

The field of noninvasive imaging of cardiovascular disorders has advanced considerably in recent years, particularly with the introduction of Cardiovascular Magnetic Resonance (CMR), which has added its powerful resources to those of the extensively used echocardiographic techniques. While an actual integration of these two methods is still an ongoing issue in most clinical units, a new technique also appears on the horizon with promising perspectives: Multidetector Computed Tomography (MDCT), which has raised high expectations from its very first appearance, only a few years ago. Reasons for such an interest have been the superb resolution of images, providing a highly defined anatomical detail, and, as a consequence, the obtention of truly readable images of the coronary arteries.

Having a noninvasive coronary angiography available has been a much awaited goal for clinical cardiologists for decades. Ultrasound was earlier discarded for this purpose, while CMR has proven to be reliable in providing this information only in the most experienced hands and with methods of analysis submitted to continuous refinements. Thus, MDCT has found its place immediately after its arrival, filling a gap—imaging of the coronary arteries—which had been incompletely covered by former noninvasive techniques.

With such a well-provided panel of tools, diagnostic cardiology seems to have attained a point of excellence in the noninvasive assessment of patients with ischemic heart disease. On one side, echocardiography constitutes an essential tool for a routine scanning of patients with ischemic one or any other form of heart disease. CMR, on its part, contributes by means of accurately precise information, which is also unique in respect to the detection and quantitation of myocardial necrosis. Finally, MDCT has proven to be useful in providing detailed morphological information on coronary arteries. Although attractive, this scenario should not be considered, however, as inalterable. The very evolving nature of these techniques makes it difficult to anticipate with certainty which improvements will be introduced in the future and, what the prospects will be, even at midterm, in this field.

With a practical perspective, however, today MDCT coronary angiography constitutes an indispensable tool that should be mastered by every department active on cardiac imaging. The aim of this Atlas is to provide with an

extensive body of images taken with a Toshiba Aquilion system (most of them from a 64-slice unit) an illustration of the capacities of the technique for the analysis of the anatomy of coronary arteries. A detailed text accompanying the figures and an updated list of references will guide the reader throughout his/her initiation to the technique.

An effective management strategy of the different resources available for cardiac imaging implies new changing attitudes with respect to those deeply rooted in some medical specialties, as cardiology or radiology. Cardiac MDCT is a good example of a technique with an extremely useful potential that, in order to be adequately exploited, requires an unreserved cooperation between professionals from both sides. Cardiologists and radiologists have both cooperated in writing this Atlas, as they usually do in everyday practice with cardiac MDCT, each of them contributing with complementary roles. Receiving the patient, setting the system, performing the exam, reconstructing volumes, and a first reporting of the studies are tasks under the radiological domain, in addition to the important issue of an authorized reading of images to rule out abnormal noncardiac findings in the thoracic volume acquired. A definitive reporting and, particularly, the integration of findings of the exam on the whole clinical process of the patient, are responsibilities of the cardiological team, together with the important issue of defining and selecting the indications for the studies. With this perspective, we do firmly believe that the constitution of integrated Cardiac Imaging units will be a widespread practice in the near future as the optimal approach to deal with all aspects of this increasingly demanding field, and for the benefit of patients with cardiovascular disease.

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