Editorial

In search for optimal results for transcatheter aortic valve-in-valve procedures

Em busca de resultados ótimos para procedimentos transcateter aórticos *valve-in-valve*

The valve-in-valve procedure consists of the transcatheter implantation of a valve within a failed bioprosthetic surgical valve and was first carried out in 2007, by Wenaweser et al.,[1] in a patient with severe aortic regurgitation caused by surgical bioprosthesis degeneration. Since then, this type of treatment has experienced an increase in use, expanding its range of indications for the treatment of failed bioprosthesis implanted in non-aortic positions and becoming an alternative for selected patients. Although the procedure is similar to that of transcatheter implantation in native valves, there are differences that require attention.

In this issue, we present the study of Meneguz-Moreno et al., from *Instituto Dante Pazzanese de Cardiologia* and *Hospital do Coração* (São Paulo, SP), on the initial experience with valve-in-valve procedures, using the self-expanding CoreValve system or the balloon-expandable SAPIEN XT system in patients with failed aortic bioprosthesis. The article describes all the steps of the pre-clinical evaluation, with emphasis on the characteristics of the surgical prosthesis, especially its internal diameter, and the ideal valve-in-valve implantation depth. It also contains, in detail, the characteristics of the procedure and the clinical and hemodynamic outcomes at 30 days and 1 year. In a related editorial, Simonato, Rana, and Dvir, from Saint Paul's Hospital (Vancouver, Canada), remind us that the number of degenerated bioprostheses has been increasing over time and that surgical replacement of the failed prosthesis is still the first therapeutic option, but there is a strong appeal for minimally-invasive procedures. They acknowledge the limitations of valve-in-valve interventions, particularly the occurrence of a post-procedure elevated gradient (> 20 mmHg) in up to one-third of cases, and its association with a worse prognosis, highlighting their predictors (surgical valve stenosis and the transcatheter valve model used), recommending the implantation depth of the CoreValve and SAPIEN XT prostheses to prevent this phenomenon.

Another article worth mentioning that has an important contribution to the endovascular area is the study by Metzger et al., also from *Instituto Dante Pazzanese de Cardiologia*. These authors show the in-hospital and medium-term outcomes in patients with atherosclerotic lesions in the superficial femoral artery treated with third-generation superflexible stents. Interventions in this territory remain a challenge for interventionists due to compression, flexion, twisting, and rotational forces exerted by muscle compartments on the vessel wall, which can lead to stent fracture, with consequent prosthesis restenosis and occlusion. Freitas, Pitta, and Scheinert, from the University of Leipzig (Leipzig, Germany), in a corresponding editorial, summarize the main aspects of peripheral artery disease, drawing attention to its impact on quality of life and the current importance of endovascular interventions, which outweigh the number of surgical corrections in many specialized centers. They further call attention on the significant reduction of amputations in patients with critical lower-limb ischemia, the promising results of the latest generation of stents, and the need for randomized studies comparing the different available technical solutions.

Still within the field of structural heart disease interventions, Chamié et al., from *Hospital Federal dos Servidores do Estado* (Rio de Janeiro, RJ), demonstrate the results of percutaneous occlusion of the left atrial appendage in patients with atrial fibrillation and contraindications or complications associated with oral anticoagulation. The authors describe the procedure steps in detail, taking into account access to the left atrium, the anatomical analysis of the appendage and its variable morphology, the correct sizing of the prosthesis, and the characteristics of a significant periprosthetic residual flow. Additionally, they explain the strategy for dealing with a particularly challenging case of the series and present the results of medium-term patient follow-up.

This issue also features other articles of great interest, such as the early and late outcomes of patients undergoing percutaneous mitral valvuloplasty in a center with an intermediate volume of procedures, several topics related to percutaneous treatment of coronary disease, the results of ductal stenting in newborns and infants, and the results of interatrial septal defect occlusion guided by intravascular ultrasound.

Finally, we would like to highlight the contribution of Iberian countries to this edition, with case report and images in cardiovascular intervention from *Hospital Clínico San Carlos* (Madrid, Spain), *Centro Hospitalar de Trás-os-Montes e Alto Douro* (Vila Real, Portugal), and *Hospital Dr. Nélio Mendonça* (Funchal, Portugal).

Enjoy your reading!

Reference

1. Wenaweser P, Buellesfeld L, Gerckens U, Grube E. Percutaneous aortic valve replacement for severe aortic regurgitation in degenerated bioprosthesis: the first valve in valve procedure using the CoreValve revalving system. Catheter Cardiovasc Interv. 2007;70(5):760-4.

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DOI of original article: http://dx.doi.org/10.1016/j.rbci.2016.06.001