

patients (75%) also were suspected to have the spread. Such false positive diagnosis by HRCT seemed to prefer to the schirrhous type breast cancer.

Since the HRCT imaging is well in accordance to the histological findings, the HRCT is thought to be a useful method for detecting the spread of breast cancer.

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POSTER

Accuracy of dynamic contrast-enhanced MR imaging in patients with indeterminate mammograms

M. Imbricco, A. Sodano, A. Riccardi, S. Del Vecchio, M. Panza, G. Limite, U. Pace, P. Forestieri, M. Petrella, G. Salvatore. *University "Federico II", Napoli, Biomorphological and Functional Sciences, Via Pansini 5 (Edificio 10) 1-80131 Naples, Italy*

Purpose: To assess the accuracy of Magnetic Resonance (MR) imaging in the detection of primary breast carcinoma in patients with indeterminate mammograms.

Methods: 39 patients (mean age 58 ± 7) with suspicious breast lesions newly discovered either by physical examination or by mammography were studied. There were 20 palpable and 19 non palpable lesions. Dynamic contrast-enhanced MRI was performed using a dedicated breast coil. 3D T1 weighted gradient echo images were obtained before and immediately after a fast hand injection of gadolinium-DTPA (0.1 mmol/kg). MR images were qualitatively and quantitatively analyzed on the basis of signal intensity increase after contrast administration. The results obtained were related to the final histopathological diagnosis.

Results: There were 22 primary breast carcinoma (16 ductal carcinomas, 3 lobular carcinomas, 2 tubular carcinomas and 1 apocrine carcinoma) and 17 benign lesions. MRI was true positive in 21 cases, true negative in 14, false positive in 3 and false negative in 1. The corresponding figures were: sensitivity 95%, specificity 82%, positive and negative predictive value of 82% and 87% respectively, with an overall accuracy of 90%.

Conclusions: Our preliminary results suggest that in patients with indeterminate mammograms, dynamic contrast-enhanced MRI accurately differentiate between benign and malignant lesions providing a valuable alternative for noninvasive characterization of breast masses.

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POSTER

MR imaging of the breast in patients with mammographically ill-defined breast cancer

Y. Sawai¹, C. Kuroda¹, T. Kasugai², H. Koyama³. ¹Department of Diagnostic Radiology; ²Department of Pathology; ³Department of Surgery, Osaka Medical Center for Cancer and Cardiovascular Diseases, Japan

Purpose: To evaluate the usefulness of preoperative magnetic resonance (MR) imaging of breast lesions that are mammographically difficult to determine their size, number or range.

Methods: Forty-eight patients with suspicious breast lesions which clinically and mammographically difficult to define their contour or range underwent 3-dimensional T1-weighted MR imaging with fat suppression on a 1.5-tesla system before and after dynamic contrast enhancement. Tumors were histopathologically mapped after resection.

Results: MR imaging could depict contrast enhanced lesion better contoured than mammography in 45 cases (93%). In 8 cases, tumor was only detected in MR imaging and mammographically find any sign of suspicious lesion. Horn-like or bridge-like enhanced area was corresponded with intraductal tumor spread in 13 cases. Multi focal contrasted area was suspected in 12 cases but 5 cases (42%) were histopathologically false positive.

Conclusion: MR imaging of the breast has value in the preoperative diagnosis of breast cancer to compensate conventional mammographic diagnosis and has impact in planning surgical management.

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POSTER

Detection by means of RT-PCR of micrometastases in the peripheral blood, bone marrow and leukapheresis products in women with breast cancer, selected for high-dose chemotherapy and peripheral blood progenitor cell transplantation

G. Merla¹, S. Papa¹, M. Aicita², A. Tartarone², R. Murgo³, D. Seripa¹, G. Di Giorgio⁴, G. Lelli², V.M. Fazio^{1,5}. ¹Laboratory for Molecular Oncology; ²Division of Oncology; ³Division of Surgery; ⁴Transfusional Service, IRCCS H. "Casa Sollievo della Sofferenza", San Giovanni Rotondo (FG); ⁵Molecular Pathology and Oncology, Università Campus BioMedico School of Medicine, Rome, Italy

Purpose: The present study was undertaken to evaluate the clinical significance of the RT-PCR assay for cytokeratin 19 (K19) when combined with other molecular markers for the detection of occult micrometastases in the bone marrow, peripheral blood and leukapheresis products, in patients with high-grade breast cancer, selected for high-dose chemotherapy and autologous peripheral blood progenitor transplantation.

Methods: 26 patients with III or IV breast cancer, eligible for high-dose chemotherapy (HDCT) and autologous leukapheresis product transplantation (LPT), were included in the study. Peripheral blood (PB) and bone marrow (BM) were obtained before treatment. An aliquot of each leukapheresis product (LP) collected for autologous transplantation was included in the analysis. When possible lymphnode specimens were obtained before chemotherapy. At different time points PB has been collected for follow-up analysis up 1 year. PB from 30 healthy blood donors and 10 patient with chronic and acute leukemias were included as controls. RT-PCR analysis was performed for cytokeratin 19 (K19), epidermal growth factor receptor (EGF-R) and crbB-2.

Results: First aim of the study was to assess the sensitivity and specificity of RT-PCR assays. RT-PCR detected with high reproducibility as low as 1 positive cell (human tumor cell lines) out of 10^7 normal cells (PBL). Primer pairs for primary and nested PCR amplification were designed for annealing with separated exons, to avoid genomic DNA or pseudogene contaminating amplification. No any false positive was identified among both control populations. K19 was detected in 30% of PB and 50% of BM preceding HDCT. 22% of LP, following HDCT and G-CSF mobilization of stem cells, was positive for K19. Results were compared with BM histology and RT-PCR for erbB-2 and EGF-R of PB, RM and LP. Positive samples were invariable fewer than that detected by K19 RT-PCR.

Conclusions: RT-PCR is a highly sensitive and specific method to detect breast cancer micrometastases in different samples. K19 RT-PCR showed the highest sensitivity, confirming results from other groups. The combined use of different molecular markers may increase the specificity of this approach for the detection of occult micrometastases in BM, PB and LP in patients undergoing HDCT and LPT, representing a useful prognostic marker.

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POSTER

^{99m}Tc-MIBI breast scintigraphy using a dedicated nuclear mammograph

A. Semperebene¹, F. de Notaristefani², A. Tofani¹, R. Sciuto¹, S. Rea¹, T. Malatesta², F. Frezza³, C. Botti³, P.G. Natali⁴, C.L. Maini¹. *Dpts of ¹Nuclear Medicine; ²Physics; ³Surgery; ⁴Immunology, "Regina Elena" Cancer Institute, Rome; National Institute of Nuclear Physics (INFN), Rome, Italy*

Purpose: This study was performed to evaluate a single photon emission mammograph (SPEM) prototype for breast scintigraphy using ^{99m}Tc-MIBI.

Methods: SPEM detector head is composed by a CsI (TI) scintillating array coupled to a Hamamatsu R3292 position sensitive photomultiplier tube with crossed-wire anode. The high resolution collimator is 35 mm thick with 1.7 mm hole diameter and 0.2 mm septal thickness. The electronic acquisition system is composed by 5 integrated cards with computation based on high speed programmable microprocessors. The readout electronics includes correction maps for on-line energy correction. The small size of the detector head allows the use of mechanical breast compression to minimize detection distance and tissue scatter. 29 patients with breast masses underwent mammoscintigraphy with SPEM and with an Anger camera using 740 MBq of ^{99m}Tc-MIBI.

Results: SPEM showed an intrinsic spatial resolution of 2 mm, an energy resolution of 23% FWHM at 140 keV, and spatial uniformities of 18% (integral) and 13.5% (differential). The SPEM imaged one 0.4 cm carcinoma missed by the Anger camera and resolved as 3 separate lumps a single

focal uptake on the Anger camera image. The remaining cases yielded concordant results.

Conclusion: The SPEM prototype presented in this study allows better resolution than ^{99m}Tc-MIBI mammoscintigraphy in a clinical setting at a fraction of the cost of conventional Anger cameras or of solid state prototype nuclear mammographs.

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POSTER

(¹¹¹Indium-DTPA-D-Phe) octreotide scintigraphy in the diagnostic assessment of palpable breast lumps

S.J. Parker, C.P.G. Barker, M.A. McLeod. *Departments of Surgery and Nuclear Medicine, Royal Hospital Haslar, Gosport, Hampshire, UK*

Purpose: (¹¹¹Indium-DTPA-D-Phe) octreotide scintigraphy has been used in the staging of breast cancer. The purpose of this study was to evaluate its role in the diagnostic assessment of palpable breast lumps.

Methods: Forty patients with breast lumps underwent clinical examination, breast imaging and FNA cytology. All patients had (¹¹¹Indium-DTPA-D-Phe) octreotide scintigraphy prior to excision or core biopsy. Patients with invasive cancers had WLE or mastectomy and axillary clearance.

Results: Thirty one lumps were benign and 9 malignant. The mean malignant tumour diameter was 2.4 (1.0) cms. Four patients with invasive cancer had nodal metastases. Eight positive octreotide scans were obtained but only 2 in patients with breast cancer. The sensitivity, specificity and positive predictive value of octreotide scintigraphy in the detection of breast cancer was 22%, 81%, 25%. The results were inferior to those of clinical assessment, radiological imaging and FNA cytology. No nodal uptake of isotope was seen. Four misleading scans were obtained with activity remote from the clinically palpable abnormality.

Conclusion: (¹¹¹Indium-DTPA-D-Phe) octreotide scintigraphy provides no additional diagnostic information to that already given by the triple assessment.

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POSTER

p43 expression on lymphocytes – A marker for early breast cancer in patients with nonpalpable mammographic finding

L. Auerbach, M. Hellan, M. Stierer, A.C. Rosen, C. Ausch, R. Obwegeser, E. Kubista, G. Wolf, H.R. Rosen, S. Panzer. *Department of Gynecology and Obstetrics, University Hospital Vienna, Austria*

Purpose: Placental isoferritin (p43), a protein with immunosuppressive effects, has been detected in breast cancer on the surface of lymphocytes. In this study we evaluated the sensitivity and specificity of the expression of p43-positive lymphocytes to serve as a marker in early stage breast cancer.

Methods: 76 women with controversial, non palpable mammographic finding, who had to undergo surgical biopsy, were investigated for the presence of p43-positive lymphocytes by use of the monoclonal antibody CM-H-9 and flow cytometry.

Results: Patients with early breast cancer (n = 48) revealed significantly higher values of p43-positive cells (median 3.83%, range 0.98–19.4) compared to patients with benign lumps (n = 28, median 1.43%, range 0.17–3.7, p < 0.0001). At the chosen cut-off level of 2% p43-positive cells leads to a sensitivity of 91.7% and a specificity of 89.3%.

Conclusion: Thus, the determination of p43-positive lymphocytes can serve as serological diagnostic tool in patient with controversial findings by mammography.

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POSTER

Breast metastasis as the first sign of a gastric adenocarcinoma

G.M. Baratelli. *Delegazione Alto Lario della Lega Italiana per la Lotta contro i T, Italy*

21 cases of gastric carcinoma metastatic to the breast are reported. In six cases a breast mass (synchronous metastasis) was the first sign of an occult gastric cancer.

Case Report: A 62 year old patient presented with a 3 cm. × 3 cm., firm, painless, mobile mass in the upper-outer quadrant of her right breast. Mammography showed a high density nodular lesion with smooth margins and without microcalcifications. FNAC suggested a diagnosis of primary breast carcinoma.

Lumpectomy and complete axillary dissection were performed. Patholog-

ical evaluation of the surgical specimen suggested the lesion was a gastric cancer metastasis. Axillary lymph nodes were uninvolved.

The patient had had no gastric symptoms, but gastroscopy discovered a fundic gastric carcinoma. Hepatic sonography, thoracic X-ray and bone scintigraphy were normal. Total gastrectomy and esophago-jejunosomy with Roux-en-Y anastomosis were performed. A stage G3 pT3 pN1 pM1 gastric carcinoma was identified. The patient recovered uneventfully and received postoperative chemotherapy (six courses of FAM). She is alive, without recurrence at 4 yrs.

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POSTER

Breast cancer care: Does the NHS discriminate against women living in deprived areas?

U. Macleod¹, S. Ross², C.J. Twelves³, C. Gillis⁴, G.C.M. Watt¹. ¹Health Services Research Unit, University of Aberdeen; ²CRC Department of Medical Oncology, University of Glasgow; ³Department of Public Health, University of Glasgow; ⁴Department of General Practice, University of Glasgow, UK

Introduction: This study describes and compares the balance of care received by women with breast cancer living in affluent and deprived areas to assess whether different patterns of care differ may explain the known poorer survival outcomes for deprived women.

Method: Case note review of the hospital and general practice records of women who were diagnosed with breast cancer in Greater Glasgow Health Board in 1992 and 1993, and who lived in Deprivation categories (Carstairs, Index) 1, 2 (least deprived, n = 157) and 6, 7 (most deprived, n = 264) at time of diagnosis.

Results: Deprivation did not affect the pathological prognostic factors at time of presentation with primary breast cancer. However, more women from deprived areas presented with locally advanced or metastatic disease (15.4% v 6.4%, X² = 7.42, p = 0.006). The time from GP's letter to clinic visit was shorter in women from affluent areas (affluent: median 6 days, Inter Quartile Range 1 to 14; deprived: median 7 days, IQR 4 to 20, Z = -2.89, p = 0.004), as was time to surgery from clinic visit (affluent: median 15 days, IQR 9 to 24; deprived: median 17 days, IQR 11 to 28, Z = -2.10, p = 0.036). After diagnosis women in deprived areas consulted their GPs more frequently than women in affluent areas (consulting >12 times per year: 27.0% v 15.9% X² = 12.67, p = 0.027). Admissions to hospital for problems not related to breast cancer were more common in those living in deprived areas (X² = 11.82, p = 0.003).

Conclusions: In this study, women living in deprived areas were more likely to present with large, advanced cancers than women from affluent areas, to wait longer to be seen at the clinic and longer for surgery. After diagnosis, more women in deprived areas continued to consult in excess of once a month in primary care and were more frequently admitted to hospital with conditions other than breast cancer. This study emphasises the need to address the issue of deprivation in relation to the delivery of optimum care for women with breast cancer.

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POSTER

Efficiency of cytology for breast cancer without the evidence of malignancy on imaging diagnosis

T. Koga, K. Suga, Y. Aoyama, H. Yanaga, T. Yahara, K. Shirouzu. *Department of Surgery, Kurume University, School of Medicine, Japan*

We report the efficiency of Cytology for Breast cancer showing no evidence of the malignancy on imaging diagnosis. Mammary cytological examination was performed on 2741 patients at Kurume University Hospital from 1992 to 1997. The accuracy of cyto-diagnosis was 93.7% for negative cases and 96.0% for positive cases. In addition, of 324 cases diagnosed as class III or over, 243 were confirmed to be breast cancer histologically, seventeen (7.3%) of these 243 breast cancers, which did not exhibit mammography and ultrasonographic findings of malignancy, but in which preoperative cytological examination suggested malignancy, were examined morphologically. 17 cases had 8 papilla-tubular carcinomas, 4 mucinous carcinomas, 2 scirrhous carcinomas, 1 solid-tubular carcinomas, 1 intracystic papillary carcinoma and 1 non-invasive ductal carcinoma. Eight of 17 cases were less than 1.0 cm in size, and 8 measured 1.1–1.5 cm. Characteristically, none of mucinous carcinomas less than 1.5 cm in size showed evidence of malignancy on imaging diagnosis.