A 65-year-old man with a permanent pacemaker placed for atrioventricular block presented to the emergency department with 4 days of fever, gastrointestinal complaints, and back pain. On presentation, he was febrile, tachycardic, and hypotensive, with a significant leukocytosis. Urine and blood cultures grew methicillin-sensitive Staphylococcus aureus in 6/6 bottles. The patient was initiated on appropriate antibiotic coverage, including nafcillin, resulting in sterilization of blood cultures. Transesophageal echocardiography revealed a vegetation on the pacing wire, likely involving the tricuspid valve, necessitating removal of the pacing lead (online-only Data Supplement Movies I and II). Four weeks into his antibiotic course, continued fevers along with a new holosystolic murmur at the apex of his heart prompted repeat echocardiography, which revealed a persistent mobile echodensity on the tricuspid valve and a new mobile echodensity on the mitral valve, as well, associated with severe mitral regurgitation (online-only Data Supplement Movie III). The patient was considered for valve replacement surgery, and preoperative coronary angiography was performed. Figure 1A shows multiple mycotic aneurysms (arrows) in coronary vessels that were not present 4 months earlier (Figure 1B). Based on the involvement of multiple epicardial vessels, and in light of the patient’s clinical status (which included difficult-to-control gastrointestinal bleeding and renal insufficiency), a decision was made to treat the patient conservatively with antibiotics. The patient defervesced, remained hemodynamically stable, and finished a 12-week course of nafcillin.

Despite aggressive medical management of his valvular disease, he presented to the clinic 6 months later with shortness of breath, cyanosis, ascites, and lower-extremity edema. Repeat transesophageal echocardiography revealed severe mitral regurgitation (online-only Data Supplement Movie IV) and moderate tricuspid regurgitation. He was admitted for medical optimization of his congestive heart failure before cardiac surgery. Regadenoson positron emission tomography myocardial perfusion imaging revealed a large area of ischemia in the left anterior descending and circumflex artery distributions (Figure 2). Repeat cardiac catheterization revealed enlargement and septation of the aneurysms (Figure 3). He underwent mitral valve repair with chordoplasty to A1 and A2 and coronary artery bypass grafting with left internal mammary artery to the left anterior descending artery, saphenous vein graft to the obtuse marginal artery, and saphenous vein graft to the posterior descending artery and left posterior left ventricular branch. His postoperative course was uncomplicated, his breathing improved, and repeat transthoracic echocardiography showed only mild mitral regurgitation (online-only Data Supplement Movies V and VI).

From the Division of Cardiology, Department of Medicine, Massachusetts General Hospital, Boston, MA (M.P.); Division of Internal Medicine, Department of Medicine, Brigham and Women’s Hospital, Boston, MA (J.W.C.); and Division of Cardiovascular Disease, Department of Medicine, Brigham and Women’s Hospital, Boston, MA (B.W., M.S.S., F.S.R.).

The online-only Data Supplement is available with this article at http://circ.ahajournals.org/lookup/suppl/doi:10.1161/CIRCULATIONAHA.110.982702/-/DC1.

Correspondence to Marcello Panagia, MD, DPhil, Massachusetts General Hospital, 55 Fruit St, YAW 5700, Boston, MA 02144. E-mail mpanagia@partners.org

(Circulation. 2012;125:1316-1317.)

© 2012 American Heart Association, Inc.

Circulation is available at http://circ.ahajournals.org

DOI: 10.1161/CIRCULATIONAHA.110.982702

Figure 1. A, Coronary angiography of the coronary arteries showing multiple, large mycotic aneurysms that were not present on previous angiography (B).
Movie V). He has had no evidence of congestive heart failure and has been recovering well at home.

Mycotic aneurysms secondary to infective endocarditis most commonly arise in the intracranial arteries. Coronary artery aneurysms are an uncommon disease, most often attributed to trauma, atherosclerosis, vasculitis, and congenital causes. Mycotic coronary artery aneurysms may cause symptoms in a small proportion of patients with infective endocarditis, although an increasing number of subclinical cases are being recognized during cardiac catheterization. These aneurysms are related to infective endocarditis and are thought to be caused by local or microembolic spread of infection to the vasa vasorum, or immune complex mediated injury. If left untreated, mycotic coronary artery aneurysms are at risk for rupture, thrombosis, and further embolization.

Although data are lacking, previous reports suggest that small mycotic aneurysms may resolve with appropriate antibiotic therapy. Larger aneurysms should be surgically removed from the circulation either by an interposition graft or distal bypass. However, if the infection is active, bypass may be preferred to prevent graft infection. To our knowledge, this is the first reported case of multiple mycotic coronary artery aneurysms secondary to infective endocarditis involving multiple epicardial vessels.

Disclosures

None.

References


Figure 2. Regadenoson positron emission tomography myocardial perfusion imaging showing a large area of ischemia in the left anterior descending artery and left circumflex artery distributions.

Figure 3. Repeat coronary angiography showing persistence and enlargement of multiple mycotic aneurysms.
A Rare Complication of Infective Endocarditis
Marcello Panagia, Brion Winston, James W. Click, Marc S. Sabatine and Frederic S. Resnic

Circulation. 2012;125:1316-1317
doi: 10.1161/CIRCULATIONAHA.110.982702
Circulation is published by the American Heart Association, 7272 Greenville Avenue, Dallas, TX 75231
Copyright © 2012 American Heart Association, Inc. All rights reserved.
Print ISSN: 0009-7322. Online ISSN: 1524-4539

The online version of this article, along with updated information and services, is located on the World Wide Web at:
http://circ.ahajournals.org/content/125/10/1316

Data Supplement (unedited) at:
http://circ.ahajournals.org/content/suppl/2012/03/12/125.10.1316.DC1

Permissions: Requests for permissions to reproduce figures, tables, or portions of articles originally published in Circulation can be obtained via RightsLink, a service of the Copyright Clearance Center, not the Editorial Office. Once the online version of the published article for which permission is being requested is located, click Request Permissions in the middle column of the Web page under Services. Further information about this process is available in the Permissions and Rights Question and Answer document.

Reprints: Information about reprints can be found online at:
http://www.lww.com/reprints

Subscriptions: Information about subscribing to Circulation is online at:
http://circ.ahajournals.org//subscriptions/