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Diagnostic Multidisciplinary Meeting in a Breast Cancer Center – Is It Worth It?

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Introduction: A multidisciplinary assessment of breast morphological changes, combining clinical evaluation with imaging and pathology, is essential in establishing a correct and timely diagnosis. The aim of this review is to assess the accuracy of the decisions taken at the diagnostic multidisciplinary meeting (DMDM) during a six month period.

Materials and Methods: Retrospective analysis of prospectively collected data of all patients discussed at the DMDM between 1/10/2010 and 3/31/2011. We analyzed demographic, clinical and radiological characteristics of the lesions, as well as the decisions taken and the final outcome. The results were evaluated in terms of malignancy (positive=malignant, negative=benign). Patients who were discharged from the breast unit were considered to maintain unchanged lesions.

Results: We evaluated 273 patients, of whom 271 (99.3%) were female; the median age was 48 years (range: 19–91). 64% of patients were evaluated for a palpable nodule. Concerning the results obtained by cytology or by histology before the evaluation in the DMDM, 62.3% (n = 170) were considered benign, 33.3% (n=91) malignant and the remaining undetermined. In 42.1% of cases (n=115) the MDM proposed surgical excision and in 54.2% of cases (n=148) surveillance and clinical imaging of the lesion. In most cases (96.3%) the patient accepted the treatment plan, but in two cases the treatment plan was not met. It was not possible to assess the results of the DMDM decision regarding six of the evaluated cases. Of the remaining 267, there were no false negative results and there was only one false positive (0.4%). The decision taken by the DMDM meets a sensitivity of 100%, a negative predictive value of 100%, a specificity of 99.4%, a positive predictive value of 98.9% and an accuracy of 99.6%.

Conclusion: Our results validate the multidisciplinary decision-making process, in order to minimize the errors in the diagnosis of breast lesions.

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Is Repeating of the Contralateral Mammogram of Referred Patients From Breast Cancer Screening with Unilateral Suspicion of Malignancy Still Necessary? a Retrospective Study.

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Background: The Netherlands have a nationwide breast cancer screening program. Screening mammograms consist of bilateral two-view images of the breast. If indicated, patients are referred to a specialized breast center for further analysis, where mammograms are repeated bilaterally. Since the screening is digitalized, repeating of at least the mammogram of the non suspicious side seems unnecessary.

The aim of this study is to determine the additional value of repeating the contralateral mammogram.

Material and Methods: 395 patients were referred from the breast screening program to the Maastricht University Medical Center (MUMC) between October 2009 and August 2011 with unilateral suspicion of malignancy. In all patients a bilateral mammogram was repeated and analyzed by a dedicated breast-radiologist. If biopsy showed breast cancer, a breast MRI was performed for preoperative staging, according to the European Society of Breast Imaging (EUSOBI) guidelines.

A database of all these patients, with their radiology and pathology results, was made.

Results: Of the 395 patients, referred for unilateral suspicion of malignancy, 150 patients were diagnosed with malignancy on the referred side. In 5 patients a malignant lesion in the contralateral side was found as well (1.5%; patient 1–5). In 1 patient no malignancy was found on the referred side, though on the contralateral side a malignancy was diagnosed (0.3%; patient 6). Three of these 6 malignancies were detected with the repeat mammogram (50%; patient 2–4). The remaining 3 malignancies were diagnosed by preoperative breast MRI, just as the first three malignancies (100%; patient 1–6). In patient number five a breast MRI was made, although no malignancy was found with the mammogram, because the patient insisted to get a breast MRI.

Conclusion: Because preoperative breast MRI is standard care, according to the EUSOBI guidelines, in the preoperative staging in breast

cancer patients, repeating of the contralateral mammogram in referred patients with unilateral suspicion of malignancy, is not necessary.

Patient	MUMC mammogram		Breast MRI		Pathology	
	CM	RS	RS	NRS	RS	NRS
1	+	–	+	+	IDC (Ø1.5 cm)	IDC (Ø1.4 cm)
2	+	+	+	+	IDC (Ø1.1 cm)	IDC (Ø1.6 cm)
3	+	+	+	+	IDC (Ø1.9 cm)	DCIS (Ø2.3 cm)
4	+	+	+	+	IDC (Ø1.8 cm)	IDC (Ø1.0 cm)
5	–	–	+	+	TC (not known yet)	IDC (not known yet)
6	+	–	–	+	No malignancy	DCIS (Ø2.0 cm)

+: Suspect lesion, -: No lesion seen.

CM, Contralateral malignancy; RS, Referred side; NRS, Not referred side.

MUMC, Maastricht University Medical Center.

IDC, Infiltrating ductal carcinoma; DCIS, Ductal carcinoma in situ; TC, Tubular carcinoma.

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First Clinical Experience with a Dedicated PET for Hanging Breast Molecular Imaging

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Background: Although 18F-fluorodeoxyglucose (FDG) positron emission tomography (PET) with computed tomography (CT) seems useful for staging and detection of recurrences in breast cancer patients, it is not recommended for detection and/or classification of the primary tumor. Recently, a high-resolution dedicated PET system for hanging breast imaging (MAMMI PET) has been developed to improve primary tumor detection and characterization. The aim of this pilot study was to assess its feasibility for tumor detection and FDG uptake measurements in patients with stage II and III breast cancer.

Methods: 32 patients with invasive breast cancer (26 ductal, 4 lobular, 2 other), prior to and/or during neoadjuvant chemotherapy, underwent both conventional PET/CT and MAMMI PET in prone position with hanging breasts. Conventional PET/CT and MAMMI PET were performed 60±10 min and 110±10 min after injection of 180–240 MBq of FDG, respectively. Primary tumor detection was assessed and FDG uptake, expressed as maximum standardized uptake value (SUVmax), was calculated.

Results: Both MAMMI PET and conventional PET/CT visualized the primary tumor in 31 patients (97%). In 1 patient the primary tumor was occult on MAMMI PET as well as on conventional PET/CT and MRI. The mean distance from the tumor to the pectoral muscle was 26.4 mm (smallest distance 3.3 mm). Agreement in FDG uptake between PET/CT and MAMMI PET was high (r = 0.86, 95% CI 0.69–0.94). However, SUVmax as assessed with MAMMI PET was consistently higher than with PET/CT in all patients with an average ratio of 2.7. Differences in resolution, voxel size, and time between tracer administration and start of the scan might explain this difference.

Conclusion: The dedicated high-resolution breast PET with hanging breast technique is able to visualize approximately all breast tumors in stage II and III breast cancer patients, including tumors in the vicinity of the thoracic wall. This may enable its sequential use in the assessment of response in breast cancer patients receiving neoadjuvant systemic therapy, although SUVmax values are not directly comparable to standard PET/CT.

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Lipid Profiling of Benign and Cancerous Breast Tissues by 1H NMR Spectroscopy in Indian Females

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Background: High resolution NMR spectroscopy is an important tool being used to investigate biochemical alterations in tumors, notably at the level of lipid metabolism. No Indian study / data in this context exists till now. In this ongoing study we did qualitative and quantitative ¹H NMR analysis of lipid extracts of both benign and cancer breast (CaB) tissue to understand the differences between the metabolism of two and thus try to establish its utility as an diagnostic aid in early detection of malignancy.