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Apicoaortic Valve–Containing Conduit in a Patient With Relapsing Prosthetic Endocarditis

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A 58-year-old man with a history of 2 previous aortic valve replacements, one of which was a single vein graft to the right coronary artery, was referred to our hospital for repair of relapsing prosthetic endocarditis with annular abscess (Figure 1 and Data Supplement Movie I).

The patient was again taken to the operating theater, where a median sternotomy was performed and cardiopulmonary bypass was installed through aorto-right atrium cannulation. Intraoperatively, the need for the implantation of an apicoaortic conduit arose from both the profound paravalvular leakage and the inability to implant a new aortic valve prosthesis. The left ventricular outflow tract was closed with a patch of bovine glutaraldehyde-fixed pericardium (Figure 2). A circumferential Teflon ring with an adherent 30-mm Hemashield conduit and a 27-mm St. Jude Medical aortic valve-carrying Hemashield conduit was sewn onto the left ventricular apex at 1 end and in an end-to-side fashion into the ascending aorta at the other (Figure 3). The reason for the insertion in the ascending aorta was to guarantee sufficient coronary perfusion.

Two months after the operation, 3- and 4-dimensional views of the heart taken by computed tomography and echocardiography show the functional apicoaortic valve–containing conduit (Figure 4 and Data Supplement Movies II through V).

Disclosures

None.

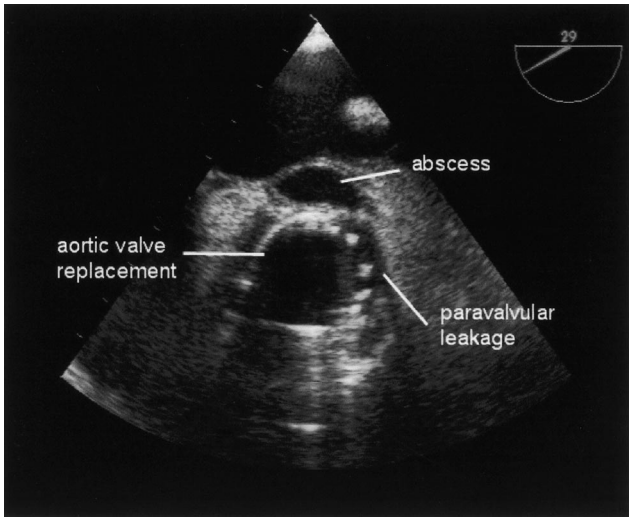

Figure 1. Transesophageal echocardiography reveals a giant circular paravalvular leakage and an abscess formation around the prosthetic aortic valve. The annulus was almost completely destroyed.

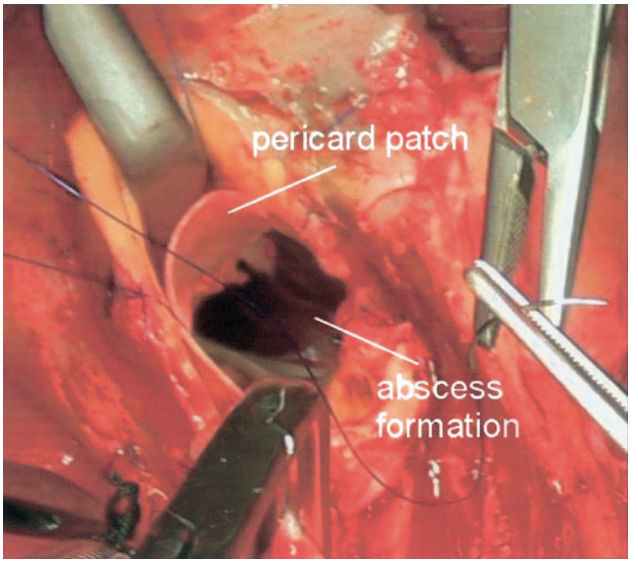

Figure 2. Intraoperative photograph shows the inside of the abscess formation on the left ventricular outflow tract, which was closed with a patch of bovine glutaraldehyde-fixed pericardium.

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The online-only Data Supplement, which contains movies, can be found at http://circ.ahajournals.org/cgi/content/full/116/4/e88/DC1.

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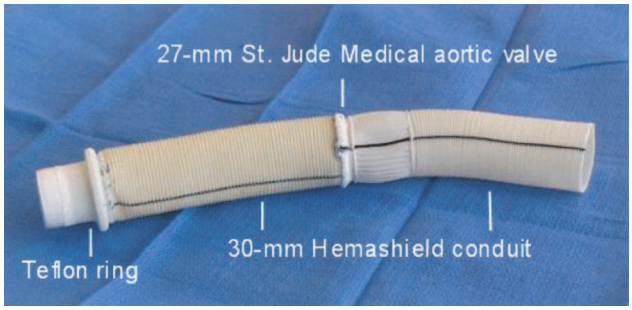

Figure 3. Intraoperative photograph of the apicoaortic valve–containing conduit taken before implantation. The conduit consists of a circumferential Teflon ring with an adherent 30-mm Hemashield conduit and a 27-mm St. Jude Medical aortic valve–carrying Hemashield conduit.

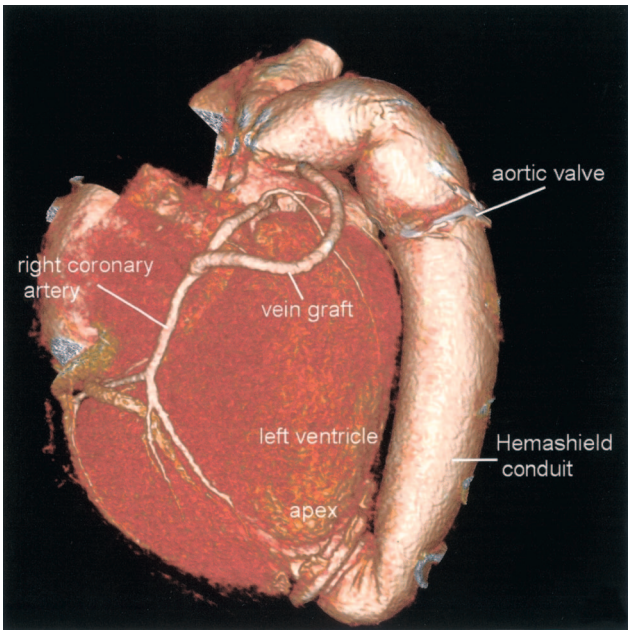

Figure 4. Visualization of the apicoaortic valve–containing conduit as well as the previous bypass graft to the right coronary artery by 64-slice row spiral multidetector computed tomography reconstruction.