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Subspecialization in Radiology: Indispensable and Rewarding

Subespecialização em Radiologia: Indispensável e Gratificante

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Abstract

The subject of subspecialty in Radiology is not new. However, given the evolution of Radiology (and its ubiquity), of other specialties and of Medicine in general, it has perhaps never been so relevant to discuss it. In this article I try to reflect on the importance, urgency and advantages of subspecialization in our specialty, also addressing certain difficulties associated with it, as well as some potential solutions. Finally, there is also a brief reflection on the necessary means for the implementation of subspecialization in Portuguese Radiology. All points of view are personal and are largely the result of a 7-year experience working in a sub-specialized Radiology Department.

Keywords

Subspecialization; Quality control; Medical education.

Resumo

O tema da subespecialização em Radiologia não é novo. Contudo, tendo em conta a evolução da Radiologia (e a sua ubiquidade), das outras especialidades e da Medicina em geral, talvez nunca tenha sido tão relevante discuti-lo. Neste artigo tenta-se refletir sobre a importância, premência e vantagens da subespecialização na nossa especialidade, abordando-se igualmente determinadas dificuldades que lhe estão associadas, bem como algumas potenciais soluções para as mesmas. Por fim, faz-se ainda uma breve reflexão sobre os meios necessários à implementação da subespecialização na Radiologia Portuguesa. Todos os pontos de vista são pessoais e resultam em grande parte de uma vivência de 7 anos a trabalhar num serviço de Radiologia subespecializado.

Palavras-chave

Subespecialização; Controlo de qualidade; Educação médica.

I am passionate about the subject of subspecialization in Radiology. It even seems to me that it could be the key to the future of our specialty in Portugal. For this reason, I gladly accepted the invitation to write this opinion article.

First of all, I would like to define subspecialization, a difficult task, because there are several models/degrees of subspecialization. Between 2014 and 2021 I had the opportunity of working in a "100% subspecialized" Radiology Department, that is, a service divided into sections (cardiothoracic, abdominal, musculoskeletal, etc.), each with a governing body, autonomously organized in relation to the other sections with regard to the clinical, educational, research and administrative components. Each radiologist interprets exams exclusively from a specific anatomical area, even in the emergency department. I consider this to be the ideal scenario, but depending on resources and circumstances, there may be other subspecialization models. Some examples include sections organized as described above except for the emergency department, individual subspecialization without formal organization in sections (usually the result of the voluntary effort of the subspecialist), among others.

Secondly, it also seems relevant to me to outline a summary of what are, in my opinion, the main advantages and disadvantages of the subspecialization in Radiology.

The first advantage is related to the possibilities it opens for each radiologist to reach – in his/her area of subspecialization – clinical/educational (and investigational where possible) levels significantly higher than those that the same radiologist would be able to reach if he/she were not subspecialized. The (growing) vastness of existing knowledge in each area, the complexity of our work, the difficulty in gaining experience in rare/complex cases and the indispensability of frequent interaction with clinicians to acquire criteria, combined with the human limitations common to all of us, make it clear to me that a given radiologist will do significantly better work if he/she subspecializes than if he/she does not. In fact, this advantage has been known for over 30 years, as already described in an AJR opinion article in 1990.[1] I would like to make it very clear that I am not saying that subspecialized radiologists are better than non-subspecialized radiologists, or that they have more merit, of any kind. What I am saying is that for the same radiologist, comparing the scenario where he/she is subspecialized versus the one where he/she is not, naturally the work produced will have better quality if he/she has the opportunity to subspecialize and work only in that area. In fact, this is the rationale behind subspecialization, without which it would not make any sense.

Several consequences arise from the point discussed above. The most important one, in my opinion, is the benefit to patients. If all radiologists in a department are subspecialists, and if each radiologist only interprets

exams in his or her area of subspecialty, then out of 100 patients who undergo exams in that department, 100 will receive subspecialty reports. If only 50% of radiologists are subspecialized, or if only 50% of exams interpreted by subspecialist radiologists are in their area of subspecialty, 50% of patients will receive reports of potentially lower quality than they would have if they were interpreted by the same but subspecialized radiologists. I say patients, but I could say our colleagues, clinicians/surgeons, because it is extremely important to mention that they will make crucial decisions based on these reports.

Another advantage of subspecialization is the dynamics created within each section, which results in a continuous improvement of each radiologist and in a higher professional satisfaction, an aspect that is often overlooked. When all radiologists in a depatment are subspecialists, it is easier for them to continually evolve in their field, as they do not have to dedicate time to learning/gaining experience in a multitude of fields. When all radiologists do this, and as each one of them shares the findings and clinical experiences in the area with his/her subspecialist colleague, a growth trend is generated that is more difficult to develop in the absence of subspecialization, given the dispersion.

Still another advantage is related to the training of residents. In a subspecialized service, residents learn from subspecialists in all areas. The knowledge, experience and clinical criteria communicated to them by subspecialists is, in principle, superior to what would be given by the same radiologists if they were not subspecialized or by these radiologists in areas other than that of their subspecialization, with obvious benefit for the training of future radiologists.

There are many more advantages, but I would end this part referring the last one that I think is extremely important: the type of interaction with clinicians that subspecialization allows. As I stated above, the frequent interaction with clinicians/surgeons in the respective areas of differentiation is part of the concept of subspecialization, especially - but not only - in multidisciplinary meetings. This interaction results in a clinical learning for the Radiologist that, when combined with our radiological knowledge, gives us a unique ability to participate in decision-making processes regarding the treatment plan for patients. It is not uncommon that, in a multidisciplinary meeting, the best decision regarding the approach for a patient is suggested by the radiologist, who, in addition to the acquired clinical knowledge, has a unique perception of the patient's pathology and its evolution due to the knowledge he/she has from the images. This being the case, clinicians/surgeons gain enormous respect for Radiology and Radiologists, who start to consider them as indispensable partners of particularly high value for them and for their patients. The value of Radiology – which I so often see being questioned in our country – becomes obvious, which is crucial to our specialty. I cannot resist sharing an episode that I will never forget. Toronto General Hospital is the largest adult transplant center in North America. Dr. Paul Greig was one of the main pillars of this renowned transplant program for decades. Coincidentally, I was fortunate enough to be the abdominal radiologist assigned to participate in the hepatobiliary group meeting the week he was to retire. Naturally, at the end of the meeting, we conversed, more than usual, and in that exchange of views he asked me if I knew what, in his opinion, had been the greatest medical advance in his field in the last 30 years. In view of my silence, he stated, without hesitation, that it was Radiology and the ability that the (subspecialized) radiologists he had worked with for decades had to give him the answers he needed, and thus implement the right decisions for patients, with increases in survival (difficult to measure, but real) and reduced morbidity. This is our importance, at least when we subspecialize: to be one of the most important revolutions in Medicine of the last 30 years. It is no small thing…

As with everything in life, there are also disadvantages and difficulties and they are not easy to overcome.

One of them has to do with the need for a certain number of radiologists in order to render subspecialization possible. In a department with less than 10 radiologists (perhaps the majority in our country), it is very difficult to have radiologists do just one or two areas, for obvious reasons. However, even these departments benefit from subspecialization in other Radiology departments that are larger, not only because they can have their residents training with subspecialists (from other services), but also because they can turn to the services of a subspecialist for an opinion or help in more difficult cases, if necessary. Non-subspecialized departments already exist. The ones that do not exist (or are insufficient) are the subspecialized ones, even in places with a number of radiologists that would allow it, and these are the ones that need help to be created, in my opinion.

Another difficulty relates to the organizational difficulties that subspecialization creates, even in a department with a sufficient number of radiologists. From an administrative point of view, it is much more difficult to make schedules when each radiologist only works in certain areas. This is an initial difficulty that can only be overcome if one truly believes in the advantages of subspecialization. However, once the necessary dynamics are created, everything is possible; but at first, understandably, it can be demoralizing for those who have to manage these organizational issues.

The last difficulty I wanted to refer to, which is very relevant, has to do with the practice of private radiology, which is an important and indispensable part of the professional practice for most of us. With few exceptions, we live in a reality where the value of subspecialization is underappreciated by those who manage private Radiology, from the management structures themselves, to the people who coordinate units. Most of these structures and people have lived for many years in a reality in which all radiologists were generalists, "doing everything". In daily practice, these structures and the people who work in them are under a lot of pressure to "sort" various situations in which it is apparently advantageous for the available radiologist to always do what they need. This is understandable, due to a variety of reasons, including historical ones. However, if we believe in subspecialization, we must try to change mentalities. And it is not up to those who are not radiologists to understand the value of subspecialization or to lead change; it is up to the radiologists, who then need the support of the various management structures. In recent times, I have noticed a very significant change in the perspective of these management structures, regarding the importance of subspecialization, a change that fills me with hope and optimism. But the leadership of the process and the mobilization for change will always be up to us, radiologists, who will only commit to this same change if we really believe in its value. It is clear to me that the evolution of Radiology requires an exclusive or at least a

major dedication to a certain area. Then, the radiologists who will be mostly in demand will not be the ones who are mostly available, but those who add more value.

Still in private radiology, I also notice that many of us radiologists are afraid of dedicating ourselves to just one or two areas, which is also understandable. This aspect is due to multiple factors. One of them is related to the fear that this may translate into fewer professional opportunities, as we become less capable of interpreting exams in areas other than that of our subspecialization. But it is also due to the fact that most of us have not had the opportunity to experience, personally, the reality that is the practice of Radiology in a context of subspecialization. I speak from my own experience. Although I have long believed in subspecialization, before living in that context, my belief was very theoretical, vague, and as a result I ended up practicing general Radiology, interpreting exams in the most varied areas. Before experiencing the difference – including the much higher job satisfaction that subspecialization provides – I understand the difficulty in realizing the real benefits, which I consider to be one of the difficulties in implementing subspecialization. Bearing these aspects in mind, it seems to me that the evolution to subspecialization also involves the expression of willingness on the part of the management structures of private groups, the guarantee that there is no loss of income and, above all, the opportunity to experience personally a reality in which there is subspecialization - a difficult task, no doubt, but feasible, as it has been possible in many other places in recent decades. On the other hand, there will always be many generalist radiologists, some by choice (totally legitimate), others because circumstances so dictate. The reason why I mention the need for subspecialist radiologists is because the generalists are already the majority, the subspecialists are still relatively few and insufficient, so it is important to focus on their development.

And how does a radiologist become subspecialized? The coverage of this topic goes beyond the scope of this article, which alone would cover an entire article. I will only make very brief notes. The first is that a year of more intense training in an area, in whatever form – fellowship, final year of internship, etc. – is a great help and an excellent start; but, by itself, it does not turn a radiologist into a subspecialist. The radiologist becomes truly a subspecialist when he tries to train continuously for years in an area and, above all, when he deals with a certain area of interest and interacts with the clinicians/surgeons in that area for years. Thus, it is crucial to develop training plans with subspecialization in mind – and I would like to give an act of praise to the College of Radiology for its recent effort in updating the Radiology training curriculum, now with a huge focus on subspecialization – but it is also essential that radiologists have the possibility to work exclusively (or close to it) in their area of dedication, thus communicating frequently with our clinical/surgeon colleagues in formal and informal meetings. Finally, it also seems essential to me to provide opportunities for continuous training to all those who decide to invest in subspecialization. These can come from a multitude of sources, including the scientific societies and institutions where we work.

In summary, and as it is easy to understand, in my opinion, subspecialization of part of the Portuguese Radiology is of the utmost importance, and is even the best response to many of the "crises" that our specialty is going through in Portugal. I know that the path is not easy, not only because of the inherent difficulties of the process, but also because any change generates discomfort. However, I firmly believe that this is the path to pursue and I am ready to dedicate the coming years of my professional life to making this process a reality. I know there are many more of us who are in the same boat. The more we are, the better, because together we are always stronger. Let's go!

Referências

1. Capp, MP. Subspecialization in radiology. American Journal of Roentgenology. 1990;155:451-4.