Improving quality and safety in mammography: Hospital Italiano of Buenos Aires experience

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Background/introduction

Mammography is the gold standard to detect breast cancer at an early stage and, when followed up with appropriate diagnosis and treatment, reduces mortality from breast cancer.

However, as a diagnostic method, it presents problems inherent to image quality, perhaps greater than those of other radiological technologies, if it is expected to fulfill its purpose properly. This is a study that delivers doses of the order of 4.5 mGy in digital equipment and that many women repeat annually.

The positioning, the compression during the study and the particularly kind attention towards the patient are other elements that take relevance during this study.

All these circumstances imply a careful work of the personnel of the Mammography Service, where at the same time quality in the treatment, in the technique and in the image is looked for.

During 2001, at the conference in Malaga, a serious abordage on one of the biggest cause of the failures in Radiation Protection of the patient, the public and the worker, namely the culture of safety was attended.

During a new meeting in the city of Bonn, Germany, in 2012, 10 priority elements identified as actions were identified for the improvement of Radiation Protection in Medicine (RPM) and were endorsed by the International Atomic Energy Agency (IAEA) and the World Health Organization (WHO).

This fact was known as Bonn calls for action [1].

Among the actions enounced the most directly linked to mammography were:

Action 2. Enhance the implementation of the principle of optimization of protection and safety

Action 4. Strengthen radiation protection education and training of health professionals

Action 8. Strengthen radiation safety culture in health care

Action 9. Foster an improved radiation benefit-risk-dialogue

In turn, a new Call to Action 2018 this time enounced by EuroSafe Imaging based on the first Call to Action issued in 2014 reforced the Bonn Call to Action.

By implementing 13 actions, EuroSafe Imaging in turn contributed significantly to the achievement of the objectives in the quality and radiation protection.
Description of activity and work performed

In the Mammography Department, in the Hospital Italiano of Buenos Aires during the EroSafe Imaging accreditation plan we made especial emphasis in the three EuroSafe Action mentioned below.

Action 2 - Develop clinical diagnostic reference levels (DRLs) for adults and children

Action 3 - Develop image quality assessment based on clinical indications

Action 6 - Implement a clinical audit tool for imaging to improve the quality of patient care

With the advance of medical technology in the use of ionizing radiation, the need to contemplate the safety of its use made important that this concept emerges from spontaneous, non-obligatory acts.

The Quality Control, the Image Quality and doses control are conducts that in a Mammography Service must be a permanent guideline and if they are achieved in a spontaneous way all actions 2, 3 and 4 will be fulfill.

The chance of a successful implementing a quality and radiological protection plan in a Hospital such as the Italian Hospital, due to its importance, technological complexity and number of workers, must always arise from the vision of the heads.

In this case, this idea came from the Diagnostic Imaging Service and from there it was decided to hire two medical physicists with the idea of taking the first steps in the accreditation of the Hospital through EuroSafe Imaging.

This task involved the creation of a task force in the Service that included the participation of the Service Head and a physician with a great experience in quality and safety issues, in charge of coordination. An interdisciplinary group was established too, that collaborated in the development of all the requirements of EuroSafe Imaging.

Once this step was taken, all hospital services combined their efforts and a Radiation Protection Committee was formed in the Hospital, which with the support of all the parties led the re-accreditation of the Italian Hospital by the Joint Commission.

Protection of the patient of the Italian Hospital, fulfilling the needs of the mammographic technique

Within the protocols established for the quality control of the equipment, doses and image quality were given priority. These controls were carried out based on the IAEA Quality Control guide for digital mammographers.
Dosimetry was evaluated for studies on a standard breast (50/50) and it was verified that the doses delivered by the team were embed within the allowed error mentioned in the literature.

A specific training plan for mammography technicians was completed in three turns.

Radiological techniques were incorporated into the general course on radiological protection taught in 5 classes of 3 shifts each.

Informative material was written for the community in order to clear up fears about thyroid cancer and mammography doses, which also served as a support to the staff to patient communication.

This material is found in the hospital's internal network and is freely available to patients.

The main radiological protocols were drafted to deal with the special cases that the automatic mode of the equipment does not cover.

To guarantee the quality of the mammograms, the procedures, protocols and policies that cover the following aspects were documented in writing: requirements of the facilities and personnel; roles and responsibilities of the staff; reception of patients, collection of information about the patient and maintenance of confidentiality; obtaining identification and quality of images; quality control of the equipment; maintenance of equipment; radiation dose; maintenance of records; information and notification of the results, and audits of the service.

Since it is a quality system, the verification of all the elements and permanent audits ensure the continuity of this standard.

The SWOT analysis (strengths, opportunities, weaknesses and threats) is a tool that allows an analysis of the feasibility of a project and to draw up an action plan to carry it out, by studying the external and internal environment of the project.

The external environment refers to situations in the surrounding environment that may influence some part of the project, manifesting itself as opportunities and threats. The internal environment alludes to the qualities of the project that can favor their undertaking or take advantage of an opportunity, as well as their weaknesses, which can turn a situation into a possible threat.

To have a clearer vision of the project, the qualities of the external and internal environments have been organized in the following table 1.
Fig. 1: The SWOT analysis (strengths, opportunities, weaknesses and threats) is a tool that allows an analysis of the feasibility of a project and to draw up an action plan to carry it out, by studying the external and internal environment of the project.

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Fig. 2: Breast radiology team and our website.

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Conclusion and recommendations

The culture of quality and the culture of security are always not easy to inculcate and maintained in all cases.

This task that began in the Italian Hospital with accreditation with the Joint Commission and now with EuroSafe Imaging and reaccreditation of the Joint has the sustainability for to be maintained over time and has the improvement plans that a quality system requires.
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