnosed by stereotactic core biopsy now. As a result, the number of surgical multi-step procedures necessary for definite treatment declined from 76.5% in 1995–1997 to 41% in 2001–2002. Today, 59% of DCIS patients are being treated surgically in one step.

The breast-conserving therapy/mastectomy ratio did not change over time with about 60% of patients treated ultimately by mastectomy (with either simple or skin-sparing reconstruction).

Conclusion: This study shows an increase in mammographically detected DCIS and in the use of stereotactic core biopsy in diagnosing DCIS over the last decade. The latter caused a decline in multi-step surgical procedures and in the number of positive margins after first surgery. The introduction of mammographic screening did not reduce the rate of mastectomies.

467 POSTER

Lobular carcinoma in situ – correlation of grading with invasive carcinoma and with ductal carcinoma in situ

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The aim of the study was to assess the value of some histopathological parameters in evaluating lobular carcinoma in situ as a risk factor for the development of ipsilateral and contralateral ductal or lobular