“Should Interventional Radiology gain specialty status within the Royal College of Radiologists?”

Interventional Radiology (IR) - medicine's best kept secret will revolutionise healthcare like never before.

The legacy Charles Dotter left behind not only showcased how IR is a means of pursuit of innovative and complex techniques for better treatment options for patients; it sparked an opportunity for radiologists to use their imagination and creativity to develop IR into the 21st century speciality as we know it today. By utilising imaging, clinical and minimal invasive surgical knowledge interventional radiologists are able to play an integral role in almost all speciality patient care.

Over the decades, the absence of radiology in the leadership management arena has allowed other specialities to perpetuate turf wars and utilised techniques developed by IR. In this essay, I will discuss why IR should gain speciality status within the Royal College of Radiologists (RCR) and how its introduction will revolutionise medical care.

Starting from basics

Interventional Radiology offers vital emergency and elective care; improving patients’ outcome and reducing length of hospital stay, thus proving very beneficial economically for any healthcare system[1]. However, in the context of a backlog of diagnostic reporting in the NHS as well as severe imaging department staff shortages- providing a 24/7 IR service seems far-fetched. This is also exacerbated by the fact that IR is currently rated low as a career option amongst medical students around the world, as it is seen as only an imaging speciality[2-4].

IR speciality recognition within the RCR will help establish more authority in encouraging medical schools to include IR in the medical education curriculum (just like any other clinical speciality). Thus, giving medical students exposure to the speciality early on through seminars and taster modules, helping to clarify the role of IR. Better exposure should help ameliorate recruitment problems faced by the speciality as demonstrated in the USA, where IR has been oversubscribed year on year by medical students applying for residency since gaining specialty status[5].

In this process, diagnostic radiology should not be penalised as it needs IR and vice versa. Through joint radiology societies, medical student involvement in conferences and events is paramount to raise awareness of both speciality dependence on each other. Consequently, having a speciality presence will only reinforce this notion and enable a closer unity within the RCR starting from a very junior level. The future of IR is dependent on juniors specialising in the field, thus speciality status will provide the platform needed to address the problem at the grass root level through education.

Current worldwide experiences and IR achievements

Research from residency matching programmes have shown 21% of applicants match successfully to IR - making IR a very competitive and sought speciality in the USA[5]. According to another study of IR trainees in the USA, 70% experienced burnout - with females affected more than males [6]. Both pieces of data paint a stark contrast of IR training that should be acknowledged head on. How can such a competitive speciality lead to unhappy trainees? Having different IR programme types (in the USA) may be a contributing factor. In contrast, speciality status within the RCR will bring a clear defined structure to training including a clinical component, assessment and different career pathways thereby helping reduce burnout, improving trainee satisfaction and producing world class IR's. At the same time allow improved work force planning and 24/7 service for life saving procedures around the clock. Moreover, having speciality recognition will allow inequalities to be hammered out by providing a platform for different views (e.g. 'Women in IR') to be vocalised.

IR has been a magnet for milestone achievements in medicine that has revolutionised patient care, including selective embolization for GI bleeding as early as 1972 and prostatic artery embolization in 2000. The Department of Health recently published a document outlining how adverse events are avoided by the use of interventional radiology such as preventing young patients from having a hysterectomy for large fibroids by embolising the uterine artery via an endovascular approach, thus emphasising the need for patients to have improved access to IR services[7]. Often discoveries by IR have been taken away by other specialities, for example coronary intervention by cardiology. The main reason why cardiology has owned this type of intervention is because of its solid grounding and support across its own speciality, as well as its keen drive to learn intervention techniques and access to patients. The recognition of IR as a speciality will erase the 'invisible radiologist' stereotype, allowing

radiologist to enter the clinical arena and take hold of their own achievements; as it will have backing from a strong work force carrying out these procedures 24/7, with a passion to learn new intervention techniques and direct access to patients. Furthermore, it will enable IR's to form partnerships with a variety of clinicians based on mutual respect, while working together as distinct clinicians with different skill sets and sharing the single goal of providing their patients the best care. Speciality status recognition can allow partnerships to form that will eliminate conflicts of interest and duplication of work, enhance patient care and decrease the cost of treatment.

Clinical Interventional Radiology

Possibly a change in name from IR to 'clinical interventional radiology' or 'image guided surgery' may go a long way in achieving recognition by the public and other clinicians, at the same time clarifying the purpose of the speciality. What is evident is that IR needs to become more clinical to survive. Dotter prophesied *" If we don't assume clinical responsibility of our patients, we will face forfeiture of our territorial rights based solely on imaging equipment others can obtain and skills others can learn"* - this is clearly happening now and change is necessary. The reason why turf wars exist is because radiologists have meticulously perfected procedural skills but have lost focus on maintaining overall clinical skills. Through speciality status within the RCR, reforming the training curriculum to make it more clinical, establishing clinics, carrying out ward rounds, consenting and understanding treatments from other specialities and clinical ownership of patients will be a reality for IR. This will completely change the perception of IR and will bring direct referrals from primary care. All patients would want the clinician performing the procedure to maintain a good patient doctor relationship through regular follow up, post and pre-procedural consultations- thus having own patient base (making it safer for patients) and being less reliant on secondary care referrals. This is an important positive step as IR will be recognised more as a clinical speciality to be able to compete with other specialities and acquire its own patient base to thrive.

Research and IR

IR is home to a myriad of interventional therapeutic techniques. Research is the foundation of any clinical practice and as a novel clinical speciality research is paramount for further

development and survival of IR. Radiology will be the home to artificial intelligence in the near future and speciality status will give a platform for this to prosper. Novel AI and machine learning techniques have been developed, ranging from genome targeting interventional therapy to diagnostic automated x-ray reporting. Researchers from Yale university predict radiology will be the first speciality to incorporate AI in to daily practice by 2053[8]. Consequently, interventional radiologists will have an advantage if they can utilise this tool in their daily practice in the clinical arena and combine this with their procedural skill set, making them a unique and cutting-edge speciality carrying out high tech interventions to improve patients' lives. Research in IR is increasing year on year (Figure 1), and having a specialty status will allow ownership of this type of research to continue in IR and promote further research in the field. Facilitating yearly conferences where consultants and trainees can come together, showcase interesting cases, networking and learn from each other will motivate further interest in the field and keep it alive.

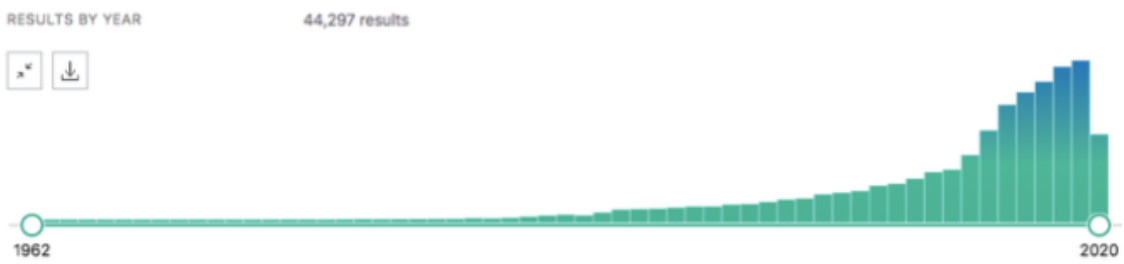

Figure 1: A bar graph showing increase in PubMed publications in interventional radiology 1962-2020

RCR is the home of IR

Without a doubt, RCR is the home of IR. The RCR has an excellent track record of achieving UK wide excellence in non-surgical cancer care through transforming therapeutic developments and advances into clinical practice in clinical oncology. This has only been achieved through structured training and where clinical oncologists are supported to deliver high quality care via various cancer pathways and services. If IR is given speciality status

within the RCR, the same success can be replicated with the ultimate goal of achieving better care for patients.

In conclusion, radiology without a doubt is the beating heart of any hospital as almost all specialities rely on it. It is vital that interventional radiologists are available in all hospitals and settings as IR services and skills are required both in and out of hours. Speciality status will motivate IR to develop newer techniques that will reduce radiation to both patient and physician, and AI software will improve procedure time and safety. IR's are radiologists first and foremost. Without the knowledge of image interpretation, complex minimally invasive surgery would not be possible. Therefore, gaining speciality status within the RCR, IR's and diagnostic radiologists will share a close bond that will allow them to grow together.

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