Introduction

In July 2006, I served as the moderator of the seventh in a series of CTA Forums on the use of intravenous contrast in computed tomographic angiography (CTA). The proceedings of each of these Forums have been published as a special supplement to Applied Radiology, in print or online, or both. The July 2006 CTA Forum focused on cardiac CT, exploring the influence of advancing CT technology not only on contrast medium administration, data acquisition, and data postprocessing, but also on the expanding role of cardiac CT in clinical medicine.

Cardiac imaging is both the most demanding CT application and the greatest beneficiary of advances in CT technology. Indeed, cardiac CT is driving innovation, spurring not only foreseeable improvements in temporal and spatial resolution, but also entirely new ideas, such as dual-energy CT. The results are increasing diagnostic accuracy, increasing ease of use, and identifying a wider range of patients for whom cardiac CT is the noninvasive imaging modality of choice.

The goals of the July Forum, and of this supplement, are to:

• Review the current state of the art of cardiac CT, including its clinical applications;
• Provide key information on the selection and use of contrast media in multislice cardiac CTA procedures;
• Review when and why to use cardiac CT, particularly coronary CTA;
• Provide “how-to” information for performing cardiac CTA studies, including contrast administration, image acquisition, and scan interpretation; and
• Provide a better understanding of the challenges of offering cardiac CTA as a clinical service.

This supplement comprises an impressive array of review articles by a distinguished panel of experts. In addition to my own overview on the state of the art of cardiac CT, Jill E. Jacobs, MD (from New York University Medical Center, New York, NY) authors an excellent review on how to perform coronary CTA; Stephan Achenbach, MD (from the University of Erlangen–Nürnberg, Erlangen, Germany) crafts a Top 10 list of indications for coronary CTA; and James K. Min, MD (from the Weill Medical College of Cornell University, New York-Presbyterian Hospital, New York, NY) compares coronary CTA and invasive angiography.

Samuel Wann, MD, MACC (from The Wisconsin Heart Hospital, Milwaukee, WI) reviews the use of cardiac CT for risk stratification, while Matthew Budoff, MD (from the Los Angeles Biomedical Research Institute at Harbor–UCLA Medical Center, Torrance, CA) describes the emerging use of cardiac CT in the emergency room, including coronary calcium scoring, coronary CTA, and triple rule-out studies. Finally, Chip Gilkeson, MD (from Case Western Reserve University School of Medicine and University Hospitals of Cleveland, Cleveland, OH) describes the growing role of cardiac CT in discovering congenital heart disease in adults, many of whom come to the emergency room with chest pain.

I would like to thank GE Healthcare for sponsoring the CTA Forum and for providing an educational grant in support of this publication, Anderson Publishing for producing this special supplement, and the Forum participants for preparing a comprehensive overview of cardiac CTA.

Elliot K. Fishman, MD
Johns Hopkins Hospital
Baltimore, MD