Editorial

The training and practice of radiology in India: current trends

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Radiology is one of the most sought after specialties in medicine and it is the first choice of many top-rankers in India for almost a decade. This is for the reason that diagnostics have become an integral part of most patients' work-up due to existing practice of evidence-based medicine. More importantly, rapid advancements in imaging have further increased its demand.

There are almost 268 medical schools across the country that run radiology courses and out of 35,000 total medical students, approximately 747 get to do 3-year postgraduate training in radiology every year, out of which 537 seats are under Medical council of India (MCI) and 210 seats under National board of examinations [Diplomate of National board (DNB)], which are two medical governing bodies in India (1). In addition, there are about 253 2-year diploma course seats known as Diploma in Medical Radio-Diagnosis (DMRD), in which candidates are not given any research thesis and these candidates are not eligible for teaching posts. This selection is based on the various postgraduate entrance examinations conducted at both all-India and state level. The living cost for the trainees is managed by the residents themselves, however, at most of the Government medical colleges, charges for accommodation and food are very much subsidized by the State. Nevertheless, there are few institutes which offer paid seats to students charging huge amount of money.

The radiology residency training program is of 3-year duration and residents are imparted training in both conventional radiology and modern imaging techniques to make them well versed with broad discipline of radiology including ultrasonography, color Doppler, computed tomography and magnetic resonance imaging. There is a change in the training focus in majority of the institutes in the last few years to keep pace with the new developments in imaging. Currently, premiere institutes also provide experience in vascular and non-vascular interventional radiology to trainees.

Candidates are assigned a dissertation on a particular topic in radiology under the supervision of an experienced and eligible teacher, on which they work on and submit it to university at the end of two and a half years. Moreover, students are assessed periodically every 6 months (may vary in certain institutes) by a local appraiser with both theory and practical exams for the syllabus covered during the period. Furthermore, pupils need to maintain a logbook with remarks from the supervisors. The logbook should mention about number and details of the radiological procedures done and assisted, lectures attended various presentations by the student. Various academic activities like seminars, journal clubs and case discussions are regularly conducted in the departments as a part of teaching curriculum. The final examination is divided into four theory papers (related to radiation physics and various body systems) and practical test (consists of long & short cases, spot diagnosis of images and viva). There is no limitation on maximum number of attempts to clear the exam. The details of the logbook, syllabus and curriculum can be accessed from the following links: http://www.natboard.edu.in/notice_for_dnb_candidates/radio.pdf and http://www.bfuhs.ac.in/Examination/Syllabus/Radio-diagnosis.pdf and many other websites of individual medical schools.

The goal of the training is to develop a competent, safe and logical radiologist who can conduct and interpret various diagnostic and interventional imaging studies and is also able to pursue teaching and research activities, while following medical ethics and consumer protection act.

The first medical degree in India is Bachelor of Medicine and Bachelor of Surgery (MBBS), while the postgraduate degree given by schools under MCI is Doctor of medicine (MD) and by NBE is DNB. Both are considered almost equivalent now, unlike few years back when DNB passed candidates were not considered eligible for teaching posts in MCI recognized universities without further teaching experience, as many hospitals running DNB courses were small private hospitals or diagnostic centers, where facilities for teaching and research were less as well as the criteria of selection of students were also not very defined and these were not recognized by MCI. Now national board of examination has started a common entrance test for selecting the students. However, even now, if students have a choice of both, majority prefer MD Radiology compared to DNB, as most institutes of national importance are running MD.

Thereafter, in most institutes, Radiologists need to do senior residency for 3 years to enhance their expertise, before they can be appointed as a faculty. Their selection and promotions are based on their academic performance and scientific contribution apart from the clinical skills. Additional qualifications, like Fellowship of Royal College of Radiologists (FRCR), may play a role if two candidates are of same caliber. In India, there are three ranks for these teaching posts: assistant professor, associate professor and professor, although, in few institutes, there is an extra rank of additional professor before becoming professor.

The majority of the radiologists work in private imaging centers and nongovernmental hospitals. The common reasons are: shortage of institutional posts, difference in salary structure of the two areas, more vacancies of private jobs etc. While the income of salaried radiologists vary from 1 to 6 lakhs INR (1,635-9,800 USD) per month (depending on their expertise, experience and working hours), the earnings of people who start their own practice is quite variable and depend on many factors (2).

India is a populous country with over a billion people and there is approximately one radiologist for every 100,000 population (compared to US where the corresponding ratio is 1:10,000). Therefore, clinical practices are becoming increasingly busy because of the need to perform diagnostic examinations for many cases. Many hospitals already have installed and many more are in the process of acquiring picture archival and communications systems (PACS) and radiology information systems (RIS) to increase the efficiency and productivity of radiology departments. The technology gap compared to the west is being narrowed due to adoption of newer technologies by increasing number of hospitals. Additionally, teleradiology is becoming increasingly popular throughout the country serving four major purposes: easing staffing shortages, delivering emergency radiology services, providing radiology services to remote and underserved areas, increasing the reach of subspecialty diagnosis and thus becoming harbinger of a bright future. In addition, this also acts as an additional financial opportunity for the radiologists (3).

Unlike few years back, when most radiologists used to work on all modalities and pursue general radiology, the current trend in the nation is to gain proficiency and experience in one or two subspecialties to excel in that particular field. This is being followed in institutes of academic excellence and many other reputed imaging centers. I foresee many other practitioners across the country embracing this practice and strengthening their abilities as radiologists. Overwhelmingly, many continuing medical education programs are being held in various subspecialties and modalities periodically to further the knowledge and skills of practicing radiologists.

Despite all these developments, there are certain issues which require more attention in our system like hazards of radiation or minimizing the radiation while practicing radiology and implementation of quality assurance parameters. The development of modern radiology services in some underprivileged institutes and areas of the country is another challenging issue for us (3).

It is rightly said by Alan Turing "*We can only see a short distance ahead, but we can see plenty there that needs to be done*".

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References

1. Ananthakrishnan N. Distribution of postgraduate medical seats in different disciplines: is there rationality in decision-making? Natl Med J India 2011;24:365-7.
2. Jankharia B. The business of radiology. Indian J Radiol Imaging 2010;20:239.
3. Kalyanpur A. Commentary - radiology in India: the next decade. Indian J Radiol Imaging 2008;18:191-2.

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