routine mammography in symptomatic clinics for woman <50 yrs regardless of physical findings. Such a practice would also have a significant negative economic impact on existing limited resources. We therefore conclude that routine mammogramphy in symptomatic women found to have normal breast examination is not justified.

135 POSTER

Enhancing Mammography: Digital optical breast imaging for the early detection of breast cancer – The infra-red technology

W. Gatzemeier[1], M. Scelsi[2], K. Galetti[1], L. Villani[2], C. Tinterri[1], A. Costa[1]. *[1]The Maugeri Foundation, Division of SenologyPavia, Italy; [2]The Maugeri Foundation, Division of Pathology, Pavia, Italy*

Introduction: More than two thirds of all breast biopsies performed in the Western World for the early detection of breast cancer, due to suspicious mammographic findings, turn out to be benign and therefore unnecessary, creating a stressful, discomforting, and painful procedure for the patients and increasing medical costs for the community. Mammography as gold standard for the early detection has a low specificity and is therefore limited in their ability to differentiate between malignant and benign lesions. In addition mammograms in dense breasts, are difficult to interpret. Recent developments in technology make it possible to identify vascular changes associated with malignant growth. The dynamic optical breast imaging device (DOBI) applies these new imaging and processing technologies non- invasively to differentiate between malignant and benign lesions by the detection of neo-angiogenesis.

Patients and Methods: Between April and November 2003 a prospective study to further investigate this new prototype device was performed at our institution. Aim of the study was to evaluate whether unnecessary biopsy could be prevented using this technology. 100 patients (aged 25 to 77) scheduled for open biopsies (palpable and non palpable lesions) were entered into the study. All patients were scanned with the DOBI device preoperatively and findings were compared with those of the definite histology report and previous imaging.

Results: Preliminary results of the calculated sensitivity, specificity, and the negative predictive value of DOBI are highly promising.

Discussion: The concept of this diagnostic tool is provide information to guide biopsy recommendations. The results of our study demonstrated the ability of this new technology to discriminate non-invasively between benign and malignant lesion which may lead to avoid unnecessary interventions. Further studies are needed to support these data.

136 POSTER

Usefulness of multidetector-row computed tomography for the diagnosis of the intraductal extension of breast carcinoma

T. Fujita, Y. Ogasawara, F. Hara, D. Takabatake, H. Takahashi, S. Yoshitomi, Y. Ishibe, H. Doihara, N. Shimizu. *Okayama University Graduate school of Medicine and, Department of Cancer and Thoracic Surgery, Okayama, Japan*

Background: Intraductal extension of the lesion is one of the most important factor for the assessment of breast conserving surgery. The purpose of this study is to evaluate the clinical usefulness of multidetector-row CT (MD-CT) for the diagnosis of the intraductal extention of breast carcinoma.

Material and Methods: From 2002 to october 2003, consecutive 44 patients were enrolled in this study. We grouped the cases into three categories according to the degree of intraductal extension from the main tumor, diagnosed by MD-CT findings: intraductal component less than 10 mm, 10 mm to 20 mm, and more than 20 mm. To evaluate the accuracy for the detection of the lesion, the histological cross-sections were studied retrospectively, and we analyzed the relationship between the tumor size, histology, menopausal status of the patients and the degree of intraductal component.

Results: Forty-four breast lesions (100%) were detected by the MD-CT. About the degree of the intraductal component, significant correlation was found between the pathological finding and radiological categories. Especially, strong correlation was found at the pathological t2 tumor ($p<0.01$) and postmenopausal women ($p<0.01$).

Conclusions: Dynamic MD-CT finding of the breast carcinoma was found to be correlate to the histological degree of the intraductal extension of the lesion, and thought to be useful in the preoperative assessment of breast conserving surgery, especially for postmenopausal and t2 patients of breast carcinoma.

137 POSTER

DCIS after 11G directional vacuum assisted biopsy: underestimation of invasive breast cancer

M. Pizzamiglio[1], V. Fava[1], E. Cassano[1], F. Abbate[1], A. Bozzini[1], G. Renne[2], M. Bellomi[1]. *[1]Istituto Europeo di Oncologia, Dept. Radiology, Milan, Italy; [2]Istituto Europeo di Oncologia, Dept. Pathology, Milan, Italy*

Purpose: to determine if the accuracy of Mammotome® device in the diagnosis of DCIS is correlated with the diameter of the lesion and with the sampling rather than excision of the target.

Patients and methods: we retrospectively analysed 1819 US or stereotactic guided biopsies performed with 11 gauge Directional Vacuum Assisted Device (DVAD); in 287 cases of these the diagnosis was DCIS. All but 2 patients underwent surgical treatment. The rate of underestimation was correlated with the diameter of the lesions ($\leqslant$10 mm, 11–20 mm, 21–30 mm and >30 mm) and the entity of target removed (sampling or excision).

Results: Most of the lesions targeted were microcalcifications (95%). After surgery in 226 cases (79.3%) the diagnosis of DCIS was confirmed, while invasive cancer was found in 59 cases (20.7%). The underestimation rate was strictly related with the diameter of the lesion: 2.8%, 15.9%, 41.3%, 30.0% in $\leqslant$10 mm, 11–20 mm, 21–30 mm and >30 mm respectively. When the lesion was excised we observed only 2.9% (2/70 cases) of invasive cancer compared to 26% of underestimation in the remaining cases, in which the lesion was incompletely removed during the diagnostic procedure.

Conclusions: When the lesion is up to 10 mm or completely excised, DCIS is likely to be confirmed after surgery. As a consequence the diameter of the target and the entity of removal have to be specified in the radiological report.

138 POSTER

Extending quality assurance to all breast cancers

J. Walton[1], O. Kearins[2], G.M. Lawrence[2]. *[1]West Midlands Cancer Intelligence Unit, On Behalf of ABS at BASO, Birmingham, UK; [2]West Midlands Cancer Intelligence Unit, Birmingham, UK*

The Association of Breast Surgery at BASO (ABS at BASO) works with the NHS Breast Screening Programme to carry out an annual audit of the treatment of screen detected breast cancers in the United Kingdom. This audit has contributed to improvements in clinical practice because it is accepted as accurate and relevant by the clinicians themselves, who personally sign off their own data. It is a vision shared by many within the NHS that the national screening audit and quality assurance processes be extended to breast cancers in patients of all ages, not only the approximately 20% which are screen detected.

Currently, ABS at BASO carry out a symptomatic audit, but this audit does not achieve complete case ascertainment of all symptomatic breast cancers. For example, in the West Midlands health region, only 6 of the 20 breast units supplied data to the symptomatic audit for the financial year 2001/02.

The charity Breakthrough Breast Cancer, has funded a research project which aims to produce high quality outcome data which clinicians can trust on the detection and management of all breast cancers. The project will enable surgeons to supplement the treatment data that they are able to collect locally with the data routinely collected by regional cancer registries.

The first stage of the project was to pilot the process by matching surgeons' data with data held at the West Midlands Cancer Intelligence Unit (WMCIU), the population based cancer registry for the West Midlands health region. A cohort of 3877 breast cancers was diagnosed in 2001/02 of which 787 (20%) were screen detected and 538 (14%) were submitted to the 2001/02 symptomatic audit. The remaining 2552 symptomatic cases were not submitted to audit. 98% of the 3877 cases in the cohort could be assigned to a unique treating clinician. This demonstrates that data already submitted to the cancer registry could be used by clinicians to supplement their own audit data.

139 POSTER

Which is the real size? Radiological and histological size of tumours: a comparison in palpable and non-palpable breast lesions

Z. Egyed[1], Z. Péntek[1], J. Kulka[2], E. Svastics[3], J. Kas[3], Z. László[4], B. Járay[5]. *[1]Mamma Clinic, Budapest, Hungary [2]2nd Pathol. Ins. of Semmelweis Univ., Budapest, Hungary [3]MÁV Hosp., Surgical Dep., Budapest, Hungary; [4]St. János Hosp., Surgical Dep., Budapest, Hungary [5]2nd Ins. of Patol. of Semmelweis Univ, Budapest, Hungary*

Background: Breast conserving surgical approach requires precise preoperative diagnosis concerning the number of foci and the extent of

lesions. The preoperative measurement of lesions has special importance in cases of non-palpable tumours, in order to select appropriate cases for surgical biopsy of limited extent.

Materials and methods: 171 surgical biopsies of breast malignancy were analysed retospectively from the point of view of radiomorphology, radiological and histological tumour size, number of foci, and histopathology.

97 lesions were non-palpable excised by hook-wire localised, 74 palpable tumour did not need preoperative localisation. The size of the lesions measured by US and on the mammogram were compared with each other and with the histological size.

Results: In 59% of the 97 non-palpable cases and in 67% of the 74 palpable cases the radiological and histological size was equal, or the difference was less than 20%. In cases of in-situ carcinomas (29 cases), the radiological assessment of the size was more difficult. By the non-palpable in-situ cases (24) in the half of the DCIS cases the radiological and histological sizes was equal. In the remaining 50% the difference between the two measurements was more than 20%. In the palpable group were found only 5 in-situ cases, and only in one case proved equal radiological and histological size.

In the invasive carcinoma group the radiological measurement proved more accurate: in 61% of the non-palpable cases and in 71% of the palpable cases the radiological and histological measurements gave the same result, and in only 39%, and 29% was the difference over 20%.

Analysing the radiomorphology microcalcifications and parenchymas distorsions were those alterations by both of palpable, and nonpalpable lesions, where the radiological and histological size differed from each other significantly.

Conclusion: The preoperative measurement of tumour is important in order to orientate the surgical approach.

By the palpable lesions the measurement is more accurate than in case of non-palpable, and by the in-situ cases the measurement was not useful alone to plan the surgical biopsy.

However, in cases of microcalcifications or parenchymal distorsion, care must be taken to plan the excision on the basis of radiological size alone, in order to avoid insufficient surgical treatment.

140 POSTER

Breast ductoscopy with a 0.55 mm (1.83 F) endoscope as additional diagnostic tool for unclear cases of nipple discharge

V.R. Jacobs[1], M. Kiechle[1], H. Schaaf[2], S. Paepke[1]. [1]*Technical University Munich, Frauenklinik (OB/GYN), Munich, Germany;* [2]*PolyDiagnost GmbH, Pfaffenhofen, Germany*

Objective: Standard diagnostic tools to evaluate suspicious nipple discharge can only give indirect information about the source of the bleeding with is anticipated coming from a breast duct lesion. Microendoscopy with a breast ductoscope of only 0.55 mm (1.83 F) can offer visualization of the lesion and help in the decision to perform or avoid an exploratory breast tissue resection for histological evaluation. We discuss this new technique and its performance.

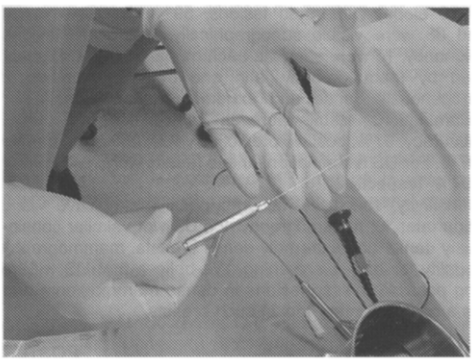

Fig. 1. LaDuScope® with 0.95 mm diameter.

Methods: We use a PolyDiagnost LaDuScope® with 0.55 or 0.95 mm outer diameter cannula and a working length of 75 mm. The optic has an outer diameter of 0.36 mm, a total length of 1200 mm, with 0° angle direct view, a field of vision of 70° and 3000 pixel resolution. Irrigation of breast duct is possible with a syringe as well as aspiration under visual control. The ductoscope is autoclavable and can be sterilized in gas or plasma sterilization. The procedure can be performed as ambulatory diagnostic procedure. The patient is awake; a slight dose of sedation eases pain and discomfort during dilatation of the mamillary duct.

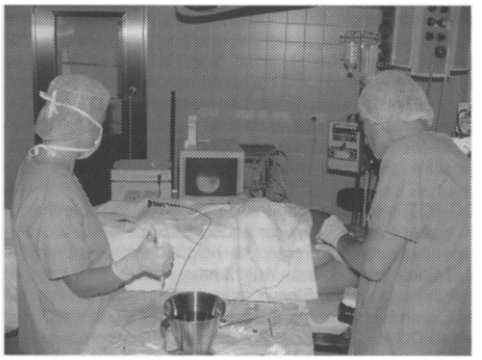

Fig. 2. OR setting for breast ductoscopy.

Results: After introduction of the ductoscope the breast ducts and walls can easily be inspected without discomfort for the patient. Instead of moving the scope rather the breast tissue is moved towards the direction of visual interest. The results of the ductoscopy can immediately be explained to the patient on the monitor, but the entire procedure is also recorded on a CD-ROM for further evaluation. The only limitation so far is that the picture on the monitor due to the resolution is rather small compared to standard endoscopy. We had no intra- or postoperative complication so far.

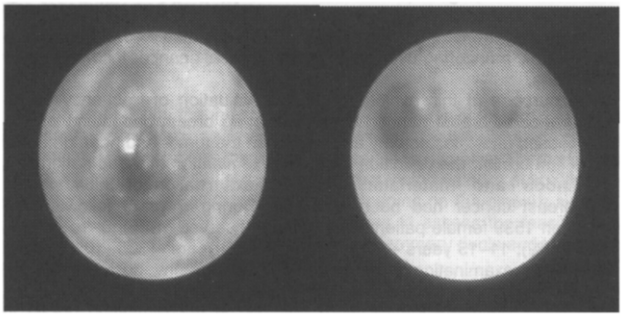

Fig. 3. Visualization of breast duct. Fig. 4. Breast duct bifurcation.

Conclusion: The procedure is safe and helpful as an additional ambulatory diagnostic tool to exclude obvious malignant causes for nipple discharge. Ductoscopy can delay or even avoid otherwise necessary operative breast tissue removal and is easily performed by an endoscopy-experienced physician. This instrument demonstrates the latest advances of technology and a trend towards a less invasive micro endoscopy of the breast ducts.

141 POSTER

Added value of [18F]-FDG-PET in staging breast cancer and detection of relapse

M. Landheer[1], M. Steffens[2], J. Klinkenbijl[1], W. Oyen[3]. [1]*Rijnstate Hospital Arnhem, Surgery, Arnhem, The Netherlands;* [2]*Rijnstate Hospital Arnhem, Urology, Arnhem, The Netherlands;* [3]*University Medical Centre Nijmegen, Nuclear Medicine, Nijmegen, The Netherlands*

Introduction: Staging of breast cancer consists is routinely performed by ultrasonography of the liver, chest X-ray and bone scanning. FDG-PET, an imaging modality utilizing the increased uptake of glucose by tumor cells, has proven to be a valuable tool in the staging and follow-up of a wide variety of malignancies. However, literature of the additional value of FDG-PET in breast cancer is limited.

The aim of the present study was to evaluate the role of FDG-PET in the staging of breast cancer and in the detection of loco-regional recurrence and distant metastases during follow-up.

Patients and methods: 45 patients were included in this prospective evaluation. Patients with either a suspected relapse of disease or with a primary breast cancer with a tumour positive top axillary lymph node were eligible for the study. All patients were subjected to conventional chest X-ray, ultrasonography of the abdomen, bone scintigraphy and if applicable X-ray mammography and/or ultrasonography of the breast. FDG-PET was performed in addition. In case of suspected abnormalities on FDG-PET,