

Of the 16 patients referred for PET study, 12 had abnormal uptake of 18-FDG in the region of the symptomatic plexus. 3 patients had normal PET studies and one had increased FDG uptake in the chest wall that accounted for her axillary pain. CT scans were performed in 7 of the 12 patients who had positive brachial plexus PET studies; 5 of these were either normal or showed no clear evidence of recurrent disease, while 2 CTs demonstrated brachial plexus involvement. Regarding 2 of the 3 patients with normal PET studies, one had complete resolution of symptoms untreated whilst the other had cervical disc herniation on Magnetic Resonance Imaging (MRI). The third patient almost certainly had radiation-induced BP and had normal CT, MRI and PET studies. These data suggest that 18-FDG-PET scanning is a sensitive and specific technique for evaluation of patients with suspected metastatic BP, particularly if other imaging studies are normal. It may also be useful in distinguishing between radiation-induced and metastatic BP.

PP-4-18 **Ultrasound-Guided Localisation of Impalpable Breast Lesions**

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Impalpable lesions detected by mammography require accurate localisation before excision biopsy. This retrospective study assesses the efficacy of ultrasound-guided localisation in terms of successful localisation of lesions and their adequate excision. Between March 1989 and February 1996 148 patients with impalpable lesions easily visible on ultrasound underwent ultrasound-guided localisation. Localisation was performed using an Aloka SSD 620 with a 7.5 MHz linear array probe. The depth of the lesion below the skin and its diameter was recorded. The mean age of the patients was 58.7 years (range 27.4–80.4). The mean maximum diameter of lesion localised at ultrasound was 11.2 mm (range 3–30), compared to mean histological size of 12.6 mm (range 4–33). The mean maximum diameter of tissue removed was 57.5 mm (range 10–110). 65 specimens were weighed. The mean weight of all specimens was 37 g (range 2–101). 99 of the 148 ultrasound-localised biopsies (67%) were malignant. Excision was complete in 87 (88%) of the 99 malignant cases. Five patients had further excisions and seven proceeded to mastectomy. Well-defined impalpable lesions have been successfully localised using ultrasound. The procedure is simple, convenient and non-invasive.

PP-4-19 **Imaging of Tumours in Breast Cancer Patients with the Estrogen Receptor Specific Radioligand Z-[I-123]MIVE**

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Objective This study investigates the potential of the putative I-123-labelled estrogen receptor (ER) ligand cis-11 β -methoxy-17 α -iodovinylestradiol (Z-[I-123]MIVE) for ER imaging in women with primary or metastatic breast cancer.

Patients and methods For 11 women with primary and 14 women with recurrent or metastatic breast cancer scintigraphy was performed at several time points (up to 24 h) after i.v. injection of 150 MBq Z-[I-123]MIVE. The tumour-to-background uptake ratios were calculated from the images by the regions of interest technique.

Results Low lung uptake and rapid hepato-biliary excretion allowed early imaging of the thoracic region. Analysis of the abdominal region was impeded by bowel excretion. In 21 patients focal Z-[I-123]MIVE accumulation was detected in primary tumours, local recurrences or metastases. The tumour-to-background ratios increased over time. At 4–6 h p.i. the ratios were for tumours in the breast 1.2 to 3.2, lungs e.g. 3.5, liver 3.2, lymph nodes 3.6, sternum 2.2, os ilium 3.7, os pubis 9.7, and recurrence 2.8. In 8 patients a second Z-[I-123]MIVE scan was performed 2–3 weeks after initiation of tamoxifen treatment. Except for two patients with early progressive disease, tumour uptake of Z-[I-123]MIVE was blocked completely by the anti-estrogen. This indicates that Z-[I-123]MIVE uptake is indeed ER-mediated.

Conclusion Z-[I-123]MIVE accumulates specifically in primary tumours, recurrences and all metastases (bone, liver, lung, brain, and lymph nodes) of breast cancer.

PP-4-20 **Nonpalpable Opacities on Mammograms: Histopathological-Mammographic Correlations of 304 Cases**

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Nonpalpable opacities of the breast are found more frequently with the increasing number of mammography performed for clinical or screening purposes. The specificity of mammography is not very high and 50 to 70% of non palpable opacities are finally benign. The purpose of this study is to determine the influence of epidemiologic (patient age, family and personal history) and mammographic patterns on the rate of malignancy in nonpalpable breast opacities. During a 6 years period, 1097 nonpalpable lesions were biopsied after needle localization. We have found 793 clustered microcalcifications (72%) and 304 opacities (28%). These opacities, ranging in size from 3 to 40 mm (mean: 15 mm), were associated with microcalcifications in 100 cases (33%). The histological diagnosis is malignant in 126 cases (42%): 12 carcinomas in situ and 114 infiltrating cancers. The proportion of cancers varied according to age (< 50 years: 36%, > 50 years: 47%), mammographic patterns (circumscribed opacities: 11%, asymmetric densities: 26%, architectural distortion: 30% and spiculated/stellate opacities: 89%). No cancers are found among well-defined borders opacities. There is no significant difference in relation to the size or to family history. The rate of malignancy is influenced by personal history of breast cancer and associated microcalcifications. The authors will also present histological results with a special emphasis on the cancers (histological type, size, grade, node involvement, treatment).

PP-4-21 **Evaluation of the European Pilot Project in Navarra; A High Breast Cancer Detection Rate in the First Round and a Low Rate in the Second Round**

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The running European pilot project for breast cancer screening in Navarra (Spain) is evaluated, and the effects and costs of a screening programme in the long term are predicted.

A MISCAN simulation model was used, including the demographical, epidemiological and screening characteristics of Navarra. Expected results from MISCAN are compared to observed results from Navarra.

The observed detection rate of 5.9 in the first round was 18% higher than expected, while in the second round the observed rate of 3.0 is 12% lower than expected. Longer preclinical durations, lower sensitivity or less variability in preclinical duration cannot explain the first and second round results together. The mortality reduction of a long term screening programme is expected to be between 15–20%.

The observed results of the first and second screening round in Navarra cannot be explained by the present assumptions on the natural course of breast cancer and characteristics of the screening programme assuming a constant sensitivity over rounds. Studies on the possibility of another natural course of breast cancer in this southern region and review of the first and second round screening results should give a final answer to this problem. Nevertheless, it is expected that the programme will have an important health benefit for the women involved.

PP-4-22 **Overweight and Hormone Receptor Positive Breast Carcinoma in Postmenopausal Women**

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In an attempt to know whether "obese" postmenopausal women have got more often estrogen or progesterone receptor (ER, PR) positive tumors than lean women, we studied ER and PR content according to body mass index of Quetelet (QI).

Between 1974 and 1990, 698 postmenopausal women (age range: 41–93, median age: 62) presented with operable breast carcinoma (T 4, N2 or 3, inflammatory signs excluded). Quetelet's index = (weight/height²) $\times 10^4$ of every woman was established at diagnosis. ER and PR content was measured by using biochemical ligand-binding assay (dextran coated charcoal assay) and later by enzyme immune assays. Breast cancer in women with overweight (363 with QI > 25%) was more often receptor positive (ER + or PR +) than tumor in lean women (p = 0.009). Overweight