

Image in cardiology

New Quantitative Model of Aortic Valve in PreTAVI Patients



Nuevo modelo de cuantificación aórtica en pacientes pre-TAVI

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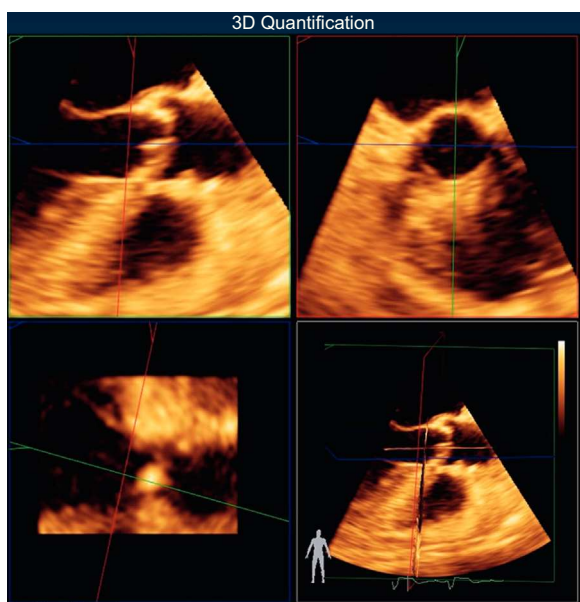


Figure 1.

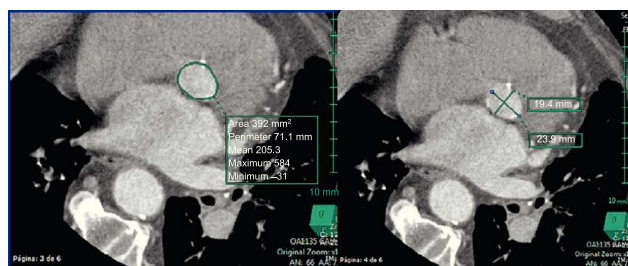


Figure 2.

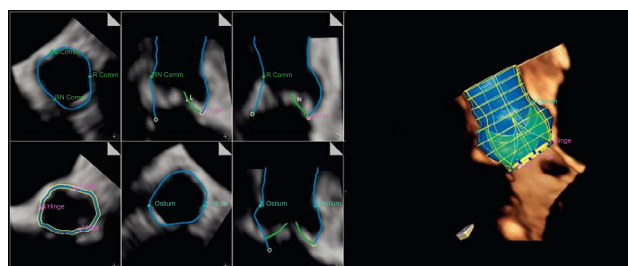


Figure 3.

Application of percutaneous techniques is a major advance in the field of structural cardiology that has been extended to a large number of diseases that were previously treated surgically or had no available treatment. Advancing these techniques requires a precise knowledge of cardiovascular anatomy, and the various imaging methods have become an indispensable tool in their development. To this end, a new specialized software has emerged, which can automatically configure—with minor manual changes—a geometric model of the aortic root from images obtained by 3-dimensional transesophageal echocardiography and perform quantitative analysis of these structures (Auto Valve Analysis, Siemens, California, United States). We present a case in which this new program was used for the preprocedure evaluation of transcatheter aortic valve implantation (TAVI). Aortic annulus measurement was 22×25 mm by 3-dimensional transesophageal echocardiography (Figure 1), 20×24 mm by computed tomography, (Figure 2), and 25 mm (Figure 3) with the new software. Ultimately, a 26-mm Edwards-SAPIEN XT aortic valve was successfully implanted.

The ability to predict the outcome of TAVI with image-based geometric models is one of the possibilities offered by this new software. Automatic handling of the images, with acquisition of a larger number of measurements than those evaluable manually, as well as the shorter time period needed and greater reproducibility, are some of the advantages of this software over the techniques available to date, such as echocardiography and computed tomography.

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