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POSTER

Utility of 3D-dynamic magnetic resonance (MR) mammography for detecting the extent of primary tumor and axillary lymph node status of breast cancer patients

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Purpose: Magnetic resonance (MR) imaging has been often performed for the diagnosis of breast cancer, recently. In our hospital, this modality has been used for more than 200 patients with suspected breast tumor since June, 1996. The purpose of this study is to determine if MR imaging can be useful to predict the extent of primary tumor and axillary lymph node status in patients with breast cancer patients.

Methods: MR imaging was performed with a 1.5-T imager (SIGNA HORIZON, GE medical Systems), with the patient in the prone position. Pulse sequence was 3D-fast SPGR (spoiled gradient recalled) imaging with fat suppression and maximum intensity projection. 3D-dynamic study was performed immediately after intravenous bolus injection of Gd-DTPA against the primary breast tumor with a breast coil and axillary lymph nodes with a special coil for axilla.

Materials: More than 200 patients suspected breast tumor were performed 3D-MR mammography. About 50 patients diagnosed by operation were studied.

Results: The sensitivity, specificity, and accuracy of this modality were 96%, 84%, and 84%, respectively. 3D-MR imaging was useful for detecting the intraductal spread and satellite lesion of the primary breast tumor. On the other hand, it was difficult to separate the difference between vessels and lymph nodes, and between metastatic lymph nodes and inflammatory ones.

Conclusion: It seems to be very important to determine the extent of primary breast tumor and axillary lymph node status for performing breast conservative surgery.

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A pathway for a woman: Global approach to breast cancer

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Purpose: The project "a pathway for a woman" offers to women living in the Health District #46 of Naples, Italy (60,000 women) a global approach to breast cancer by means of prevention, early diagnosis, treatment, and rehabilitation. This is accomplished by: 1) information and awareness on prevention and screening 2) outcome patients service for early diagnosis, treatment, and follow-up, according to Istituto Nazionale Tumori di Naples 3) nurse's training for psycho-social rehabilitation of breast cancer pts. 4) physician's training to promote breast cancer prevention programs. 5) data collecting in the District's register

Methods: between January 95 and December 97, 6000 women have been visited: 93 had breast cancer diagnosis, due to the collaborative work of Health District, University and National Cancer Institute.

Results: no age-related significant differences were seen in the distribution of breast cancer in the sample population (45.3% of cancers were observed in <50 years women, and 41.9% in women 50-69 years). Early diagnosis was possible in 80.6% of cancers; 45.1% of these pts. received breast conserving therapy, and 54.8% had adjuvant chemotherapy. Overall remission rate is 85%; 9.7% of pts. is in progression.

Conclusions: our program aim was to facilitate the "women's pathway" to breast cancer diagnosis, reducing waiting time and improving quality of life according to preventive program of National Cancer Institute of Naples.

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In situ trap method for the histological examination of breast cancer (preliminary report)

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Purpose: There has been many reports till now concerning the telomerase activity of breast cancer which were the value of tissue extraction. But the localization and distribution of telomerase in cancerous tissues, the finding of telomerase activity in borderline lesion and so on are quite difficult to be detected using the ordinary method. So we report our success in the clinical

trial of checking the activities of telomerase for breast cancer using in situ TRAP method with fluorescent primer. (by Ohyasiki et. al.)

Material: The specimens consisted of 5 breast cancer cases and 1 fibroadenoma were frozen at -80°C preserving for using.

Method: In situ TRAP method with fluorescent primer were applied for cytology to check the activities of telomerase. The activities of telomerase were evaluated on slide glasses with primer through fluorescence microscope after PCR reaction. We compared these results with H.E. stain on continuous slices of specimens.

Result: The cells with positive telomerase activity were found local accumulation in breast cancer tissues. On the other hand, no positive telomerase activity was found in normal epithelium of ducts. Furthermore, of these 5 breast cancer cases, there were no difference of activities in histological types.

Conclusion: From our results in situ TRAP method was very effective for the detection of telomerase activities in the solid breast cancer which was preserved the histological structure as well as the advantage of detection in leukemia and Lymphoma.

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US guided fine needle aspiration biopsy of non palpable breast lesions

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Incidence of non palpable breast lesions has greatly increased in the last years in consequence of wide use of mammography and breast ultrasonography (US) in the screening of asymptomatic high risk women. It is often very difficult to spot these lesions during fine needle or surgical biopsies and so to confirm histologically malignant diagnosis of US and X-ray suspect lesions. The US guided or/and stereotactic needle preoperative location allows to detect and to localize accurately occult breast lesions when FNAB is uncertain: US technique seems to prefer because of its low cost and quickness. From January 1993 to December 1997 a total of 145 patients (age 25-77, mean age 54.5) underwent US guided FNAB for non palpable breast lesions. In 22 patients (15.2%) the specimens were inadequate and US guided needle localization using a 22 Gauge "Self-retaining Anchor Wire" with open biopsy was performed. This technique was also performed in the 21 patients (14.5%) with uncertain histological specimens. Success rate was 97.1%; missed lesions rate was 0.7%. 98 patients (67.6%) showed histopathologic benign changes; cancer was identified in 47 patients (32.4%); 34 were invasive carcinomas and 13 in situ. In conclusion US guided FNAB is an accurate and safe procedure to study non palpable breast lesions. In the uncertain cases we perform excisional biopsies with US guided needle localization, using stereotactic needle mammography only in cases of US-negativity (29.5% in our experience).

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Diagnostic significance of nipple discharge for detection of non-palpable breast cancer

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Nipple discharge is one of the important symptom in breast disease. Especially in the absence of a mass, nipple discharge is of significant for diagnosis. However, the definite diagnosis of non-palpable breast cancer was considered to be very difficult, because standard diagnostic method such as exfoliative cytology and ductography were not totally reliable.

The present study was undertaken to evaluate the diagnostic significance of CEA and NCC-ST-439 measurement in nipple discharge for detection of non-palpable breast cancer.

Materials: Among 192 patients with nipple discharge, 85 patients underwent microdochectomy between 1985 and 1997. Fifty three patients with palpable mass were served as control.

Methods: In addition to all mammary examination, CEA and NCC-ST-439 levels in nipple discharge were measured by the mean of enzyme immunoassay using monoclonal anti CEA or NCC-ST-439 antibody.

Results: The histologic diagnosis of 85 patients were carcinoma in 30 (35%), intraductal papilloma in 29 (34%) and other breast disease in 26 (31%). CEA and NCC-ST-439 levels in nipple discharge of breast cancer were significantly higher than those of other breast diseases. In the contribution assay of both CEA and NCC-ST-439, the sensitivity, specificity

and accuracy were calculated to be 87.0%, 81.8%, and 85.3%, respectively, when the cut off value of CEA and NCC-ST-439 levels in nipple discharge were set at 300 mg/ml and 1,000 U/ml, respectively.

Conclusion: A combination assay with CEA and NCC-ST-439 is thought to be useful adjunctive tool in the diagnosis of non-palpable breast cancer.

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Needle localization breast biopsy for nonpalpable breast lesions

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Background: The use of screening mammography resulted in higher detection rate of nonpalpable breast lesions and increased need for open needle localized breast biopsies (NLBB).

Materials and Methods: From January 1995 to June 1997 two hundred NLBB in Breast Unit at the Cancer Center in Warsaw were performed. A clustered microcalcification (46%), apiculated mass (28%), a new solid mass (17.5%), or an enlarging lesion on reexamination (11.5%) were considered suspicious mammographically and therefore warranted biopsy. Median patients age was 52 years. Over 50% of NLBB were performed under local anesthesia.

Results: Pathologic analysis of the 200 NLBB revealed 125 (62.2%) benign lesions. There were 75 breast cancers (37.5%) of which 50 were invasive carcinomas. Complications associated with NLBB consisted of 2 (1%) missed lesions and 2 (1%) abscesses.

Conclusions: NLBB can be performed using local anesthesia exclusively with only 1% chance of missed lesion and very small rate of other complications.

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Mammographic parenchymal patterns and breast histology

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The relation between mammographic appearance of breast parenchyma, and the risk of breast cancer is not well defined. There have been some studies based on the previous mammographic patterns of the breast carcinoma patients. We aimed to evaluate the relation between mammographic patterns and histopathological features of the breast tissue. So we performed tru-cut tissue biopsies to breasts with all types of mammographic patterns and compared the histopathological results.

Seventy patients who admitted with mastalgia were studied. Mammographic parenchymal patterns were evaluated according to the classification described by Wolfe, and the breast tissue specimens were evaluated and classified as described by Page and Dupont.

Mammography	Parenchymal histopathology					Total
	Nonproliferative	Mild EH	Mod. EH	SEH	AH	
DY	5	16	5	2	1	29
P ₂	10	1	1	—	—	12
P ₁	15	3	—	—	—	18
N ₁	11	—	—	—	—	11
Total	41	20	6	2	1	70

(EH): epithelial hyperplasia, Mod. EH: moderate epithelial hyperplasia, SEH: severe epithelial hyperplasia, AH: atypical hyperplasia)

A great correlation is found between the DY mammographic pattern and breast tissue with epithelial hyperplasia, which increases the breast cancer risk ($p < 0.01$).

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Stereotactic-guided biopsy of occult breast lesions

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Purpose: To analyze the accuracy of stereotactic coal injection and wire localization followed by excisional biopsy for suspicious breast lesions.

Methods: Forty-five patients underwent pre-biopsy stereotactic coal injection for suspicious mammographic images. Of these, 25 patients had also stereotactic wire localization. Microcalcifications were the most common indication to biopsy (58%). Localization was accomplished by means

of a dedicated stereotactic device using all fundamental spatial projections. Coal was injected through a 20 gauge needle. A hooked wire was inserted for deep lesions. Surgery was performed under local anaesthesia and in outpatient basis. Radiologic studies of the specimen were performed for each patient. The positive predictive value of mammography for carcinoma was calculated.

Results: Overall, radiologic studies of the specimen demonstrated a complete removal of the lesions in 44 patients (98%). In 1 patient with deep microcalcifications, localized only with coal, a partial excision was performed. The positive predictive value of mammography for cancer was 49%. Microcalcifications were associated with cancer in 10 patients (38%).

Conclusion: Preoperative stereotactic localization proved to be an effective and accurate procedure allowing a complete excision of the lesion in 98% of patients and a correct histologic diagnosis in all patients.

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Management of palpable asymmetrical thickening of the breast

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Purpose: Management protocols for a discrete palpable breast lump are standardised in most centres while the approach to an area of palpable asymmetrical thickening has seldom been addressed. The present study is a prospective evaluation of a diagnostic algorithm designed for women presented to the symptomatic breast clinic with asymmetrical thickening detected on physical examination.

Methods: The algorithm involves repeat physical examination and selective use of ultrasound with or without mammographic examination, followed by fine needle aspiration cytology for a mass lesion or core biopsy for cases with persistent thickening but with no mass lesion demonstrable on imaging.

Results: At the time of review, 111 Oriental women with a mean age of 39 years (range: 20–72 years) were included. Ninety-three women were premenopausal and 40 had associated mastalgia on the same side of the thickening. Most of the thickening was over the upper outer quadrant of the breast (63%). The thickening resolved spontaneously in 72% of women over a median period of 6 weeks (range: 2–52 weeks). In 7 cases, solid mass lesions were found on imaging. Two had benign fine needle aspirates while 5 were due to carcinoma. Nineteen women with negative imaging but with persistent thickening were subjected to core biopsy. Eighteen had histological features of benign breast change. The remaining one was shown to have carcinoma, making up a total of 5.4% of malignancy in the whole series.

Conclusion: Most palpable asymmetrical thickening of the breast is due to benign breast change which resolves spontaneously. On the other hand, primary breast cancer can present in the same way. A selective combination approach is probably the appropriate way to arrive at the diagnosis.

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Reduction of calcifications and breast cancer: Description of a case

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Purpose: Early diagnosis of breast cancer increases survival of patients, therefore it is very important to recognize early mammographic signs.

Methods: A mammographic screening program began in the city of Modena in 1995. After the first round 18.880 (71.4% of invited women) age group 50–69 years, were screened and 198 (1%) resulted affected by breast cancer.

Case: F.M., 60 years old, in 1996 the screening mammography diagnosed breast cancer. She made her first mammography in 1988 in which only one calcification of 1 mm of diameter was visible in left upper lateral quadrant. In 1992 the patient had a second mammography that documented reduction of the preceding calcification and the appearance of another microcalcification near the first one. In 1996 screening mammography showed a cluster of other microcalcifications with dense parenchymal background, in the area of the two previous microcalcifications.

Results: In our opinion, microcalcifications that are clustered with dense background parenchyma require more diagnostic exams. So, we decided to perform clinical examination and ultrasonography without, however, achieving diagnostic important notes. Stereotactic fine-needle aspiration was performed on microcalcifications that showed cytologically mammary dysplasia