Saphenous Vein Graft Aneurysm

Linda Cadaret, MD; William Cotts, MD; Wayne Richenbacher, MD

A 58-year-old white woman who had undergone 3-vessel coronary artery bypass graft surgery in 1988 presented with a 5-month history of chest pressure at rest. At the time of her coronary artery bypass operation, the left internal mammary artery (LIMA) was used to graft the left anterior descending coronary artery (LAD). Separate saphenous vein grafts (SVGs) were placed to the obtuse marginal branch (OM) of the left circumflex (LCx) and posterior descending (PDA) coronary arteries.

A chest roentgenogram revealed a mass in the middle mediastinum near the left pulmonary artery (Figure 1). Computed tomography (CT) of the patient’s chest identified the mass as a 7×7×4-cm aneurysm of the SVG to the OM (Figure 2). The aneurysm contained swirling contrast and laminated thrombus. Also, the aneurysm compressed the left pulmonary artery.

Coronary angiography revealed a right-dominant system with a normal left main coronary artery. There was an 80% stenosis of the mid LAD and total occlusion of the proximal LCx and right coronary arteries. There was a 70% stenosis of the SVG to the OM, with a mid/distal aneurysm containing thrombus. There was an 80% stenosis of the SVG to the PDA and severe diffuse disease of the LIMA.

At surgery, the LAD and PDA were bypassed with SVGs. The aneurysm of the SVG to the OM was resected (Figure 3). The diminutive OM was too small to be regrafted. The aneurysm contained laminated thrombus and an eccentric channel for blood flow (Figure 4). The patient recovered uneventfully and was discharged on postoperative day 6.

Figure 1. Chest roentgenogram revealing middle mediastinal mass (arrows).

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Figure 2. CT of patient’s chest. Vein graft aneurysm contains laminated thrombus and an eccentric, contrast-filled lumen (arrows).

Figure 3. Intraoperative view of mediastinum taken from right side of operating table with patient’s head to left. Proximal end of obtuse marginal SVG is normal in caliber. Aneurysmal midportion of graft (AN, arrows) is visible between mammary artery pedicle and reflected pericardium (P, arrowheads).
Figure 4. Cross section through resected aneurysm. Aneurysm is filled with thrombus at various stages of organization, and channel for blood flow is eccentric (arrows).
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