27,0±1,92 millimètres, oreillette droite à I groupe 42.87±0.62, à II groupe 41.5±1.95 millimètres, pression de systolique dans l'artère pulmonaire a été à I groupe 39.94±1.12 mm Hg, à II groupe - 43.87±6.08 mm Hg, le diamètre de veine cave inférieure chez I groupe s'est égalé à 19.94±0.21, à II groupe 20.63±0.71 millimètres, la fréquence des contractions cardiaques chez I groupe a été 75.19±2.39, à II groupe - 62.87±1.85/min, paramètre E à I groupe s'est égalé à 0.73±0.03, à II groupe - 0.82±0.07 sec, moyen du paramètre A à I groupe a été 0.76±0.04, à II groupe - 0.75±0.30 sec, le rapport E/A à I groupe 1.05±0.07, à II groupe 1.17±0.14.

Conclusion: Échocardiographie offre une approche non-invasif et surtout précis pour détermination de la sévérité d'hypertension artérielle pulmonaire chez patients avec IP. Les manifestations échocardiographiques diffèrent parmi groupes étudiés.

THE ROLE OF MRI IN THE DIAGNOSIS OF BREAST PATHOLOGY

Radu Manoliu, dr. în medicină, prof.,
MRI Centrum Amsterdam, the Netherlands

Despite a continuing decline in the mortality over the last 10 yaers it remains the second leading cause of cancer deaths in Europe.

Over 40 to 75% of invasive cancers are invasive ductal carcinoma. These cancers represent a heterogeneous group of tumours that fail to exhibit sufficient morphological features to be classified into a specific histological group. In contrast to the old concept that invasive ductal carcinoma originates from the duct epitelium only, it is now widely accepted that the terminal duct-lobular unit should be regarded as the single site of origin for most breast carcinomas.

From 5-15% of invasive carcinomas represent invasive lobular carcinoma.These tumours are composed of cells that are individually dispersed or arranged in a single-file linear patern.In the usual type,the cells cause litlle host reaction or disturbance of the background arhitecture.Lobular carcinoma carries an elevated risk for a multicentric and bilateral breast cancer.It can be occult on mammagraphy.

Diverse cell proliferations,typically originating from the terminal duct-lobular unit and confined to the duct-lobular system are called intraductal proliferative lesions.Recent molecular studies have suggested that the classic opinion of succession in time from normal epithelium to hyperplasia,atypia and in-situ carcinoma may be wrong and that the relationshipship between these lesions may be much more complex.Lobular neoplasia refers to entire spectrum of atypical proliferations of small and loose cohesive cells in the terminal duct-lobular unit.The terms atypical lobular hyperplasia ALH and lobular carcinoma in situ LCIS have been used for these lesions They are considered as non-obligatory precursor lesions for either ductal or lobular invasive carcinoma.

Examination technique of breast MRI

The method is based on demostrating an abnormalconcentration of intravenously injected gandolinium DTPA on gradient-echo T1 weighted 3D pulse sequences.This high contrast enhancement reflects the tumour angiogenesis.

Commonly a T1W1 3D pulse sequence is perfomed before and then repeated 4 to 6 times after the intravenous injection of contrast.The majority of publications include in the examination protocol also T2W and STIR pulse sequences.Some authors include in the examination protocol also several delayed T1W1 acquisitions.The morphology is visualized on the plain acquisitions and subtractins of each post-contrast from the pre-contrast series.The contrast enhancement kinetics is displayed as a time-signal intensity curve in any region of interest.

Detailed high spatial resolution is an important prerequisite because some of the most powerful diagnostic criteria that are in use for differential diagnosis are based on lesion morphology-specifically,margins and internal architecture.In breast MR, however,acquisition speed and spatial resolution are diverging demands.Any increase in spatial resolution (e.g., an increase in the size of the acquisition matrix) is associated with an increase in acquisition time

MRI appearance of cancer

The MRI diagnosis of breast tumours is based on evaluation of lesion morphology and of enhancement kinetics following contrast agent administration.

Morphologic featur es that have been reported as suggestive of malignancy are a mass with irregular or speculated borders,inhomogeneous internal arhitecture, ductal pattern of non-mass lesions,rim- and "centripetal" enhacement.

Arhitectural features that are suggestive of a benign process are a mass with smooth or lobulated borders, without contrast enhancement. A patchy parenchymal enhancement or nonenhancing internal septa are also suggestive of a benign mass. For time intensity curve (TIC) analysis of the lesion, a ROI is placed manually in vital looking tumour, which is the area of fastest and strongest enhancement (early enhancement). The time intensity curve (TIC) analysis consists of plotting the signal intensity of the lesion over time. Malignant lesions tend to enhance earlier and to a greater degree than to benign lesions. This early steep enhancement is characteristically followed by a wash-out of the intensisity of enhancement.

Accuracy of MRI.

The most performed imaging technique for the breast remains the mammography. Several studies have reported that MR detects multifocal- multicentric carcinoma in up to 37 % of breast cancer patients. MR is more sensitive than mammography for the detection of multiple malignant foci, especially in fibroglandular or dense breasts.

Staging is performed using the pTNM classification. A definitive staging requires histological proof in view of the important choices between treatment strategies in the different stages of the disease. Even if it does not provide definitive data the radiology is essential for the detection of the primary tumour, diagnosis of local spread, detection of regional lymphatic spread and distant metastases. Radiology is the method of choice for the guiding of the diagnostic biopsies. MRI can guide the needle biopsy when the tumour is occult on mammography.

In local staging MRI of the breast is an emerging tool with high sensitivity and increased possibility to assess tumour grade, multicentric lesions and axillary lymph node status, as well as concomitant contralateral tumour. At present histopathological correlation with MRI is largely lacking, but it is to be expected that morphological classification of lesions might evolve with wide application of MRI.

Presently, the current indications for the of MRI are:

- screening of women at high risk (gene mutations BRCA 1 and 2 carriers);
- when diagnosis is inconclusive, even after standard work-up;
- evaluation of the post-operative patient when scar tissue cannot be differentiated from tumours;
- determination of local extent of disease in patients with known breast malignancy: multifocal disease;
- clinical suspicion of chest wall or pectoralis muscle invasion;
- occult primary breast cancer in patients presenting with axillary metastases and a negative mammograms or with bone metastases suspicious for primary breast;
- neo-adjuvant chemotherapy response;
- assessment of residual disease after a lumpectomy with positive margins and no evidence of residual disease on standard imaging;
- anytime lobular CA is defined;
- follow-up of breast implants.

Screening of asymptomatic women

Until this day, no methods have been found to decrease the incidence of breast cancer. Studies have demonstrated that early detection of breast cancer gives a better prognosis and a decrease of mortality. An early detection can be done by screening: finding by imaging lesions that are not palpable yet. Mammography is presently the primary screening tool for breast cancer. An important asset of mammography is its ability to visualize microcalcifications. 30% of breast cancers and 75% of the DCIS are detected by screening in an early stage due to the presence of microcalcifications. MR

imaging has shown to have a high sensitivity for detecting cancers. With MRI lesions can be seen that cannot be visualized by other imaging madalites.

However, specificity can be problematic and considerabil overlap exists because strong contrast enhancement can be seen in malignant and non-malignant lesions. MR gided needle localiyation can be performed, but the procedure requires experience and necessitates surgical biopsy.

MRI of the breast is the best method we have in the following situations:

- Local staging of invasive lobular carcinoma.
- Chest wall invasion.
- Ly,ph node metastases and occult tumour at clinical exam, mammography and echography.
- Screening in young women with dense breasts.
- Evaluation of neoadjuvant chemotherapy.

The main limitation of breast MRI is the fact that it cannot always distinguish between cancer and benign breast disease (such as fibro adenomas), leading to a false positive result.

Mammography, echography and MRI used in tandem provide the best sensitivity for the detection of local disease.

DIAGNOSTIC RADIOLOGIQUE DU CANCER DU SEIN

Natalia Rotaru[1], dr.h. în medicină,conf.univ., **Vasile Jovmir**[2], dr.h. în medicină, conf.univ.,
Iuvenalii Coşulinschi [2], medic, **Valera Stratilă,** medic,
USMF "N. Testemițanu"[1], IMSP "Institutul Oncologic"[2]

Le diagnostic radiologique du cancer du sein, mammographique et échographique, a pour but de mettre en évidence des lésions infra-cliniques. Ces lésions infra-centimétriques sont en effet de meilleur pronostic. La séméiologie mammographique des lésions suspectes comprend trois grands types d'images : les opacités arrondies de contours plus ou moins spiculés, les distorsions architecturales et images stellaires, et les foyers de microcalcifications. Enfin, elle permet de dépister un certain nombre de lésions non visibles en mammographies, notamment dans les seins denses (soit environ 3 ‰ des cancers dépistés) [1, 2, 3]. La réalisation de la mammographie se fera au mieux pendant les 10 premiers jours du cycle, afin de limiter les risques liés à une grossesse débutante, la douleur possible lors de la compression mammaire, et l'irradiation sur des seins plus radio-opaques en période d'imprégnation progestative plus forte [4]. L'échographie a pour but de mieux apprécier l'aspect d'une lésion (kystique ou tissulaire, critères de bénignité ou de malignité) ou sa taille. Elle augmenterait la sensibilité et la spécificité de la mammographie seule à plus de 90% [1,4]. L'IRM garde une place marginale dans le dépistage du cancer du sein (études en cours des jeunes femmes porteuses d'un gène de prédisposition au cancer du sein), alors que son intérêt est certain dans le bilan d'extension loco-régional des tumeurs du sein localement avancées, la recherche de lésions multiples, homolatérales ou controlatérales . La rareté des appareils ne permet cependant pas, actuellement, le développement en routine de ce type de bilan. Enfin, différentes techniques de prélèvements sous contrôle de l'imagerie se sont développées au cours des dernières années.

La réalisation d'au moins deux incidences par sein, la possibilité de comparer les clichés en miroir et aux examens antérieurs, les clichés complémentaires (localisés, agrandis, autre incidence) et l'échographie si nécessaire augmentent la précision diagnostique [10, 11, 12]. Onze à 25% de cancers sont « ratés » lors du dépistage mammographique, soit parce qu'ils ne sont pas détectés (mammographie de mauvaise qualité, lésion de petite taille, faible densité par rapport à la glande environnante, vus sur une seule incidence, distorsion architecturale minime, inexpérience du radiologue) soit parce qu'ils sont incorrectement classés comme bénins (sémiologie d'une opacité apparemment bénigne, calcifications non spécifiques, asymétrie de densité mammaire) [13, 14, 15, 16]. La double lecture permettrait de « rattraper » 10 à 25% des cancers ratés [17]. Les faux positifs, eux, semblent d'autant plus nombreux que le sein est dense (femme jeune, traitement њstrogénique de substitution) [18-