

Building Collaboration in Cardiac Imaging

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Publicity about new developments in medical technology is not at all unusual. But the degree with which multi-slice computed tomography (MSCT) for coronary artery disease (CAD) detection has captured the imagination of the public appears exceptional. This interest has been fuelled by reports in the popular press. In 2005, a popular US-based news magazine ran a cover story describing the ability of CT angiography to detect coronary artery disease. It has been suggested by some news articles that early detection of heart disease by this technology can help us prevent heart attacks before they occur, thus potentially saving lives. Many cardiologists have now come to expect that their patients will ask routinely whether they need the latest heart scan.

Indeed, the high spatial, and adequate temporal, resolution of modern CT scanners has made non-invasive imaging of the coronary arteries feasible in routine clinical practice, a much sought-after “holy grail” of cardiac imaging. Nevertheless, although MSCT has made a promising start as a diagnostic tool for detecting coronary artery disease, popular claims about the ability of this technology to prevent heart attacks by providing for earlier diagnosis require further study and are not yet proven. As with other methods for CAD detection, assessing the true value and clinical role of this exciting new technique requires more information about the long-term outcomes and its prognostic utility. In short, while we should not deny patients the benefits of this new approach where deemed appropriate, more research is needed. The key is to balance safety, diagnostic accuracy, and appropriateness on the one hand, with a willingness to explore new imaging options on the other.

The advent of MSCT has also ignited a debate about the value of screening for heart disease, as well as who should provide that imaging. This has been reported by the US popular press as a “turf war” between radiologists and cardiologists over cardiac CT. Radiologists have focused their career on medical imaging, whether using X-rays, ultrasound or magnetic resonance. Their training emphasises expertise in the technical aspects of imaging, such as physics and radiation safety, as well as the interpretation of

pathology based on radiological anatomy. Cardiologists also often perform imaging using X-rays, radioisotopes or ultrasound.

It has been alleged that self-referral (for example, by cardiologists sending patients for imaging procedures that they perform themselves) might be influenced by financial gain, increases medical costs unnecessarily, and should be avoided.¹ This has been hotly disputed, with studies quoted to support alternative views.² Cardiologists argue that their involvement in echo-cardiography, percutaneous intervention and nuclear imaging has been driven by their need as clinicians to improve patient care, and that the combination of organ specific expertise and access to imaging techniques has helped to advance medical science in cardiology, and ultimately has benefited patients.³ There are many other arguments both for and against the involvement of cardiologists in imaging of the heart, which a single editorial cannot cover.

But the energy lost in debating this issue distracts us from the real challenge: studying how this new technology can help our patients, objectively evaluating its clinical benefit and optimum role. This task should not be underestimated, and it will require close collaboration between the 2 specialties.

Ultimately, patients are best served when the expertise of radiologists and cardiologists can be harnessed in a team approach. With their training and experience in the use of imaging equipment, radiologists are uniquely placed to ensure the safety and accuracy of imaging techniques, particularly those involving radiation. Their knowledge and understanding of cross sectional anatomy gives them a strong foundation to interpret images of the heart that are now exquisitely captured by these new scanners. But because cardiologists have an intimate understanding of the pathophysiology and treatment of heart disease, as well as the specific needs of their patients, their contribution to the development of cardiac imaging is also crucial.

It is therefore heartening that in many hospitals, both in Singapore and abroad, radiologists and cardiologists are working together on joint programs to develop cardiac CT.

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The Academy of Medicine's College of Physicians and Radiologists have worked closely to develop common guidelines for training in the use of cardiac CT.⁴ Guidelines for appropriateness of imaging have also been published.⁵ The challenge is to design a model for cooperation and teamwork that will enable us, as physicians, to overcome the natural professional barriers that result from traditional specialisation. It is encouraging that in Singapore, many radiologists and cardiologists have taken a step together in that direction.

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