New perspectives on radiology teaching

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Education in radiology and radiodiagnosis has been undergoing significant changes in the last years, considering the continuous development of this method and also the remarkable increase in the number of applications[1]. The different modalities of imaging diagnosis, including conventional radiology, tomography, ultrasonography, magnetic resonance imaging, mammography, PET/CT, bone densitometry, and nuclear medicine, besides cardiological applications, have been intensively utilized in medicine as a whole[2].

In Brazil, according to data from Colégio Brasileiro de Radiologia e Diagnóstico por Imagem (Brazilian College of Radiology and Imaging Diagnosis), there are 44 institutions qualified to prepare professionals at the medical residency level in the area of imaging diagnosis[2]. The evaluation and certification of these institutions is based on a series of criteria such as qualification of the teaching staff (master degree, doctorate, and post-doctorate), availability of operational radiological equipment, access to a radiological service with a reasonable number of patients, and clinical/hospital reference[2].

The interest in this specialty remains high[3], despite the changes observed in the market with the excessive proliferation of radiological clinics and services, multiplication of subspecialties and subcontracting of medical professionals with reduced fees. Additionally, the difficulty in entering the supplementary health system which on its turn underpays the Ancillary Service of Diagnosis and Therapy (SADT), including the area of imaging diagnosis, frequently not reaching the values established by the Associação Médica Brasileira (Brazilian Medical Association) by means of the Brazilian Hierarchical Classification of Medical Procedures (CBHPM)[4].

This aspect is essential for motivating medicine graduates to choose the area of imaging diagnosis for specialization, residency, or post-graduation which may open the door to the labor market in the field of radiology[5].

The training of radiology practitioners has undergone significant changes in the last years, with the increase in the number of institutions offering residency programs as well as in the number of subspecialties and specifications, with a correspondent increase in the work load for residency and post-graduation, increase in the academics' interest in radiology, as well as the interest of residents in more advanced areas of imaging diagnosis such as magnetic resonance imaging and computed tomography, besides the utilization of images during classes in other areas of medical study covering anatomy, neurology, urology and other specialties[6].

Additionally, an increase is observed in the number of non-academic courses offering education in specific areas such as echography, computed tomography; magnetic resonance imaging, also related to an increase in the interest of professionals from other areas in the field of imaging diagnosis.

These and other aspects of the segment should be taken into consideration in the analysis of the prospects for education in radiology, and in the way how academic structures should change to adapt themselves to this new reality. Another essential issue to be taken into consideration is how to deal with "paracademic" courses which sometimes offer a deficient professional education.

In our opinion, priority must be given to the quality of education. This only can be achieved with massive investments in research, enlargement of published studies database and development of a consistent critical mass in terms of scientific publications in the sector.

Other relevant aspects to be considered are the education decentralization and regionalization. Most of times, the high cost of equipment implies the concentration of education centers in major cities. It is necessary to implement a strategy to decentralize the education in radiology allowing a hierarchicalization —

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systems with more sophisticated equipment and higher number of professionals in smaller centers as a referential.

Another aspect to be taken into consideration is the focusing of studies on regional aspects. Each institution or educational center should establish the aspects related to the local community reality as a prioritary target of their researches. It seems to be obvious, but, many times, significant resources are unnecessarily spent by small- and medium-sized centers attempting to accomplish studies already developed in large centers, when these resources could otherwise be applied in researches related to their very own reality.

It is essential to emphasize both didactic and practical activities related to the education in radiology, such as case discussion meetings and straightforward training with different devices in a balanced schedule, offering the trainees the opportunity to fully develop their abilities.

And, finally, the reasonable utilization of technological resources for education, with training in information technology, utilization of internet, softwares and systems of teleradiology allowing the dissemination of knowledge in this area, professionals updating and continuous interchange of information among the different institutions.

As regards "paracademic" courses, some kind of gradual intervention is required from the part of the regulatory institutions. These courses exist as a result of a necessity of professionals updating and improvement, besides a certain facilitation of the certification through these courses.

Therefore a genuine interest in the regulation of this area should lead to the regulatory authority intervention not only in the schools — by means of the elaboration of criteria and eventual certification of the good courses —, but also to the normatization of the acceptance of certificates issued by these institutions by the supplementary health systems and also in the examinations required for applicants to the title.

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