Preface: innovations in the management of valvular and structural heart disease

According to registry data from the Society of Thoracic Surgeons and the American College of Cardiology, the number of valvular and structural interventions performed yearly is rapidly expanding. This includes: (I) 45,000+ isolated mitral or aortic valve operations; (II) 25,000+ combined coronary artery bypass grafting and mitral or aortic valve procedures; and (III) 13,000+ interventions performed on the ascending and/or descending aorta (1). Since 2012, a total of 54,000+ transcatheter aortic valve replacements and 3,000+ transcatheter edge-to-edge (MitraClip) mitral valve repairs have been performed, as well as nearly 2,000 valve-in-valve transcatheter aortic valve replacements and 349 transcatheter valve-in-valve or valve-in-ring mitral valve interventions (2). With an aging population, longer life expectancy, and patient populations with greater co-morbidity, the number of these procedures will only continue to increase.

Over the last decade, there has been a fervent interest in less invasive approaches to valvular and structural interventions, with the goal of decreasing procedural risk, improving clinical outcomes, and extending therapy to high and prohibitive-risk populations. This has been realized with the application of minimally invasive techniques for valvular and aortic surgery, and the development of transcatheter valve interventions for patients with aortic or mitral valve disease, amongst other advancements (3-6). In the same vein, alternative surgical reparative strategies for secondary mitral regurgitation are being explored given the suboptimal outcomes of restrictive annuloplasty reported by the Cardiothoracic Surgical Trials Network randomized studies on valve repair versus replacement for secondary mitral regurgitation (7,8). These include interventions targeting the subvalvular apparatus of the mitral valve, in the form of papillary muscle approximation or relocation, and secondary chordal cutting (9). Multimodality imaging plays a critical role in selecting candidates and planning for these innovative repairs.

In the current supplement issue of the *Journal of Thoracic Disease*, contributing authors present original research and meta-analytic studies, review articles, and editorials regarding these innovative techniques in the field of valvular and structural heart disease. The journal and editorial staff is grateful for the work, time, and commitment of the authors and institutions that have presented their research and ideas herein. It is our hope that readers will enjoy and learn from the content presented, and that the issue will continue to bring interest and awareness to the field.

Acknowledgements

None.

Christos G. Mihos

Christos G. Mihos, DO
Cardiac Ultrasound Laboratory, Massachusetts General Hospital, Harvard Medical School, Boston, MA, USA.
(Email: drcmihos@gmail.com or cmihos@mgh.harvard.edu)
doi: 10.21037/jtd.2017.06.100
Conflicts of Interest: The author has no conflicts of interest to declare.
View this article at: http://dx.doi.org/10.21037/jtd.2017.06.100

References

1. D'Agostino RS, Jacobs JP, Badhwar V, et al. The Society of Thoracic Surgeons Adult Cardiac Surgery Database: 2017 Update on Outcomes and Quality. Ann Thorac Surg 2017;103:18-24.
2. Grover FL, Vemulapalli S, Carroll JD, et al. 2016 Annual Report of The Society of Thoracic Surgeons/American College of Cardiology Transcatheter Valve Therapy Registry. J Am Coll Cardiol 2017;69:1215-30.
3. Santana O, Singla S, Mihos CG, et al. Outcomes of a Combined Approach of Percutaneous Coronary Revascularization and Cardiac Valve Surgery. Innovations (Phila) 2017;12:4-8.
4. Schmitto JD, Mokashi SA, Cohn LH. Minimally-invasive valve surgery. J Am Coll Cardiol 2010;56:455-62.
5. Vahl TP, Kodali SK, Leon MB. Transcatheter Aortic Valve Replacement 2016: A Modern-Day "Through the Looking-Glass" Adventure. J Am Coll Cardiol 2016;67:1472-87.
6. Partida RA, Elmariah S. Transcatheter Mitral Valve Interventions: Current Therapies and Future Directions. Curr Treat Options Cardiovasc Med 2017;19:32.
7. Michler RE, Smith PK, Parides MK, et al. Two-Year Outcomes of Surgical Treatment of Moderate Ischemic Mitral Regurgitation. N Engl J Med 2016;374:1932-41.
8. Goldstein D, Moskowitz AJ, Gelijns AC, et al. Two-Year Outcomes of Surgical Treatment of Severe Ischemic Mitral Regurgitation. N Engl J Med 2016;374:344-53.
9. Mihos CG, Larrauri-Reyes M, Santana O. A Meta-Analysis of Ring Annuloplasty Versus Combined Ring Annuloplasty and Subvalvular Repair for Moderate-to-Severe Functional Mitral Regurgitation. J Card Surg 2016;31:31-7.

Cite this article as: Mihos CG. Preface: innovations in the management of valvular and structural heart disease. J Thorac Dis 2017;9(Suppl 7):S561-S562. doi: 10.21037/jtd.2017.06.100

