Rapid Progression of a Saphenous Vein Graft Aneurysm Followed as a Thymoma

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A 76-year-old man who had undergone 2-vessel coronary artery bypass graft (CABG) operation 21 years ago was diagnosed with myasthenia gravis and had been under follow-up for the past 3 years. An anterior mediastinal mass was detected with chest x-ray, and he was consulted by a thoracic surgeon for a possible thymoma. Computed tomography (CT) scans revealed that the mass could be an aneurysm originating from saphenous vein graft (SVGA) or from the aorta. The patient was referred to the cardiovascular surgery department.

The results of his physical examination were normal. ECG showed R-wave progression loss in leads V_1 through V_3 and sinus rhythm. Echocardiography showed mild apical hypokinesia with an ejection fraction of 57%. Although there was nothing evident on chest x-ray 3 years before, a new chest x-ray showed a circular mediastinal mass of 8.7×7.5 cm (Figures 1 and 2). Because he had previously had a CABG operation, he was consulted by a cardiologist, and coronary angiography was performed. Angiography showed an occluded left internal mammary artery to the left anterior descending coronary artery graft, and saphenous vein graft to the diagonal artery was not visualized. CT angiography was scheduled.

Previous CT scans were reexamined, and a saphenous vein aneurysm was detected that was also present 3 years earlier. At that time, CT reports depicted the mass as a possible thymoma or an aneurysm originating from the aorta with the dimensions of 2.5×2.3 cm, but the differential diagnosis was not made (Figure 3). Hounsfield units also did not allow for discrimination of thymoma from other pathologies. After having new dedicated ECG-triggered CT angiography of both coronary arteries and the mediastinum, it was clear that the mass was an aneurysm originating from saphenous vein graft of diagonal artery, and the left anterior descending coronary artery was suitable for a CABG operation. Dimension of the aneurysm was 8.6×7.5 cm, which had showed rapid progression in past 3 years (Figures 4 and 5).

The patient underwent resection of aneurysm, ligation of saphenous vein graft (Figure 6), and aortocoronary bypass to the left anterior descending coronary artery with a saphenous vein graft. The operation and postoperative period were uneventful. The patient received 2 sequences of plasmapheresis for myasthenia gravis and was put on mestinon treatment. The patient was discharged on the eighth postoperative day.

Saphenous vein aneurysms are a rare but fatal complication of CABG. They occur at an estimated rate of <1%.[1] The development of SVGAs usually occurs 10 to 20 years after operation.[2,3] The symptoms may not be so clear. SVGA is usually diagnosed as a result of suspicion.

SVGAs are usually detected as mediastinal or hilar masses on chest roentgenogram. In case of mediastinal masses with a history of CABG, SVGAs must be kept in mind. CT and magnetic resonance imaging studies are used for differential diagnosis and for excluding other pathologies. Coronary angiography must be obtained if suspicion of SVGAs exists, but it may not give enough information as in this case. More detailed information can be obtained by 3-dimensional CT scans[4] or dedicated ECG-triggered CT angiography.

Disclosures

None.

References

1. Williams ML, Rampersaud E, Wolfe WG. A man with saphenous vein graft aneurysms after bypass surgery. *Ann Thorac Surg*. 2004;77:1815–1817.
2. Tavilla G. Giant saphenous vein graft aneurysm resection during off-pump coronary artery bypass grafting. *Eur J Cardiothorac Surg*. 2006;30:191.
3. Sugimoto T, Yamamoto K, Yoshii S, Shimada K, Katsu M, Iida Y, Kasuya S. Large saphenous vein graft aneurysm with a fistula to the right atrium. *Ann Thorac Cardiovasc Surg*. 2006;12:435–437.
4. Tarmiz A, Lopez S, Rousseau H. Pseudoaneurysm of a saphenous vein graft after coronary artery bypass graft surgery. *Arch Cardiovasc Dis*. 2009;102:731–732.

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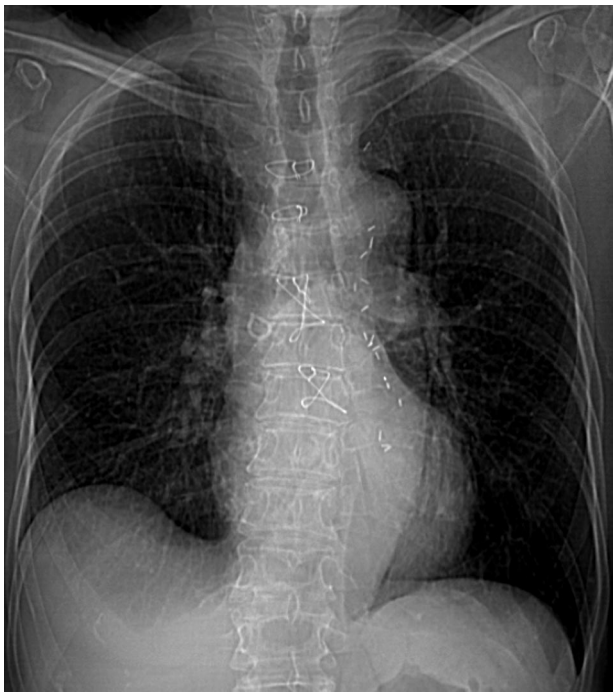


Figure 1. Chest x-ray 3 years before.

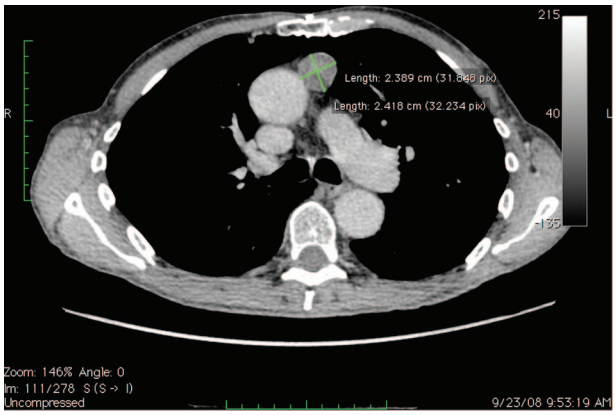


Figure 3. Thorax CT scan of patient showing SVGA 3 years before. CT, computed tomography; SVGA, saphenous vein graft aneurysm.

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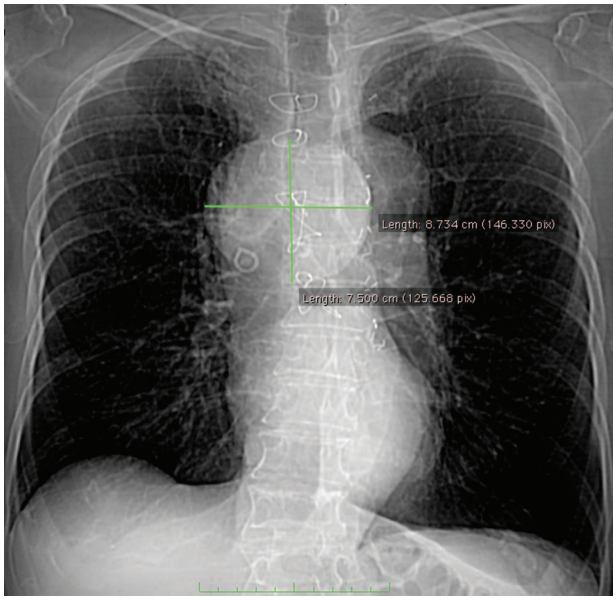


Figure 2. Chest x-ray before operation.

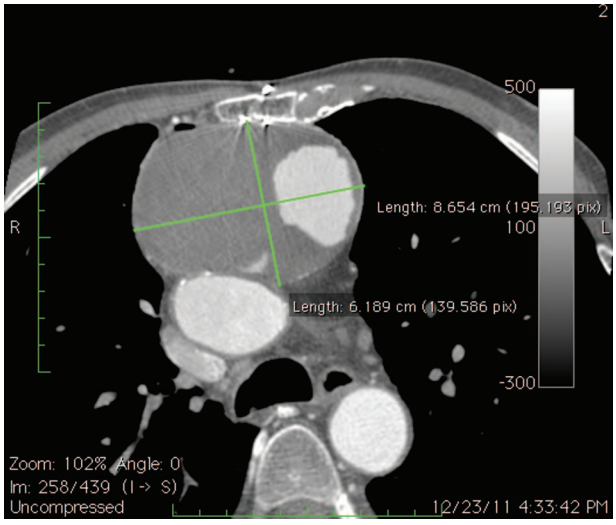


Figure 4. Dedicated ECG-triggered CT angiography showing SVGA at admission. CT, computed tomography; SVGA, saphenous vein graft aneurysm.



Figure 5. Lateral view of SVGA. SVGA, saphenous vein graft aneurysm.

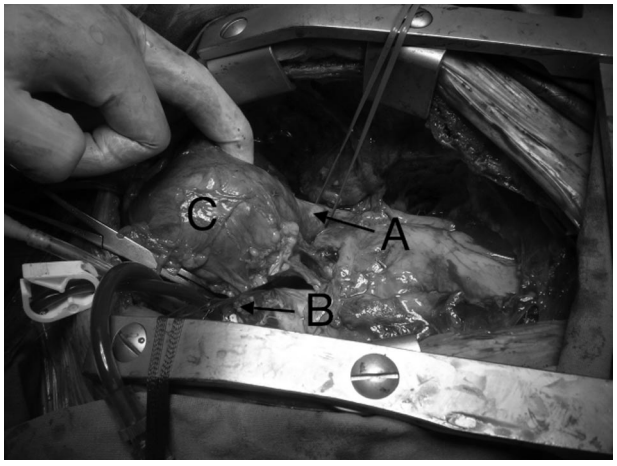


Figure 6. A, Distal portion of saphenous vein graft to diagonal artery. **B**, Proximal anastomosis and radiopaque marker of saphenous vein graft. **C**, Saphenous vein graft aneurysm.

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