

- (e) Ensure early recognition and referral of women with serious or ongoing psychiatric problems to appropriate health care professionals.

This presentation discusses the emerging specialty of the Breast Care Nurse in the Australian context.

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POSTER

Genetic counseling: The reality of the Italian associations against breast cancer

Lalla Monesi. *National Committee of Europa Donna-Italian Forum, Italy*

Purpose: Starting from the proposition that involving patients active action is very important, especially in the choices that influence their health, and considering the importance of giving them correct information where a genetic enquiry is recommended, we thought it was advisable to begin a cognitive genetic counseling research in agreement with all Italian associations belonging to the Italian Forum.

Methods: A telephone survey has been conducted in november 1997 with the aim of obtain a map of centers where people can find a genetic research and we also tried to make out if these genetic tests are required or not.

Results: The results are remarkable and similar in north, central and south Italy. During the Congress the data will be presented in detail.

Final Conclusions: The genetic diagnosis and all problems connected are not still perfectly known by associations but 85% of them hope to have the possibility, in the near future, of using genetic advisory bureaux.

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POSTER

New perspectives on screening, quality assurance and prevention

G. Freilich, M. Buchanan, M. Cope-Thompson, P. Goldberg, B. Strang, H. de Wolff. *For Europa Donna UK Forum, UK*

Europa Donna works politically and through education, in the fight against breast cancer. The UK Forum presented a public symposium wherein controversial topics were examined by leading breast cancer specialists and informed lay persons.

Screening & Quality Assurance: The UK National Screening Programme has brought about changes in breast cancer services. Rigorous standards of quality assurance in screening have spilled over into other methods of diagnosis and treatment modalities. BSE vs 'Breast Awareness' as screening techniques were compared by two breast surgeons and a patient advocate. The role of Nuclear Medicine and SestaMIBI Scintiscanning was shown to have particular value where conventional mammography is inconclusive. The question of simultaneous or delayed breast reconstruction was discussed in terms of quality of life and quality of surgical provision.

Prevention: Dietary influences on breast cancer remain controversial. However, studies have shown that while increased intake of alcohol and meat seem to increase risk, certain vegetables, fruit and vitamins have a protective effect. The results of further research are awaited. Controversies were aired surrounding research into the use of Tamoxifen as a prophylactic in healthy women. It was concluded that its use may be justified in certain subgroups of women.

This symposium established an ongoing annual dialogue between medical professionals and the lay public on what women understand, need and went in relation to breast cancer.

of Breast Disease. New techniques and developments must be balanced with their practical applications and constant analysis of current practice should also be made

Effective performance in this field will be influenced in part by Radiological Training and individual skill, also the techniques used, equipment parameters and even different manufacturers of similar equipment. Data from the UK Programme (NHSBSP) is used to illustrate this with regard to manufacturers, optical density, pre-operative diagnosis and detection rates.

Phantom scores for Mammography units demonstrate a range difference of up to 25% between manufacturers. Raising Optical Density significantly increases both Cancer detection and small Cancer detection rates. Improvements across the UK Programme between 1991 and 1996 are shown and 85% of all units are now within the accepted range.

Accuracy of pre-operative diagnosis affects anxiety, management and costs, and partially reflects radiological and cytopathological skills. 62% of screen detected Cancers in the UK receive cytological or histological confirmation of malignancy prior to surgery (target 70%). The increased use of Core Biopsy may help to improve this. Provisional data shows 7/43 programmes in the UK using Core Biopsy obtain false negative rates over 20% and it must be realised that there is a significant learning curve for both operator skills and optimal choice of technique.

The Standardised Detection ratio (Blanks et al) gives an indication of performance in terms of Cancer detection against a set standard. UK figures for this have risen in the past three years by 20% for the prevalent round but only 8% for the incident round. Reasons for this are discussed.

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ORAL

'Blind' review of interval breast cancers

J.M. de Rijke¹, L.J. Schouten¹, J.L. Schreuterkamp², I. Jochem³, A.L.M. Verbeek⁴. ¹Department of Cancer Registration and Epidemiology, Comprehensive Cancer Centre Limburg (IKL), Maastricht; ²Department of Radiology, DeWever Hospital, Heerlen; ³Foundation for Cancer Prevention and Screening Limburg, Maastricht; ⁴Department of Epidemiology, University of Nijmegen, The Netherlands

Purpose: The number of interval cancers in a mammographic screening programme can be seen as a quality indicator of the screening programme. Some of the interval cancers might have been detected at the screening, while others might be too small or radiographically occult. To investigate the proportion of the interval cancers that might have been detected, previous mammograms of interval cancers were reviewed 'blindly' by the screening radiologists.

Methods: The previous screening mammograms were used of 133 women, living in the IKL region and diagnosed with interval breast cancer in the years 1994-1995. 41 mammograms were not eligible. The mammograms of the remaining 92 cases were sent to two screening units (not the original screening unit) and mixed through the daily workload to be read by the two radiologists of both units. 47 mammograms of women without any signs of breast cancer were reviewed similarly. The dates of all the mammograms which were circulating were covered with tape to prevent recognition.

Results: After 15 weeks, 87 cases had been reviewed twice. Of these 87 cases, 14 (16%) had been referred twice for further investigation, 16 (18%) had been referred once and the majority, 57 (66%) had not been referred at all. During the three months of investigation, the average recall rate was 1.33, while this was 0.63 in 1995 and 0.84 in 1996.

Conclusion: About one third of the interval cancers might have been detected in the previous screening round. However, to be able to decrease this already small proportion of interval cancers that might have been detected, a higher recall rate has to be accepted.

Thursday, 1 October 1998

16:00-18:00

PARALLEL SESSION

Detection and diagnosis

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INVITED

Performance issues in detection and diagnosis

Nick Perry. *North Thames Breast Programme Quality Assurance Reference Centre, St Bartholomew's Hospital, 90 Bartholomew Close, London, EC1A 7BE, UK*

Optimising standards of Detection and Diagnosis reduces mortality and morbidity as well as assisting accurate, timely and cost-effective management

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ORAL

Colour and power Doppler in the differential diagnosis of breast tumours: Correlation with microvessel density and blood vessel counts

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Purpose: The purpose of the study is to evaluate if colour Doppler (CD) and power Doppler (PD) contributes to conventional ultrasound and to determine PD characteristics which may predict malignancy in breast masses. Correlation with histological vascularity was also assessed.

Methods: We prospectively examined 174 patients presenting with palpable or mammographic solid breast masses. The parameters documented

were: number of vessels seen on CD (vessel C) and PD (vessel P), vessel distribution (peripheral, central or penetrating) and morphology (tortuous, branching). The likely diagnosis after before and after evaluation with PD was also documented. 145 pathological sections were both examined for both microvessel density (using CD31 immunostaining) and vessels measuring 1 mm or larger.

Results: 183 masses were examined and diagnosis confirmed with needle biopsy. There were 117 cancers and 66 benign masses and/or surgery. PD demonstrated significantly more vessels than CD ($P < 0.001$). 33 lesions which were avascular on CD were shown to be vascular on PD; 19 of these were cancers showing more than 1 vessel and/or abnormal vessel morphology. PD also correctly altered the diagnosis from probably benign to malignant in 21 cases; 6 of these were smaller than 10 mm in size. The number of vessels seen on Doppler were significant predictors of malignancies but vessel P ($P < 0.001$) was a better predictor than vessel C ($P = 0.02$). The presence of vessels, tortuosity and branching vessels were all significantly associated with malignancy ($P < 0.001$). The most sensitive predictor of malignancy was peripheral vasculature (85.47%) but the most specific features were tortuosity and branching vessels (95.24% and 96.97% respectively). Regression analysis showed vessel tortuosity to be the best predictor of malignancy. A correlation between the number of large vessels identified by Doppler imaging and histology was found (periphery and centre: $p < 0.0001$ and $p = 0.0075$ respectively) with a greater number of large vessel groups seen at the periphery of malignant lesions compared to benign masses ($p = 0.0075$).

Conclusion: PD was superior to CD in the detection of vascularity and malignant lesions were significantly more vascular than benign lesions. Vessel morphology, in particular tortuosity, appear to be specific indicators of malignancy.

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ORAL

Preoperative identification of node negative axillary lymph nodes in breast cancer by highly significant electron beam computed tomography (EBC)

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Introduction: Axillary lymph node dissection (ALND) has been a standard procedure in the management of breast cancer, primarily performed for staging purposes to select different kinds of adjuvant systemic treatment. The main question remains, if it is necessary to perform ALND in increasing node negative cases under the background of increasing rates of very small carcinomas. We introduced a pilot study to evaluate the preoperative efficacy of EBC for detecting node negative/positive axillary lymph nodes.

Material and Methods: Between July 1997 and February 1998 we evaluated the efficacy of EBC (Siemens Evolution) in 63 pts. with different breast lesions. In all patients, mammography, sonography and immediately post-EBC-investigation high-speed or core biopsy with following final surgical treatment was performed. In 63 patients with until now surgical treated 37 breast cancer cases we evaluated the preoperative and later on histological confirmed lymph-node status. 37 patients represents a mean age of 59 years (range 36–88), mean tumor diameter of 31 mm (range 4–60 mm) and mean dissected nodal number of 16 (range 9–30).

Results: Preoperatively by EBC as nodal negative classified lymph nodes were true negative in 13 pts (100%), as nodal positive classified lymph nodes were true positive in 14 pts and false positive in 10 pts, no patient was false negative. It was possible to evaluate the size and the susceptibility of the lymph-nodes in EBC down to 2 mm, separated by axillary Level 1, 2 and 3 and by supraclavicular, intramammary and contralateral axillary lymph-nodes. Immunohistochemistry of the histological node negative pts. was performed to evaluate the evidence of micrometastasis.

Discussion and Conclusion: The EBC is easy to perform at all ages and tumor-stages without intraoperative time-consuming management. The high significance in node negative pts. is the most important point of view in the future decision whether to dissect or not the axillary lymph-nodes. The second point of view, belongs to the false positive rate. Most of the pts. show different suspect lymph-nodes with histologically confirmed different immunological reactions, but without metastasis. We don't know exactly the clinical relevance of these histological pictures and the suspected contralateral lymphnodes. However, further experience in this technique is needed to confirm this preliminary data.

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ORAL

^{99m}Tc-scintimammography in the diagnosis of non-palpable breast lesions in relation to the mammographical probabilities of malignancy and microcalcifications

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Aim: To evaluate the contribution of MIBI-Tc^{99m} scintimammography (SMM) to the diagnosis of non-palpable breast lesions (NPBL).

Methods: The study included 107 patients with a NPBL detected on mammography and a final diagnosis by biopsy. According to mammography they were classified as high probability (HP) of malignancy in 34, intermediate (IP) in 40, and low (LP) in 33. Of the 107, 37 showed microcalcifications (MCF) as mammographical pattern, 7 HP, 21 IP, 9 LP. The overall final diagnosis was 48 malignant and 59 benign.

Results: The overall sensitivity (S) for SMM was 94%. In the HP S was 93% and NPV 96%, in the IP S was 93% and NPV 93% and in the LP S and NPV were 100%. In the 37 with MCF overall S was 92%, and NPV 92%, and in IP and LP together S was 100% (7/7) and NPV (11/11). Additionally, in 11 cases of which 8 had carcinoma confirmed, SMM showed pathological uptake in the contralateral breast and in 1 bilateral carcinoma was proved.

Conclusion: SMM showed a high sensitivity for cancer detection in non-palpable breast lesions mammographically detected. The use of SMM in IP and LP groups would allow the reduction of 46% of the unnecessary biopsies of 39% in the LP group. In patients with MCF SMM would allow the reduction of 48% of the unnecessary biopsies in the IP and LP groups together with a S of 100%.

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ORAL

^{99m}Tc-MIBI scintimammography (SM) in 300 patients with breast masses: Correlation with tumor proliferative activity

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Purpose: This study evaluates the diagnostic yield of ^{99m}Tc-MIBI SM in 300 consecutive patients with breast masses on the basis of physical examination or mammogram. ^{99m}Tc-MIBI uptake was correlated to tumor size, receptor status, neovascularity, proliferating activity, P-170 glycoprotein expression and patient's gonadal state.

Methods: All patients underwent ^{99m}Tc-MIBI SM. Pathological status was obtained after surgery in all patients. All cancer specimens were evaluated for tumor type, size, grading, mitotic grade, labelling index and estrogen (ER) and progesterone (PgR) receptor status. In a subset of patients immunohistochemistry for P-170, PCNA, Her/2 and CD31 was also performed.

Results: Breast cancer was diagnosed in 218 (73%) patients. MIBI scan was positive in 89% cancer patients and in 17% of patients with benign masses (false positives). MIBI scan was negative in 24 (11%) of cancer patients (false negatives). Sensitivity of MIBI-SM was higher in tumor > 1 cm (95% vs. 48%) and in premenopausal women (95% vs. 85%). Conversely, specificity was better in lesion < 1 cm (100%) and in postmenopausal women (89%). Positive predictive value (PPV) of MIBI scan was good either in small (< 1 cm) and large tumors (93% and 100%) and slightly modified by gonadal state (89 and 96% in pre- and postmenopausal state). Negative predictive value (NPV) was not satisfactory, especially in small tumors and in older patients.

Conclusions: Diagnostic performances increased stratifying data for tumor size, indicating lesion size is a major determinant in diagnostic accuracy of MIBI SM. MIBI SM seems useful in the diagnostic evaluation of young patients as it can select patients for further, invasive diagnostic procedures (biopsy). In older patients, a positive MIBI scan is highly suggestive for malignancy and could represent an indication for surgery. In case of negative scan, biopsy is advisable given the poor NPV value. Small tumor size and well differentiated histotype characterize false negative cases.