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Correspondence

TAVR in a patient with an anomalous left main: Self-expanding prosthesis might be the preferred choice

The effect of transcatheter aortic valve replacement (TAVR) in patients with anomalous origin of the left coronary artery from the right coronary sinus is unknown. Prosthesis selection to optimize the clinical outcomes might be challenging in these cases and pre-TAVI imaging screening¹ is of great importance.

An 84-year-old man with a previous history of coronary artery bypass grafting (left internal mammary artery to left anterior descending artery and right internal mammary artery to posterior

descending artery) and percutaneous coronary intervention with drug-eluting stent implantation to the circumflex artery presented with severe symptomatic aortic stenosis and was referred for TAVR. Multislice computed tomography demonstrated the anomalous origin of the left coronary artery from the right coronary sinus with retro-aortic course (between the posterior sinus of Valsalva and the interatrial septum) (Fig. 1A, B). Giving the theoretical risk of compression of the anomalous circumflex during balloon

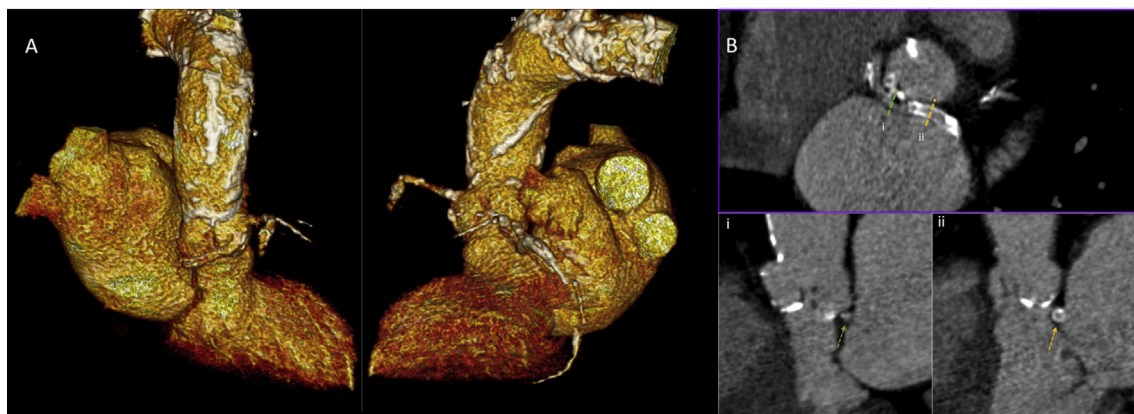


Fig. 1. A) 3D-reconstruction revealing the retroaortic course of the left coronary artery and its relation with the aortic annulus. B) Multislice computed tomography demonstrating the retroaortic course of the left coronary artery and sagittal plane demonstrating the proximal and the distal part of the course.

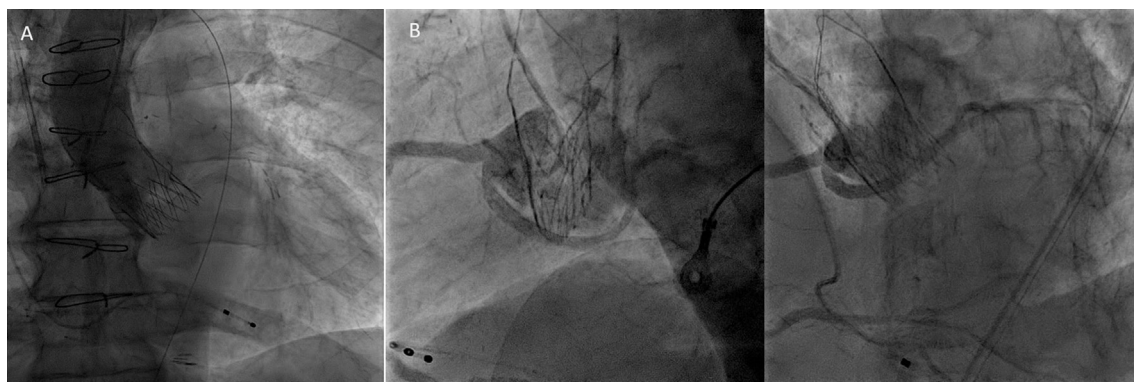


Fig. 2. A) Aortography after prosthesis deployment. Patency of the left coronary artery. B) Left coronary artery angiography confirming the patency of the left main after TAVR. Left lateral view (A) and LAO (Left Anterior Oblique)-cranial view (B).

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expandable prosthesis implantation, a self-expanding prosthesis was chosen. After predilatation with a 20-mm balloon, an Accurate Neo M (Boston Scientific, Massachusetts, US) valve was successfully implanted (Fig. 2A, Online Video 1). After prosthesis implantation, anomalous left main cannulation with a multipurpose catheter excluded a mechanical compression of the coronary artery (Fig. 2B, Online Video 2).

Supplementary video related to this article can be found at <https://doi.org/10.1016/j.hjc.2019.11.008>.

Acute circumflex occlusion by mechanical compression during TAVR with a balloon expandable prosthesis in a patient with an anomalous origin circumflex (with an interarterial course) has already been reported.² While, there are few reports of patients with interarterial course of left main where Corevalve (Medtronic; Minnesota, USA)³ and Sapien (Edwards Inc., Irvine, California)⁴ have been implanted without any periprocedural complications.

Our case provides insights into the potential impact of the prosthesis selection in cases of anomalous origin of coronary arteries. Low-radial force self-expanding device and coronary cannulation after prosthesis implantation to exclude mechanical coronary artery compression could be the preferred approach in such cases.

Conflict of interest

None of the authors have conflicts of interest to declare.

References

1. Latsios G, Spyridopoulos TN, Toutouzas K, et al. Multi-slice CT (MSCT) imaging in pretrans-catheter aortic valve implantation (TAVI) screening. How to perform and how to interpret. *Hellenic J Cardiol.* 2018;59:3–7.
2. Acosta-Velez JG, Garcia del Blanco B, Guindo J, et al. Acute artery occlusion during transcatheter aortic valve replacement in a patient with an anomalous origin of the circumflex artery. *JACC Cardiovasc Interv.* 2014;7:1324–1325.
3. Dursun H, Gonencer JZ, Karabay O, Erdal AC, Kaya D. TAVI in a patient with single coronary artery: The choice of self-expandable valve may be reasonable. *Balkan Med J.* 2016;33:357–359.
4. Giri J, Szeto WY, Bavaria J, Herrmann HC. Transcatheter aortic valve replacement with coronary artery protection performed in a patient with an anomalous left main coronary artery. *J Am Coll Cardiol.* 2012;60:e9.

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