

From the Desk of the Editor

- 213 **Journal Introduction**
Allen J. Taylor, MD

Technical Notes

- 215 **Coronary Artery Stent Imaging with CT Using an Integrated Electronics Detector and Iterative Reconstructions: First in Vitro Experience**
Jochen von Spiczak, MSc, Fabian Morsbach, MD, Sebastian Winklhofer, MD, Thomas Frauenfelder, MD, Sebastian Leschka, MD, Thomas Flohr, PhD, David Maintz, MD, Harald Seifarth, MD, Alexander C. Bunck, MD, Paul Stolzmann, MD, Hatem Alkadhi, MD, MPH, EBCR

Accurate stent lumen delineation remains challenging. In a phantom study using a 128 row dual source CT scanner with a conventional detector or integrated electronics. The integrated detector yielded higher quality images, with lower image noise (14.3 vs. 21.0HU, $P < 0.001$) and more accurate stent diameter measurement.

Original Research Articles

- 223 **Utility of ECG-Gated MDCT to Differentiate Patients with ARVC/D from Patients with Ventricular Tachyarrhythmias**
Takatomo Nakajima, MD, Fumiko Kimura, MD, Katsuya Kajimoto, MD, Hiroshi Kasanuki, MD, Nobuhisa Hagiwara, MD

The purpose of this study was to clarify a utility of our comprehensive CT scoring system to diagnose ARVC/D and found its excellent diagnostic ability. This suggests that characteristic CT findings might aid differentiation of ARVC/D from ventricular tachyarrhythmias.

- 234 **Dual-Standard Reference Values of Left Ventricular Volumetric Parameters by Multidetector CT Angiography**
Song Shou Mao, MD, Dong Li, MD, David G. Rosenthal, BS, Michelle Cerilles, MD, Irfan Zeb, MD, Hao Wu, BS, Ferdinand Flores, BS, Yanlin Gao, MD, Matthew J. Budoff, MD

This study reports reference values for left ventricular volumetric parameters both including and excluding the papillary and trabecular muscles, and recommends optimal segmentation method for measuring these values. In 179 subjects without heart disease, a trace method including the papillary and trabecular muscles resulted in the most reproducible results for left ventricular volume and mass.

- 241 Prevalence and Severity of Coronary Artery Calcium in Young Persons with Diabetes**
Nikhil Daga, MD, Khurram Nasir, MD, Yasmin Hamirani, MD, John Tayek, MD, Philip Bach, MD, Dong Li, MD, PhD, Matthew J. Budoff, MD

Among 3723 asymptomatic patients <40 years old who had undergone CAC scoring, 4% had diabetes mellitus. Young persons with diabetes had greater prevalence of CAC >0 than persons without diabetes (43% vs. 24%, $p < 0.0001$), and a 4-fold higher odds of a CAC score of ≥ 100 . Young diabetics have increased CAC burden.

- 248 Multidetector CT Predictors of Prosthesis–Patient Mismatch in Transcatheter Aortic Valve Replacement**

Melanie Freeman, MBBS, John G. Webb, MD, Alexander B. Willson, MBBS, MPH, Miriam Wheeler, MBChB, Philipp Blanke, MD, Robert R. Moss, MBBS, Christopher R. Thompson, MD, CM, Brad Munt, MD, Bjarne L. Norgaard, MD, Tae-Hyun Yang, James K. Min, MD, Steen Poulsen, MD, Nicolaj C. Hansson, MD, Ronald K. Binder, MD, Stefan Toggweiler, MD, Cameron Hague, MD, David A. Wood, MD, Philippe Pibarot, DVM, PhD, Jonathon Leipsic, MD

Prosthesis-patient mismatch (PPM) is a predictor of mortality post aortic valve replacement (AVR). We found that 42.2% of patients had moderate, and 9.4% severe PPM after transcatheter AVR and was predicted by indexed MDCT annular area. Procedural characteristics and in-hospital outcomes were similar between those with or without PPM.

- 256 Coronary CT Angiography Versus Intravascular Ultrasound for Estimation of Coronary Stenosis and Atherosclerotic Plaque Burden: A Meta-Analysis**

Collin Fischer, MD, Edward Hulten, MD, Pallavi Belur, DO, Ryan Smith, DO, Szilard Voros, MD, Todd C. Villines, MD

We performed a meta-analysis of the ability of coronary CTA to identify atherosclerosis and accurately measure plaque and coronary area and volume measurements as compared to intravascular ultrasound (IVUS). Among forty-two studies evaluating 1360 patients there was no significant difference between coronary CTA and IVUS measurements of vessel lumen cross sectional area, plaque area, percent area stenosis, or plaque volume. CTA was highly accurate with a sensitivity and specificity to detect any plaque compared with IVUS of 93% and 92%, respectively.

Pictorial Essay

- 267 Aortic Intramural Hematoma: Review of High-Risk Imaging Features**
Matthew J. Kruse, MD, Pamela T. Johnson, MD, Elliot K. Fishman, MD, Stefan L. Zimmerman, MD

Images in Cardiovascular CT

- 273 Multimodality Imaging of Intramyocardial Fat in Tuberous Sclerosis**
Tyler Friesen, MD, Iain D.C. Kirkpatrick, MD, FRCPC, Davinder S. Jassal, MD, FACC, FRCPC

Announcements

275 Society News

From the Desk of the President

276 SCCT: A Special Place John R. Lesser, MD, FSCCT

On the Cover: Contrast enhanced cardiac CT image in arrhythmogenic right ventricular dysplasia demonstrating features indicative of the diagnosis including RV free wall thinning (arrows) and fibrofatty replacement (arrowheads). From Nakajima et al.

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