

Role of transeptal approach during TAVI in a patient with uncrossable severe bicuspid aortic stenosis



Papel del acceso transeptal en TAVI en un paciente con estenosis aórtica sobre válvula bicúspide incruzable

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CASE PRESENTATION

This is the case of an 82-year-old man with a past medical history of permanent atrial fibrillation, chronic obstructive pulmonary disease, and stable Alzheimer's disease admitted due to heart failure.

Transthoracic echocardiography revealed the presence of bicuspid aortic valve with severe aortic stenosis (maximum gradient, 76 mmHg; mean gradient, 48 mmHg), and a normal left ventricular ejection fraction (60%). During the examination, the coronary angiography documented the presence of proximal and middle right coronary artery severe stenosis treated with dual drug-eluting stent implantation. The baseline cardiac computer tomography angiography showed a bicuspid aortic valve type 1 with a noncoronary right calcified raphe and a 778.5 mm² area (figure 1).

After Heart Team discussion, transcatheter aortic valve implantation (TAVI) with balloon-expandable was decided. A 29 mm SAPIEN 3 Ultra valve (Edwards Lifesciences; United States) was scheduled. The patient's informed consent was obtained. A 16-Fr Edward sheath was inserted via right femoral arterial access, a 7-Fr pigtail catheter was placed into the ascending aorta via left femoral arterial access, and 6-Fr left femoral venous access was used for ventricular pacing lead placement.

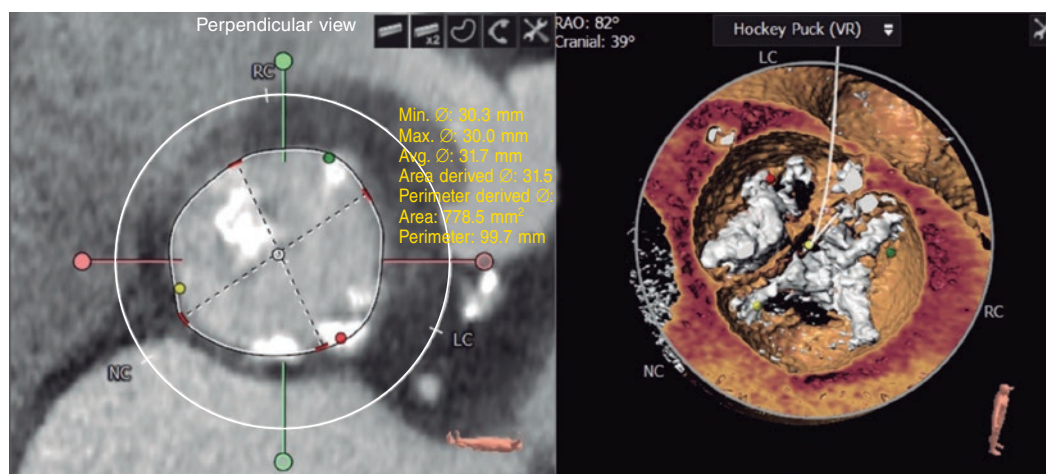


Figure 1. Computed tomography images. Left: valve measurements. Right: valve reconstruction. LC, left coronary; NC, noncoronary; RC, right coronary; VR, volume rendered.

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All attempts to cross the aortic valve proved ineffective following its severe calcification and complex anatomy despite many different catheters and wires were used by 3 different interventional cardiologists with great experience in TAVI in a center with a volume of 125 procedures each year. Given the numerous unsuccessful attempts made, a bailout solution was needed.

FUNDING

None whatsoever.

AUTHORS' CONTRIBUTIONS

J. Martínez-Sole, S. Lozano-Edo, and J. Sanz-Sánchez designed, drafted the manuscript, and were involved in the manuscript final approval. F. Ten-Morro, L. Andrés-Lalaguna, and J.L. Díez-Gil designed the study, conducted the manuscript critical review, and approved its final version for publication.

CONFLICTS OF INTEREST

None reported.

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Role of transeptal approach during TAVI in a patient with uncrossable severe bicuspid aortic stenosis. How would I approach it?



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HOW WOULD I APPROACH IT?

The authors present a case of retrogradely uncrossable aortic valve for transcatheter aortic valve implantation (TAVI). This happens with the valve introducer sheath in the femoral artery, and the remaining catheterized accesses. Therefore, a solution to implantation is needed since 1 of the basic steps is missing.

There are 3 situations when crossing a stenosed aortic valve can become especially difficult even for an experienced operator: one is stenosed surgical aortic valves where the ascending aorta is poorly dilated compared to the artificial valve. In this situation, building the latter prevents proper catheter alignment. Another situation is critical aortic stenosis due to small opening orifice. The third situation is bicuspid valves, as it is the case here, with an often dilated ascending aorta or a too vertical valvular plane that complicate maneuvers with the guide catheter. Also, because the bicuspid opening being eccentric often complicates steering the guidewires and the catheters through the valvular orifice.

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