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Interview on Breast Imaging
Serbia / Prof. Dragana Bogdanović-Stojanović & Prof. Dragana Djilas

Breast imaging in Serbia

An interview with Prof. Dragana Bogdanović-Stojanović and Prof. Dragana Djilas, both from the Institute of Oncology in Vojvodina, Serbia.

European Society of Radiology: *Breast imaging is widely known for its role in the detection of breast cancer. Could you please briefly outline the advantages and disadvantages of the various modalities used in this regard?*
Dragana Bogdanović-Stojanović & Prof. Dragana Djilas: Breast imaging nowadays consists of various modalities that all have a certain role in the detection of breast cancer. The gold standard still remains mammographic examination, which can outline pathognomonic microcalcifications and masses present in the breast and axilla. Mammography is reserved for perimenopausal and postmenopausal women, due to the structure of the breast at that age. Nevertheless it can be performed in young, premenopausal women with the right clinical indication. The main disadvantages of mammography are the use of ionising radiation and poor ability to differentiate cystic from solid lesions. An ultrasound examination is usually performed in young women with glandular breast structure, with the great advantage that no ionising radiation is used. It can differentiate cystic from solid lesions but even the most powerful units cannot delineate microcalcifications reliably. Magnetic resonance mammography is used in limited indications. It has great sensitivity but somewhat low specificity in differentiating malignant from benign lesions. One of the additional disadvantages is its cost and availability. The most recent method is tomosynthesis – 3D mammography – that trespasses one of the greatest limitations of mammography – superposition of the structures.

ESR: *Early detection of breast cancer is the most important issue for reducing mortality, which is one reason for large-scale screening programmes. What kind of programmes are in place in your country and where do you see the advantages and possible disadvantages?*
DBS & DD: Based on data from the cancer registry of the Dr. Milan Jovanovic Batut Institute of Public Health of Serbia, the average standardised breast cancer incidence rate in Central Serbia in 2012 was 68.3/100,000 and the mortality rate was 20.2/100,000. It is the most common malignant tumour in women in Serbia. We have 4,000 new cases each year (4,417 cases in 2012). Annually 1,600 women die from breast cancer (1,663 women in 2012), accounting for about 18% of all cancer deaths. An organised breast cancer screening programme in Serbia was introduced at the end of 2012 in concordance with the Regulation on the Implementation of the Programme of Organized Breast Cancer Screening, based on the epidemiological situation.
The overall objective is to reduce mortality, while the specific objectives are: raising awareness about the importance of early detection and screening; strengthening the capacity of health institutions; ensuring sufficient availability of trained personnel and equipment; establishing a system of data collection and quality control services; and inclusion of local government and civil associations in the implementation of screening.
The first few years of the breast cancer screening programme in Serbia complied with quality assessment parameters recommended by the European guidelines. The main problem of this programme is that the coverage is too low. It is necessary to promote the invitation process, strengthen the capacity of health institutions in terms of ensuring sufficient number of trained personnel and equipment, establish a system of data collection and quality control service in order to achieve the main goal, reduce breast cancer mortality.

ESR: *Do you know how many women take part (percentage)? Do patients have to pay for this?*
DBS & DD: The target population are women aged 50 to 69, who are screened every two years. In the first cycle of screening (2013–2014) the target population in 19 municipalities was 397,033 women, and 128,697 (43%) were invited. Of those, 45,736 women had mammography, meaning there was 15% coverage of the target population. Compliance was 35%. Two mobile units, of which one worked only in Pančevo district in 2013, covered the entire target population of 99,853 women in 31 municipalities, of which 32,840 had mammography, meaning the coverage rate was 33%.
Analysing the complete data we can conclude that screening was carried out in 50 municipalities in Serbia. A total of 496,886 women were included, about half of the target population according to the census of 2011. A total of 162,741 were invited for screening; 78,576 had mammography, making the compliance rate 48%. A total of 290 new breast cancers were detected.
Organised screening is free for all women in Serbia. Costs are covered by the health fund. In parallel there is so-called opportunistic screening of breast cancer that occurs in private practice and is not part of the overall statistics.

ESR: *The most common method for breast examination is mammography. When detecting a possible malignancy, which steps are taken next? Are other modalities used for confirmation?*
DBS & DD: In many cases, mammography itself is enough to raise suspicion of the malignant nature of a lesion. Nevertheless, in every case of suspected malignancy, an ultrasound examination (which is cheaper, easier to perform and does not use radiation) is performed in order to better assess the lesion or simply localise the lesion for a core biopsy. In unclear cases and in the cases where there is obvious superposition of breast tissue, we perform additional tomosynthesis. In a limited number of cases, we perform MR mammography, to exclude multifocality and to assess the relationship of the lesion with surrounding structures. If imaging findings suggest malignancy, a core/vacuum assisted biopsy is performed at the shortest possible notice. After confirming the malignant nature of a lesion on pathohistology, the patient is referred to the preoperative breast tumour board, consisting of experts in the field (radiologist, surgeon, medical oncologist). This board makes the final decision on the therapy that will be administered (neoadjuvant chemotherapy, surgery, irradiation, hormone therapy).

ESR: *Diagnosing disease might be the best-known use of imaging, but how can imaging be employed in other stages of breast disease management?*
DBS & DD: Establishing the right diagnosis is the first and most important step in successful treatment, which cannot be achieved without proper imaging. Nevertheless, modern management of breast disease employs imaging in all the further steps: deciding on optimal treatment, marking the lesion for surgery, monitoring, and long-term follow up. Different methods of breast imaging have separate and connected roles in the management and monitoring of various breast diseases. Moreover, radiologists and imaging play the central role in establishing the right diagnosis, choosing the preferable option for treatment, and long-term follow up. In addition, imaging plays a role in marking the localisation of breast mass/disease for surgery, and in discovering and treating some possible surgical complications. In the follow up of benign disease of the breast, ultrasound is the method of choice, since it does not use ionising radiation. In monitoring of breast cancer, however, mammography is still the gold standard. Magnetic resonance mammography is an adjunct tool to breast ultrasound and mammography, having limited but very important indications (monitoring neoadjuvant chemotherapy, follow up of breast implants, discovering recurrent disease and so on).

ESR: *What should patients keep in mind before undergoing an imaging exam? Do patients undergoing radiological exams generally experience any discomfort?*
DBS & DD: Breast imaging exams in general do not require special preparation, other than simply coming to the breast centre in the hospital or consulting room. Depilation of the axillar region and avoidance of deodorants and talc is preferred, especially for mammography examinations. Breast ultrasound does not cause any discomfort; the patient lies on her back with her arms above her head and the examination is completely painless. In general, patients report slight discomfort during

mammographic exams due to the compression of the breast. However, this exam is not necessarily painful, and the patient should try to relax as much as possible to prevent pain. Magnetic resonance mammography is completely painless; the patient simply lies on her stomach in the MR unit.

ESR: *How do radiologists' interpretations help in reaching a diagnosis? What kind of safeguards help to avoid mistakes in image interpretation and ensure consistency?*
DBS & DD: As mentioned above, radiologists play the central role in establishing the right diagnosis. Symptomatic patients are usually referred to a breast imaging centre by a surgeon or gynaecologist. The radiologist can choose the best imaging method according to the patient's age and suspected disease. In the last decade, the Breast Imaging Reporting And Data System (BI-RADS) for interpreting the findings in breast examinations has been widely accepted. Using this system ensures consistency, since it means all the experts in the field 'speak the same language' (radiologists, surgeons, pathologists and medical oncologists).

ESR: *When detecting a malignancy, how is the patient usually informed and by whom?*
DBS & DD: When malignancy is suspected, the radiologist will perform a biopsy of the suspicious mass/lesion. After confirming malignancy on pathohistological examination, the radiologist will inform the patient about the findings and refer her to the breast preoperative board. It consists of a radiologist, a surgeon and a medical oncologist, who make the decision on the treatment option together.

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