



Breast imaging in Chile/Latin America

An interview with Prof. Miguel Angel Pinochet Tejos, who works at Clinica Alemana de Santiago, Chile, is Professor of the Faculty of Medicine of the Universidad del Desarrollo and President of the Colegio Interamericano de Radiología (CIR).

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?*

Miguel Angel Pinochet Tejos: Currently, mammography is still the most important technique when it comes to the early diagnosis of breast cancer. The technological advances of 2D and 3D digital mammography (tomosynthesis) have allowed an increase of sensitivity at the time of detection. The great disadvantage in Latin America is its implementation.

Ultrasound is highly accessible and used in daily medical practice. Its use in the region is very important in diagnosis as an auxiliary method to mammography. Magnetic resonance imaging (MRI) is very useful in the staging of diagnosed cancer, and its use is becoming more frequent every day. Additionally, it is a routine procedure performed on high risk patients. Its disadvantage is the high cost of the test itself and its accessibility in Latin America. The use of molecular imaging is very recent in the region.

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?*

Miguel Angel Pinochet Tejos: In Latin America, there are no screening programmes for the population as in Europe. The only programmes performed are opportunistic screening programmes, which can be found in Mexico, Brazil, and Ecuador. The biggest challenge is to raise awareness among governments for the implementation of screening programmes for the population.

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?*

Miguel Angel Pinochet Tejos: Once a possible malignant lesion has been detected with mammography, a crucial step is to perform an ultrasound study to define the lesion and locate any other associated findings. Then, a percutaneous biopsy (core biopsy, stereotactic biopsy) is performed to evaluate if it is cost-effective. Once breast cancer has been diagnosed, an MRI examination must be performed to stage the tumour, evaluate its size, extent, multicentricity, and bilaterality to apply the most effective treatment.

ESR: *Diagnosing disease might be the best-known use of imaging, but how can imaging be employed in other stages of breast disease management?*

Miguel Angel Pinochet Tejos: Nowadays, without a doubt, there are different types of breast imaging that assist us in handling other stages of the disease. In advanced tumours that require chemotherapy, MRI is the best choice for evaluating the *in vivo* response. In the future MRI should be implemented as a follow-up for breast cancer patients who have already been treated, to search for a high negative predictive value and to improve the patient's quality of life.

A breakthrough has been the use of MRI in patients who may develop the disease, such as women with high risk factors, given its higher sensitivity than mammography.

In elderly patients with cancer, who cannot undergo an operation and who do not respond to hormonal therapy, ultrasound can also help as a guide for radiofrequency ablation.

ESR: *How do radiologists' interpretations help in reaching a diagnosis? What kind of safeguards help to avoid mistakes in image interpretation and ensure consistency?*

Miguel Angel Pinochet Tejos: Radiologists must have continuous training for updates in the diagnosis and management of breast diseases. To avoid mistakes, the breast imaging radiologist must be specialised and very well trained. The work environment must be appropriate with the right amount of brightness, no disturbances and with high resolution workstations.

ESR: *When detecting a malignancy, how is the patient usually informed and by whom?*

Miguel Angel Pinochet Tejos: Generally in our environment, the radiologist is the one who informs the patient of the detection of a suspicious finding, raising the need for a biopsy which is required to accurately determine the nature of the lesion.

ESR: *How much interaction do you usually have with your patients? Could this be improved and, if yes, how?*

Miguel Angel Pinochet Tejos: Always, the most beautiful and important part of breast imaging is the interaction with patients. Contact usually occurs in ultrasound, and later during biopsies, and then when we let them know the histological results. We always make sure we treat patients with a very humane and personalised approach.

ESR: *How do you think breast imaging will evolve over the next decade and how will this change patient care? How involved are radiologists in these developments and what other physicians are involved in the process?*

Miguel Angel Pinochet Tejos: The future of breast imaging is in sight: a blood test that will let you select the group that needs breast imaging. Customised studies and therapies according to the molecular biology of the tumour will improve. Radiologists will continue to actively participate in research together with physicists, oncologists, pathologists, radiotherapists, surgeons, gynaecologists and all others on the multidisciplinary breast team.

Dr. Miguel Angel Pinochet Tejos is an Academic Radiologist subspecialised in Breast Imaging. He works at Clinica Alemana de Santiago, in Chile. He graduated from the Faculty of Medicine of Universidad de Chile where he also underwent his postgraduate radiology training. He has performed breast imaging studies at the UDIAT Diagnostic Centre, Barcelona. Currently he is Professor of the Faculty of Medicine of the Universidad del Desarrollo and of the Inter American College of Radiology (CIR). He has lectured as an expert in breast imaging in most Latin American countries. He has co-authored more than 40 peer-reviewed papers and over 90 conference abstracts and lectures. He holds a master's degree in Health Administration and Management.



Dr. Pinochet is an active member of the Sociedad Chilena de Radiología, Sociedad Iberoamericana de Imágenes Mamarias (SIBIM), and the Inter American College of Radiology (CIR). He has also been awarded an Honorary Membership by the Spanish Society of Breast Imaging (SEDIM).

Dr. Pinochet has been President of the Sociedad Chilena de Radiología and of the Sociedad Iberoamericana de Imágenes Mamarias (SIBIM). In September 2016, he became President of the Colegio Interamericano de Radiología (CIR).