Successful Repositioning of a Direct Flow Medical 25-mm Valve due to Acute Occlusion of Right Coronary Artery During Transcatheter Aortic Valve Replacement Procedure

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A 76-year-old female patient with symptomatic severe aortic stenosis was referred for transcatheter aortic valve replacement (TAVR) due to high risk for open-heart surgery (logistic EuroSCORE [European System for Cardiac Operative Risk Evaluation] 23.6%) (1,2). Screening computed tomography scan noted a low origin of the right coronary artery (7 mm) (Figure 1). The heart team...
decided to perform transfemoral TAVR with implantation of a repositionable valve (Direct Flow, Direct Flow Medical Inc., Santa Rosa, California).

A 25-mm Direct Flow valve was deployed, but angiography revealed occlusion of the right coronary artery (Figure 2, Online Videos 1 and 2). Deflation and repositioning the part of the valve near the native noncoronary cusp and right coronary cusp toward the left ventricular outflow tract was performed (Figure 3, Online Video 3). After this realignment, the valve was expanded again and selective angiography confirmed no compromise of the right coronary artery (Figure 4, Online Video 4). There was no evidence of peri-procedural myocardial infarction (3). The patient was discharged at day 7 and 30-day follow-up was uneventful.

The Direct Flow valve is a second-generation repositionable and retrievable TAVR device that offers advantages in avoiding periprocedural complications such as paravalvular leak and acute coronary occlusion (4). Intraprocedural anatomic and functional assessment can be obtained before finalizing valve positioning. Complications such as acute coronary occlusion may no longer be an issue with repositionable second-generation TAVR devices.

REFERENCES

KEY WORDS aortic valve stenosis, coronary occlusion, low origin of right coronary artery, transcatheter aortic valve replacement

APPENDIX For accompanying videos, please see the online version of this article.