

IMAGING FOR BEST OUTCOMES IN STRUCTURAL HEART INTERVENTIONS SPECIAL ISSUE

Focus Issue on Imaging For Best Outcomes in Structural Heart Interventions



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The exponential increase in the transcatheter devices for treatment of structural heart disorders, specifically heart valve disease, has driven the evolution of structural heart imaging. Although its original form, which was restricted largely to intraoperative transesophageal echocardiography during surgical therapy for heart valve diseases, the concept of structural heart imaging has significantly expanded. It now includes procedural planning, intra-procedural imaging, and dedicated follow-up imaging. This expanded concept also has required the imager and the interventionist to focus less on the imaging modality and more on the optimal method to obtain crucial information irrespective of the imaging modality. Similarly, the range of transcatheter device therapy, in the adult, has rapidly advanced from the classic device closure of atrial septal defects to device-based closure of the left atrial appendage, and the repair and replacement of aortic, mitral, and tricuspid valves. This has mandated that the imager and the interventionist become proficient in the understanding of the essential anatomy of these valves. Furthermore, these devices are in constant evolution from their first generation version to the current generation iterations. And some have sim-

ply not fulfilled early promise and have been withdrawn. All of these events, which have transpired in a much shorter time frame than surgical devices and valves, have brought into keen focus the need for the imaging expertise to meet the needs of the brave and constantly changing world of structural heart interventions in the adult.

The January issue of *iJACC* is a special focus issue on “Imaging for Best Outcomes in Structural Heart Interventions” that brings together contemporary concepts in structural heart imaging through five state-of-the-art review articles. Some notable and novel features of these articles make them very different from the traditional reviews in this arena. Firstly, it is geared to the practicing clinician with very practical information that can improve day-to-day patient care and imaging practices. Second, the authorship, which includes imagers, interventionists, and surgeons, reflects the real-world approach to structural heart interventions where the “heart team” functions as a unit to plan and perform these procedures. Third, these reviews include a primer on essential anatomy of the target structure, followed by descriptions of the role of imaging in planning surgical and transcatheter interventions, and a narrative on procedural and follow-up imaging. Lastly, these articles include a generous number of visuals in the form of figures, tables, and videos (of normal and abnormal anatomy, procedure planning, intra-procedural imaging and complications of these procedures). The articles include imaging surgical and transcatheter interventions of the native mitral and tricuspid valves, valve-in-valve/ring/mitral annular calcification, atrial septal defects, and left atrial appendage.

Dr. Vannan and Dr. Lancellotti were the Guest Editors for this Focus Issue. The editors are grateful for their outstanding contributions in creating this collection.

The authors attest they are in compliance with human studies committees and animal welfare regulations of the authors' institutions and Food and Drug Administration guidelines, including patient consent where appropriate. For more information, visit the [Author Center](#).

Lastly, there is a review of the role of 3D printing, computational modeling, and artificial intelligence in structural heart interventions. Transcatheter aortic valve replacement and the role of imaging for this procedure has been extensively covered in the last few year, hence we have not included this. We hope this compendium will have something valuable for both the advanced imager as well as those gently easing into the world of structural heart imaging.