between a delegation of the committee and the involved disciplines in the hospital

Conclusions: A quality system for systematic evaluation of the existing care process can be developed. The variations in results of the first round motivate recommendations for improvement of the existing care process. During the evaluation process improvement is already observed. A short term follow-up visit is added to the system aiming at confirmation for sustained improvement in the next rounds.

66 Poster
The validity of the preoperative assessment of tumor extent by MRI in breast cancer surgery

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Background: In breast conserving surgery (BCS) for primary breast cancer, remaining cancer cell may lead to local recurrence and intraductal spreading (IDS) is one of the chief factors for positive surgical margins at BCS. Therefore, it is very important to know the status of IDS preoperatively in breast cancer treatment. A few examinations such as computed tomography, ultrasonography and magnetic resonance imaging (MRI) are popularly used for evaluating tumor, and MRI has been reported as a useful test for detecting tumor and IDS. In the present study, our purpose was to clarify the validity of MRI for preoperative IDS assessment.

Patients and Methods: One hundred ten patients of primary breast cancer, who received both preoperative MRI examination and surgical treatment at Niigata university hospital between 1994 and 2004, were entered into the present study. Among all 110 patients, mastectomy was performed in 52 patients and BCS was performed in 58 patients. The status of IDS evaluated by preoperative MRI (MRI-IDS) was compared with postoperative histological diagnosis of IDS (Hx-IDS), and each sensitivity (ST), specificity (SP), accuracy (AC), positive predictive value (PPV) and negative predictive value (NPV) was calculated for each method. In the BCS cases, the correlation between MR-IDS and histological margin status was also examined. The statistical analysis was performed by chi-square test, and the statistical significance was defined as $p < 0.05$.

Results: The ST, SP, AC, PPV and NPV of DS-MRI for all patients was 77.6%, 73.8%, 75.5%, 70.4% and 80.4%, respectively. In the cases of BCS, the ST, SP, AC, PPV and NPV was 83.3%, 86.5%, 86.2%, 41.7% and 97.8%, respectively. The correlation between MRI-DS and Hx-DS was significant in both, the whole group and BCS cases ($p < 0.001$). In the BCS cases, 5 patients showed positive surgical margin; one patient (16.7%) in MRI-DS positive and four patients (7.7%) in MRI-DS negative patients. Among those 5 patients, 3 patients underwent mastectomy, and the other 2 patients received radiation.

Conclusions: Our results suggest that preoperative MRI is a valuable tool for preoperative IDS assessment, and that MRI is an effective method to decide surgical treatment whether BCS or mastectomy in breast cancer patients.

67 Poster
Delays in breast cancer diagnosis: Does a structured care pathway influence outcomes?

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Background: Delay in diagnosis of breast cancer remains a potential issue for media attention and litigation. It is therefore imperative to accurately confirm or exclude cancer in an efficient manner. A structured clinic pathway has been developed in our hospital to minimize inaccuracies and diagnostic delays. This study aims to assess the efficacy of the pathway for early diagnosis of breast cancer.

Methods: Patients referred to the breast clinic undergo a quintuple assessment of physical examination, mammography (patients > 35 years) and ultrasound guided core biopsy and FNAC by the surgeon during the first visit. Details are entered in the BASO database for future data acquisition. Positive and suspicious lesions are discussed in the multidisciplinary meeting.

Results: Over a 4-year period (Jan 2000 to Dec 2003), 4366 cases were seen in this clinic. A total of 637 patients (15%) were diagnosed to have breast cancer, of which 630 patients had cancer identified during their initial quintuple assessment, or immediate follow up. Diagnosis of breast cancer was delayed only in two patients giving a diagnostic accuracy of 99.8%.During this period of study 5 other patients with benign disease subsequently developed breast cancer. These cases have been reviewed and the subsequent cancers were at different sites or in the opposite breast.

Conclusions: This study highlights that a diagnostic accuracy of more than 99% in detection of breast cancers can be achieved by a structured

clinic pathway as followed in our hospital. These results when compared are better than any other published series.

68 Poster
Rapid access breast clinics for the future

D.P. Toomey, R.A. Cahill, N. Birido, J. Rothwell, J.G. Geraghty. *Adelaide and Meath Hospital, Department of Surgery, Dublin, Ireland*

Introduction: While Rapid Assessment Breast Clinics (RABC) can capably diagnose patients symptomatic with breast cancer, they may be criticised on the basis of their resource requirements and cost-effectiveness, therefore, their effectiveness and ways to expand their utility should be investigated and made evident by analysis of performance statistics.

Methods: 1429 women attended our weekly symptomatic RABC over an eighteen month period and thereby underwent full clinical and radiological (breast mammogram +/− ultrasound) ± cytological (Fine Needle Aspiration, FNAC) assessment with risk factor profiling. Our customised, prospectively maintained database has been scrutinised to identify trends and determine future initiatives.

Results: Despite careful triage of referrals, considerable contamination of appointment allotment occurs with many individuals correctly triaged as non-urgent being seen within an "urgent" timeframe. Furthermore, 12.3% of all attenders had at consultation neither the symptom that triggered referral, nor breast lump or nipple discharge nor positive family history of breast cancer. However, of those attending without cancer, 143 had a significantly increased familial risk, which required tailored follow-up, identified that was separate to their reason for referral. Nonetheless 135 of 154 women (87.7%) diagnosed with breast cancer were seen urgently. Same-day triple assessment allowed most patients (92.9%) with cancer to be diagnosed at one attendance despite the fact that on examination 32 (20.8%) of these individuals had either no clinically palpable lump (n = 8, 5.2%) or a clinically benign lump (n = 24, 15.6%) while eight (5.2%) had a normal mammogram. Consultant pathologist input allows high definitive diagnostic accuracy with low FNA discordant and inadequacy rates (5.4% and 4.7% respectively).

Conclusion: With a standardised referral and consultant triage system, RABC reliably categorise malignant versus non-malignant diagnoses and is an efficient method of dealing with symptoms suspicious for cancer. However, the burden of assessing low risk patients without suspicious features and screening high-risk patients should be dealt with in a different forum as they can clutter RABC (expending resources that could be more efficiently utilized elsewhere) without adequately addressing the patients' needs.

69 Poster
Accuracy of breast MRI parametric images in the staging evaluation of pure ductal carcinoma in situ (DCIS)

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Purpose: Parametric breast MR images map quantitatively morphologic and physiologic properties of breast tumors. MES parametric images show areas that most rapidly enhance and are purportedly more specific for neoangiogenetic tumoral tissue. ME parametric images show the areas that enhance the most and are thus less specific. Our purpose was to assess the accuracy of breast MR in the study of ductal carcinoma in situ (DCIS) and to quantify the usefulness of maximum enhancement speed (MES) and maximum enhancement (ME) parametric images in the evaluation of 35 patients with biopsy-proven pure ductal carcinoma in situ (DCIS).

Methods and Materials: 35 patients aged 70 to 30 years (mean 54 years) with core biopsy proven pure DCIS (grades DIN 1c to DIN 3) underwent breast MRI prior to surgery. T1-weighted FLASH 3D pre- and post-contrast images were obtained. Morphologic and semi-quantitative analysis was done in all patients. Analysis of MES and ME parametric images was done with a dedicated software for breast MRI (K-View®, Dimensión Informática. Valencia. Spain). Maximum diameters (MD) were compared in breast MRI MES and ME parametric images exams and in the final histopathological exams and a Pearson correlation coefficient was obtained. When stratified by DCIS grade, 48.5% of the patients were DIN3, 11.4% were grade DIN2 and 40% of the patients were grade DIN1c. We also analysed the breast MRI patterns.

Results: Breast MRI did not show the disease in 3 patients (sensitivity for pure DCIS was 91.4%). MES parametric images were more accurate than ME images, with a Pearson correlation coefficient $r = 0.872$. Correlation coefficients stratified by grade were only significative in grade DIN3 cases for MES images ($r = 0.934$). Correlation stratified by MR pattern for MES images was only significative for the segmental multinodular pattern ($r = 0.902$).

Conclusion: MES images show with greater accuracy than standard ME images DCIS. Grade DIN3 tumors with a segmental multinodular pattern show the best correlation.

70   Poster
Evaluation of PET-CT for axillary lymph node staging in patients with early stage breast cancer

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The presence of axillary lymph node involvement is the most important prognostic factor in breast cancer. Positron emission tomography–computerized tomography (PET-CT) is a noninvasive imaging modality that can detect tumor at multiple sites in patients with breast cancer. The goal of this study was to evaluate the clinical usefulness of axillary lymph node staging by means of positron emission tomography with ^{18}F-fluorodeoxyglucose in detection of axillary lymph node status. This study includes 120 breast cancer patients and clinically negative axillary node. All patients had whole body PET-CT before sentinel lymph node biopsy. After sentinel lymph node biopsy, all patients underwent complete axillary lymph node dissection. Axillary lymph node dissections were evaluated by standard hematoxylin and eosin staining techniques, while sentinel nodes were also examined for micrometastatic disease. PET-CT detected all primary breast cancer. PET-CT compared with axillary lymph node dissection demonstrated sensitivity of 0.54, specificity 0.94, positive predictive value 0.92, negative predictive value 0.67, and accuracy 0.76. Twenty-five false negative cases were obtained. PET-CT compared with sentinel lymph node biopsy demonstrated sensitivity 0.56, specificity 0.88, positive predictive value 0.77, negative predictive value 0.74, and accuracy 0.75. False negative cases were six. Axillary lymph node staging using PET-CT is not valuable enough in clinically node-negative patients with breast cancer. The association of PET-CT and sentinel lymph node biopsy improves the sensitivity and specificity in the analysis of axillary staging.

Wednesday, 22 March 2006   16:00–16:45

POSTER SESSION
Epidemiology, prevention, follow-up, management and care

71   Poster
Increased risk of second primary cancers after in situ breast cancer: a comparison with invasive breast cancer

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Women previously diagnosed with malignant breast cancer have a twofold risk of second primary cancers. Incidence of breast carcinoma in situ (BCIS) has increased markedly with the introduction of screening. However, studies on risk of cancer after BCIS diagnosis are scarce. We examined the risk pattern of primary malignancies after BCIS and compared it to the risk pattern of primary malignancies after invasive breast cancer.

Method: A population-based longitudinal study was conducted using the Eindhoven cancer registry data on 20,804 breast cancer patients diagnosed in the period 1972–2002 and followed until 2003.

Results: Among 1261 BCIS patients, 11% developed second cancer. We observed an absolute excess of 88 cancers per 10,000 BCIS patients as compared to 63 excess cancers per 10,000 invasive breast tumors per year. A two-fold increase in the risk of second cancer was observed among patients diagnosed with BCIS (SIR [standardized incidence ratio]: 2.1, 95%CI: 1.7–2.5). Similarly, increased risk was found after invasive breast cancer(SIR: 2.4; 95% CI: 2.3–2.5). The most frequent cancers after BCIS were second breast cancer (SIR: 3.4; 95%CI: 2.6–4.3), skin (BCC & melanoma) (SIR: 1.7; 95%CI: 1.1–2.5) and colon cancer (SIR: 1.2; 95%CI:

0.4–2.5). The risks of second cancer were still increased after 20 years of follow-up. These findings resemble those observed for second cancer following invasive breast cancer. Furthermore, we examined the role of age, radiation treatment, subtypes of BCIS and period of diagnosis in the risk pattern of second cancer. Among BCIS patients, radiotherapy was associated with a (not significant) 50%-increased risk of second cancer. Furthermore, the increased risk of second cancer was independent of age at BCIS diagnosis. This is in contrast with results for invasive breast cancer patients, which younger age was a strong predictor of increased second cancer risk. Histological type of BCIS and period of diagnosis were not associated with the elevated risk of second cancer.

Conclusions: The risk pattern of second cancer after BCIS is similar to the risk pattern of second cancer after invasive breast cancer. Common risk factors (life-style or genetic predisposition) might be related to BCIS, invasive breast cancer, and subsequent malignancies. Breast cancer patients (invasive and in situ) may benefit from increased awareness aimed at improving early detection of second breast and skin cancer.

72   Poster
Diet behaviours and body constitution influenced the development of specific subgroups of breast cancer

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Background: The exact link between dietary behavior, body constitution and risk of breast cancer is ambiguous, potentially influenced by the fact that breast cancer is a multitude of diseases with different bases for transformation and consequently etiology.

Methods: 346 emerging breast cancers in a cohort of 17,035 women enrolled in the Malmö Diet and Cancer population study were subcategorized according to conventional pathology parameters (tumor type, grade and proliferation) and expression of key suppressor- and oncogenes involved in cell cycle control using tissue microarrays. Subcategories were then related to diet history information on dietary habits and objective body measurements determined several years before the breast cancer diagnosis. All statistical tests were two-sided.

Results: A smaller hip size and a lower BMI were associated with low grade tumors, whereas energy intake as well as total fat and fatty acid intake were inversely associated to tumor proliferation. Similar findings were observed for cyclin D1 overexpression whereas cyclin E overexpression was associated with a higher energy adjusted fat intake. Surprisingly, there was no association between estrogen receptor status and diet or body measurements.

Conclusion: Dietary behaviors and body constitution were clearly linked to the development of specific types of breast cancer defined by conventional pathology parameters or key cell cycle regulators. In general, a high energy, fat and polyunsaturated fatty acid intake, but a lower BMI, were linked to the development of low malignant breast cancer.

73   Poster
Sustainable models for multidisciplinary cancer care

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Multidisciplinary care (MDC) has been found to improve outcomes for patients with cancer. Its implementation is being incorporated into clinical practice guidelines and National cancer plans. However, published information about suggested models in different practice contexts is limited.

The National Breast Cancer Centre conducted a 3-year National Demonstration Project of Multidisciplinary Care, with a follow-up Sustainability Study, which investigated the process, impact, cost, acceptability and sustainability of implementing MDC in three multi-facility Australian collaborations.

Rather than a fixed model, the approach was to determine a set of key Principles for multidisciplinary care which formed the framework. The principle-based approach focused on: the team; communication between all relevant team members; equity of access to all relevant treatment options; treatment in accord with guidelines; and patient involvement.

Implementation was evaluated using a pre–post design involving clinical audit, consumer and clinician surveys, activity logs and reports, independent cost analysis and interviews with key collaboration representatives.

Outcomes included establishment of weekly treatment planning meetings attended by all core disciplines, with significant improvements in diagnostic practice (p = 0.011) and provision of routine psychosocial support (p < 0.0001). Clinicians reported improved care coordination, increased input from allied disciplines, flow-on effects and decreased personal stress.