Aortic Valve Cusps Decalcification Complicated by an Embolic Myocardial Infarction Treated by Transradial Intracoronary Embolectomy

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An 81-year-old woman with severe aortic valve (AV) stenosis symptomatic for effort angina pectoris on exertion (New York Heart Association functional class III) underwent an “AV decalcification procedure” without prosthetic valve implantation. Pre-operative coronary angiography had revealed a saccular aneurysm of the proximal part of the left anterior descending coronary artery (LAD) and a mild diffuse atherosclerosis without significant stenosis. Intraoperative transesophageal echocardiogram showed a good result of the surgical procedure. On the sixth post-operative day, the patient complained of intense typical chest pain, with the 12-lead electrocardiogram showing ST-segment elevation in anterolateral. Coronary angiography showed that the LAD was abruptly and subtotally occluded in the middle part by a material that did not look like thrombus, with Thrombolysis In Myocardial Infarction flow grade 1 to 2 (Figure 1, Online Video 1). We advanced a filter device (Embolic Protection System, Filter Wire EZ, Boston Scientific, Natick, Massachusetts) in the distal part of the LAD to capture the embolized material through the withdrawal of the basket in the “open setting” (Figure 2, Online Videos 2 and 3). Coronary angiography and an intravascular ultrasound study (Eagle Eye Platinum catheter, Volcano Corporation, Rancho Cordova, California) confirmed the complete removal of the embolic material and the absence of intraluminal thrombus also within the large saccular aneurysm (Figure 3, Online Video 4). The patient was discharged on single antiplatelet therapy (acenocoumarol). Histological examination of the specimen extracted from the LAD documented the presence of calcified material (Figure 4). Coronary artery embolism is an uncommon...
FIGURE 2 Embolized Material Extracted by the Filter Device

The removed filter device appeared free of thrombotic or embolic material with evidence of rupture and amputation of the distal part of the basket. (A and B) Voluminous foreign body, consisting of calcified material mixed with tissue fragments coated by the distal part of the filter basket. Filter device (Embolic Protection System) with "basket" open in the distal part of the LAD (Online Video 2), and filter device retrieval (Online Video 3).

FIGURE 3 Post-Procedural Left Coronary Angiography and IVUS Study

(A) The angiography showed a restored antegrade coronary Thrombolysis In Myocardial Infarction flow grade 3 in the absence of distal embolization and/or migration of thrombotic material in the LAD and collateral branches after removing the solid clot in the LAD. The coronary angiography showed no visible thrombus in the LAD or at the level of the diagonal branch (Online Video 4). (B) Intravascular ultrasound (IVUS) study of LAD confirmed the complete removal of the embolic material from the vessel and the absence of intraluminal thrombus (also within the large saccular aneurysm), significant atherosclerotic lesions, or iatrogenic dissection. LAD = left anterior descending coronary artery.
complication after cardiac valve surgery. The “direct” application of a filter device to remove a solid embolus in coronary vessels may be a safe and effective therapy, as we described, and may be a valuable option to manage this rare complication.

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**Appendix** For supplemental videos, please see the online version of this article.