

# Circulation

JOURNAL OF THE AMERICAN HEART ASSOCIATION



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Benno J. Rensing, Robert Jan van Geuns, Maarten Janssen, Matthijs Oudkerk and Pim J. de Feyter

*Circulation* 2000;101:188-190

Circulation is published by the American Heart Association, 7272 Greenville Avenue, Dallas, TX 75214

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## Stentocarditis

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The patient was a 67-year-old man who had received 3 single venous aortocoronary bypass grafts in 1978. He remained free of symptoms until mid-1998, when he was admitted with unstable angina. Angiography revealed severe stenoses in the vein grafts to both the right coronary artery (RCA) and the obtuse marginal (OM) branch of the circumflex artery. Three stents were successfully implanted in the OM graft, and 1 stent was implanted in the graft to the RCA. The postprocedural course was uneventful, and the patient was discharged the next day. Four days later, however, he was readmitted with high fever, chills, and malaise. Blood cultures were repeatedly positive for *Staphylococcus aureus*, and treatment with intravenous antibiotics was begun. During admission, he developed chest pain, with minimal ST-segment depression in the inferolateral ECG leads. Creatine phosphokinase levels rose to 1500 IU/L (normal <240 IU/L). An extensive search for the source of the infection was negative. We decided to perform an electron-beam tomographic (EBT, or ultrafast CT) examination of the thorax to look for a pulmonary, mediastinal, or cardiac source for the infection and to check bypass graft patency.

Forty ECG-triggered, contrast-enhanced, consecutive tomograms were made at inspiration, starting just above the aortic arch. Tomogram thickness was set at 3 mm, with a 2-mm table increment after each scan. Acquisition time was 100 ms. Contrast (150 mL) was injected at 4 mL/s through an arm vein. 3D volume renderings were made with Voxel View software on a Silicon Graphics workstation.

The graft to the OM branch was found to be occluded (Figure 1). Anterolateral to the ascending aorta, a large mass was visible (Figure 2). The first and second stents of the OM graft were visible within the mass (Figure 2). Late contrast enhancement of the wall of the mass was shown with an extra set of 15 tomograms over the upper anterior mediastinum 2 minutes after contrast injection (Figure 2). This is very suggestive of an abscess.

The patient responded favorably to the medical treatment. Infection parameters normalized, and after 6 weeks of treatment with intravenous antibiotics, he could be discharged. A repeat EBT investigation 4 months later showed complete disappearance of the abscess (Figure 3). The graft to the OM branch remained occluded.

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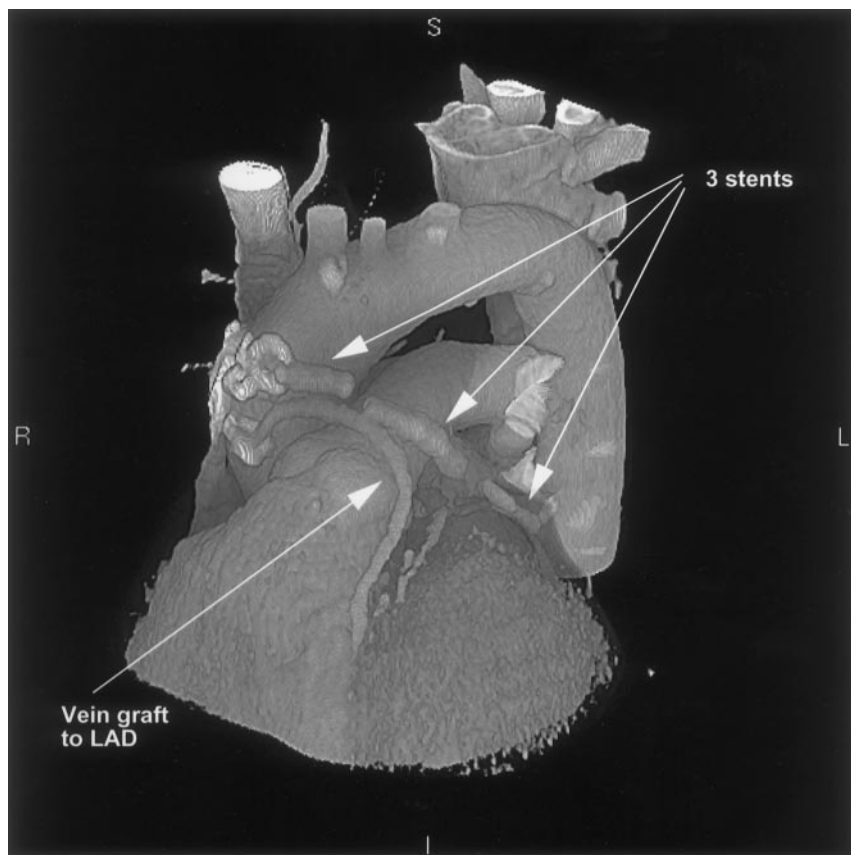
The editor of Images in Cardiovascular Medicine is Hugh A. McAllister, Jr, MD, Chief, Department of Pathology, St Luke's Episcopal Hospital and Texas Heart Institute, and Clinical Professor of Pathology, University of Texas Medical School and Baylor College of Medicine.

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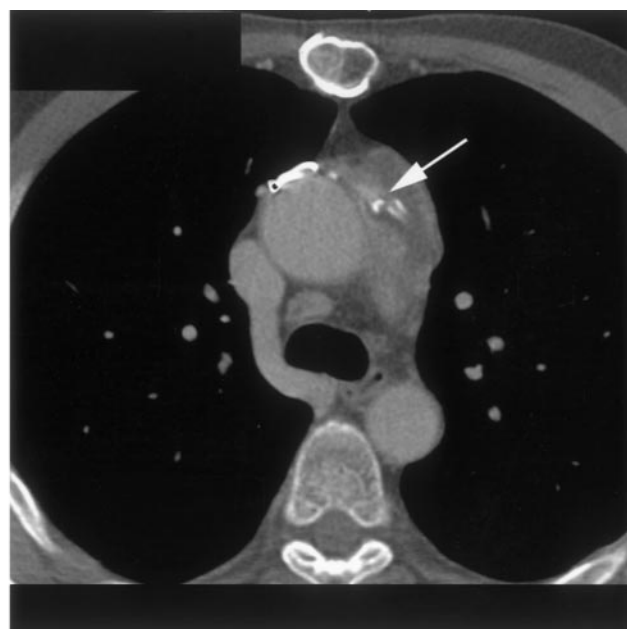
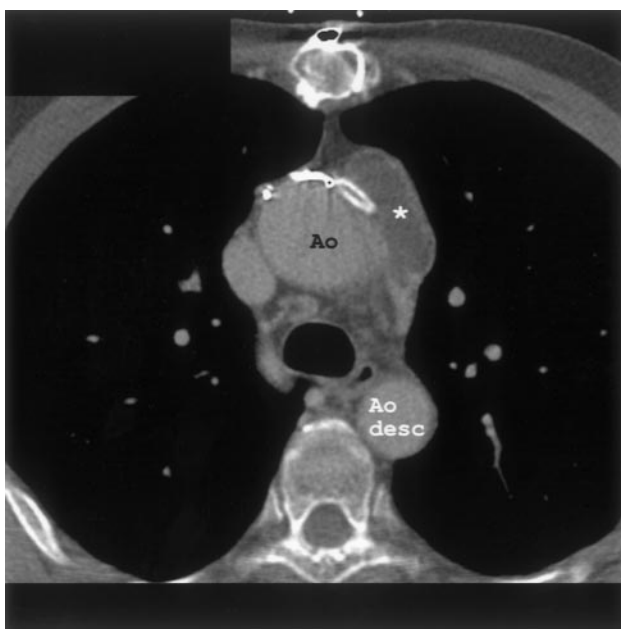
(Circulation. 2000;101:e188-e190.)

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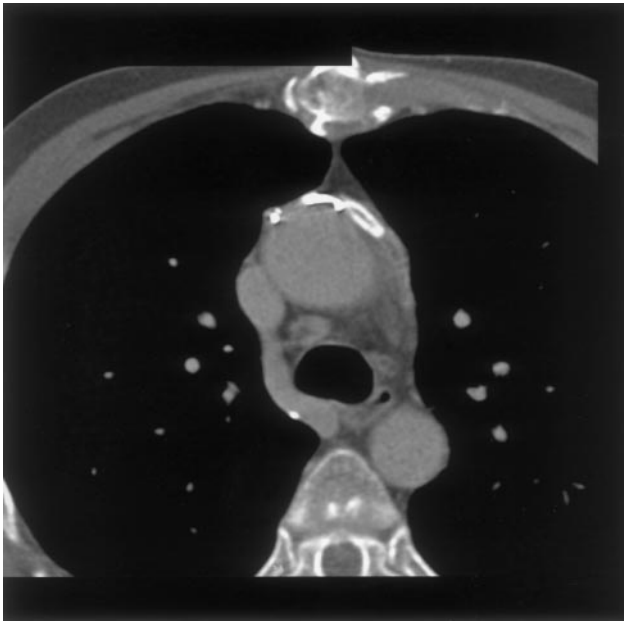
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**Figure 1.** Volume rendering of basal part of heart and great vessels. Patent single vein graft to left anterior descending coronary artery (LAD) and its course over pulmonary artery is indicated. Three radiopaque stents in occluded vein graft to OM branch are indicated. Graft occlusion can be deduced by lack of contrast material visible between stents.



**Figure 2.** Single EBT tomograms at level of upper anterior mediastinum acquired 2 minutes after contrast injection. Left, Lateral and anterior to ascending aorta (Ao), a mass is visualized (asterisk). Wall of mass is contrast-enhanced. This is very suggestive of an abscess. Dense structure traversing mass from medial-anterior to lateral-posterior are stent struts of first stent in occluded vein graft. Right, Tomogram acquired 2 levels lower. At arrow, both first and second stents are visible within abscess.



**Figure 3.** Single EBT tomogram acquired 4 months later at same level as Figure 2, left. Mass has completely disappeared.