New TAVI technique for difficult valve crossing

Nueva técnica para cruce valvular complicado en TAVI

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Figure 1.

This is the case of an 83-year-old man with symptomatic, severe aortic valve stenosis referred for transcatheter aortic valve implantation (TAVI). The echocardiogram revealed the presence of a severely calcified stenotic aortic valve (0.6 cm²) with bicuspid anatomy (figure 1A). The computed tomography scan revealed an Agatston calcium score of 17 727 (figure 1B), a 30 mm aortic annulus diameter, and dilated aortic root and aortic angulation > 70° (figure 1C). Aortography was performed (figure 1D).

Crossing the aortic valve with a guidewire for 60 min using catheters of various curves/sizes and several types of guidewires (with or without J-shaped tip, whether hydrophilic or not) was attempted by 2 highly skilled operators. Strategy, then, changed and a XB4 6F left coronary guide catheter (Cordis, United States) was used to manipulate a 0.014 inch hydrophilic Pilot 50 intracoronary guidewire (Abbott, United States) that easily crossed the aortic valve (figure 1E). A 6-Fr guide catheter extension system (Deeper, IHT-Cordynamic, Spain) was mounted on the wire and advanced to the left ventricular apex (figure 1F). Afterwards, the intracoronary guidewire was replaced by a 0.035 inch extra-stiff guidewire by removing both the guide and extension catheter systems (figure 1G). This original new approach took just 5 min.

The impossibility of crossing the aortic valve with a guidewire is rare. In our case the difficulty was due to a severely stenotic valve with massive calcification, bicuspid morphology, horizontal aorta, and dilatation of both the aortic root and the annulus.

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This case is a truly original and novel technique, simple and safe, to achieve the guidewire crossing of a very stenotic aortic valve with a complex anatomy. This technique illustrates the cross-over use of coronary and structural interventional tools to solve complex problems.

Consent was obtained from the patient for the publication of this case.

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AUTHORS' CONTRIBUTIONS

All authors contributed to data collection, drafting, review, and approval of the manuscript.

CONFLICTS OF INTEREST

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