A 78-year-old man presented with effort dyspnea and angina due to severe aortic stenosis and concomitant coronary artery disease. He underwent percutaneous transluminal coronary angioplasty with drug-eluting stents on the left main coronary artery and left anterior descending artery followed by transcatheter aortic valve replacement (TAVR) with implantation of a 25-mm Direct Flow Medical valve (Direct Flow Medical Inc., Santa Rosa, California). Repeat follow-up echocardiography showed good results of the procedure (mean gradient of 12 mm Hg) without any leak and with normal left ventricular ejection fraction. He presented 3 years later with dyspnea and angina, with symptoms starting a few weeks after the patient stopped taking clopidogrel, but he continued taking acetylsalicylic acid.

The patient was evaluated with transthoracic echocardiography that showed impaired mobility of the noncoronary cusp with turbulent flow (Figure 1, Online Video 1) and increased gradients (mean gradient of 45 mm Hg). Subsequent evaluation with transesophageal echocardiography (Figure 2A, Online Videos 2 and 3) and computed tomography scan (Figures 2B to 2D) confirmed thickened noncoronary and left cusps. Warfarin therapy was therefore started, and 10 days later echocardiography showed a complete normalization of valve thickness (Figure 3) and function, with a mean gradient of 15 mm Hg, thus confirming the clinical hypothesis of prosthesis thrombosis.

The optimal antithrombotic regimen and duration after TAVR is as yet unknown (1). This case...
highlights that thrombosis can occur many years after replacement of the valve. The current case is also unusual because the thrombosis appears to have a temporal association with discontinuation of dual antiplatelet therapy, thus contributing to the discussion of whether antiplatelet or anticoagulant therapy is required after TAVR. We also do not know whether different valve designs will require different treatment regimens. Finally, this case demonstrates importance of a high index of suspicion in TAVR patients presenting with new-onset symptoms and the utility of multi-modality imaging to differentiate valve degeneration from this reversible cause of valve dysfunction (2,3).

REFERENCES


REPRINT REQUESTS AND CORRESPONDENCE: Dr. Azeem Latib, EMO-GVM Centro Cuore Columbus, Via Buonarroti 48, 20145 Milan, Italy. E-mail: alatib@gmail.com.

KEY WORDS aortic stenosis, thrombosis, transcatheter aortic valve implantation

FIGURE 2 Transesophageal Echocardiography and Computed Tomography Scan

(A) Transesophageal echocardiography shows a thickened noncoronary cusp (red arrow) with a hyperechoic mass inside the prosthetic valve (Online Videos 2 and 3). Multidetector computed tomography evaluation (sagittal plane [B], axial plane [C], and frontal plane [D]) demonstrates a low-attenuation mass on noncoronary cusp (NC) and left cusp (LC) (red arrows), consistent with thrombus formation.

FIGURE 3 Transthoracic Evaluation After Warfarin Therapy

The parasternal long-axis view shows complete resolution of the cusp thickening with normal mobility of the NC and RC after 10 days of anticoagulation with warfarin. Abbreviations as in Figure 1.