

## IMAGES IN INTERVENTION

## Emergency Treatment of a Ruptured Giant Aneurysm in a Saphenous Vein Graft

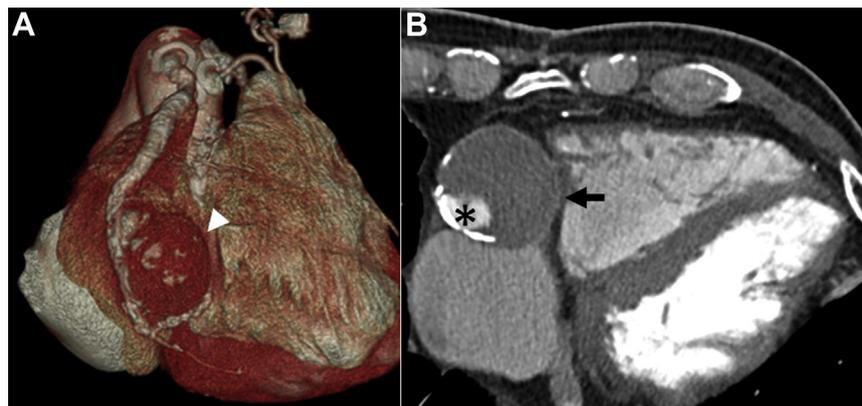


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An asymptomatic physically active 66-year man with a history of coronary artery bypass surgery and mitral valve replacement underwent computed tomography angiography (CTA) to evaluate the patency of the bypass grafts. CTA revealed a giant 4 cm × 4 cm aneurysm of an ectatic saphenous vein graft (SVG) near the anastomosis with the posterior descending artery (PDA) (Figures 1A and 1B). Due to the patient's lack of symptoms and the perceived risk associated with surgical or percutaneous treatment of the aneurysm it was decided to

follow him noninvasively with serial CTA studies. One month later the patient sustained a cardiac arrest with electrocardiographic evidence of inferior ST-segment elevation myocardial infarction. Emergency angiography revealed rupture of the SVG aneurysm (Figure 2 and Online Video 1) with occlusion of the PDA and echocardiographic evidence of localized tamponade. The patient's hemodynamic collapse was attributed to a combination of cardiac tamponade and extensive myocardial ischemia and decision was made to restore flow to the PDA and to seal the SVG

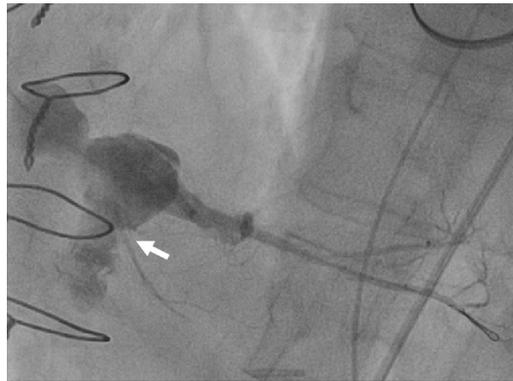
**FIGURE 1** Computed Tomography Angiography of the Aneurysm



(A) Computed tomography angiography 3-dimensional reconstruction showing a giant 4 cm × 4 cm vein graft aneurysm (arrowhead) near the anastomosis with the posterior descending artery. (B) Axial view showing the partially thrombosed aneurysm (arrow) with a patent lumen (asterisk).

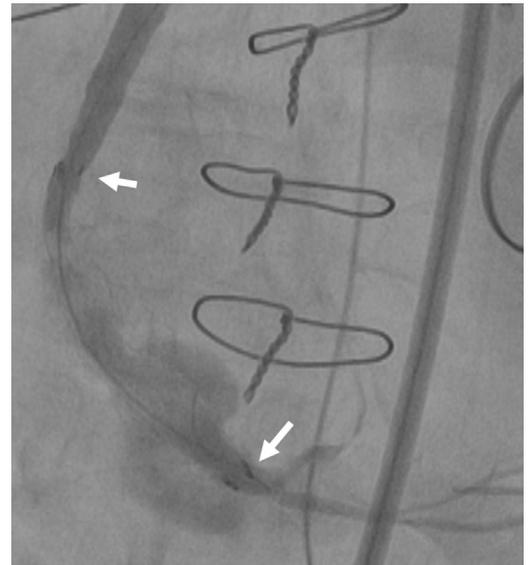
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**FIGURE 2** Coronary Angiography of the Ruptured Aneurysm

Coronary angiography of ruptured aneurysm (arrow) ([Online Video 1](#)).

rupture. Following stenting of the PDA with a 2.25 mm × 15 mm XIENCE Xpedition coronary stent (Abbott Vascular, Abbott Park, Illinois) the coronary guidewire was exchanged for a 0.035" polymer-coated guidewire (Terumo, Tokyo, Japan) via a GuideLiner catheter (Vascular Solutions, Minneapolis, Minnesota). The 6-F femoral sheath was exchanged for a 9-F sheath (90 cm length), which was inserted into the SVG over the 0.035" guidewire. Following deployment of a 9 mm × 60 mm fluency stent graft (Bard Medical Division, Covington, Virginia) within the SVG across the mouth of the ruptured aneurysm ([Figure 3](#) and [Online Video 2](#)) the patient stabilized hemodynamically with ST-segment elevation resolution on the electrocardiography. The patient remained unconscious due to anoxic brain damage and died 1 month later. In

**FIGURE 3** Final Coronary Angiography

Final angiography following implantation of 9 mm × 60 mm fluency stent graft (stent edges marked by arrows) ([Online Video 2](#)).

view of the positive relationship between the size of SVG aneurysms and risk of complications, early treatment of large asymptomatic SVG aneurysms should be considered ([1](#)).

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## REFERENCE

1. Ramirez FD, Hibbert B, Simard T, et al. Natural history and management of aortocoronary saphenous vein graft aneurysms: a systematic review of published cases. *Circulation* 2012;126:2248-56.

**KEY WORDS** aneurysm, rupture, saphenous vein graft, stent graft

**APPENDIX** For supplemental videos and their legends, please see the online version of this article.