SAPHENOUS VEIN GRAFT ANEURYSM

John Buergler
From Methodist OeBakey Heart Center, Houston, Texas

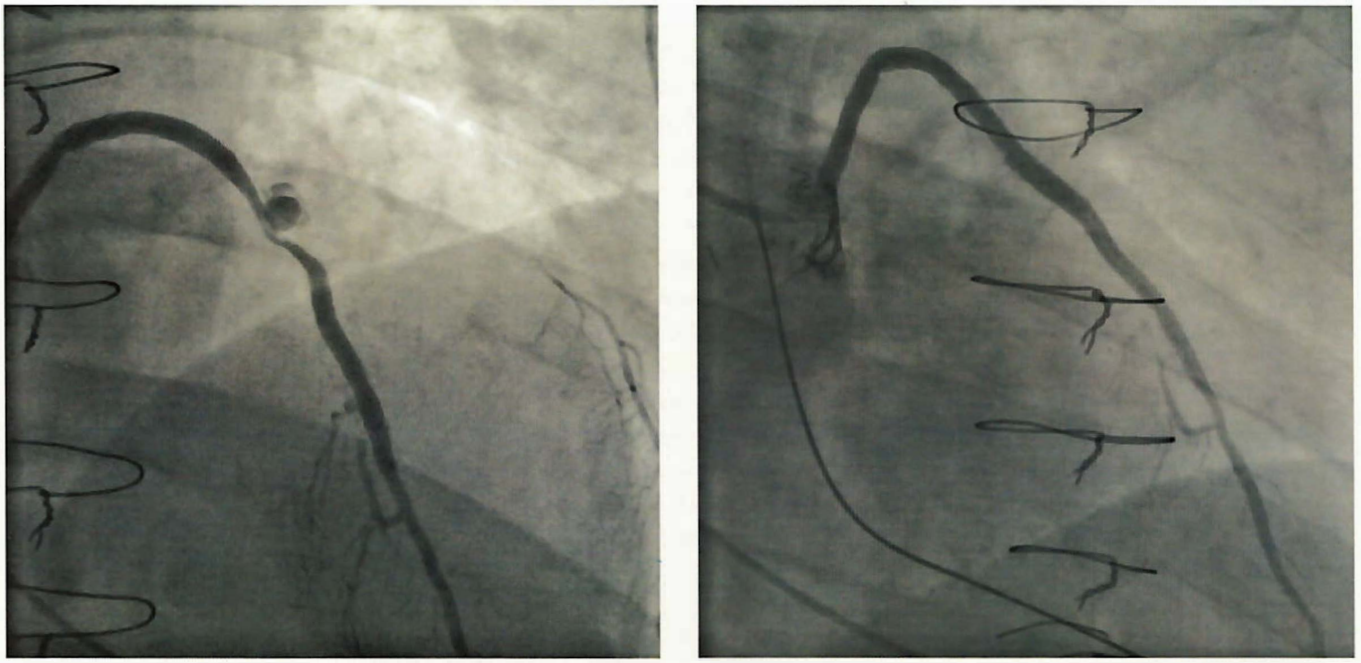

Figure 1. This 78-year-old patient with known coronary artery disease and a prior coronary artery bypass was admitted to the hospital with new-onset exertional chest pain and dyspnea. The last coronary angiogram performed five years previously revealed a 50% stenosis in a saphenous vein graft (SVG) to the left anterior descending artery, but with no sign of an aneurysm. The angiogram now revealed progression of the previous 50%, stenosis of the SVG to a severe stenosis estimated to be 80% and an aneurysm at the site of stenosis (Figure 1, left). A percutaneous intervention was performed with deployment of a drug-eluting stent to isolate the SVG aneurysm (Figure 2 right). On follow-up outpatient visit, the patient remains asymptomatic.

Thar saphenous vein graft (SVG) aneurysms occur was first reported in 1975.1 Ir is a rare complication of saphenous vein graft surgery usually occurring years after placement of che graft. An incidence of0.07% was reported in one series of saphenous vein graft operations, but the true incidence is probably significantly under reported and under recognized.2-4 It is to be differentiated from a pseudoaneurysm of a SVG, a much rarer entity by a ratio of 6:1.1 In the present case it was the clinical syndrome of typical exercional angina that prompted coronary angiography leading to the subsequent finding. However, the literature also underscores the diagnostic capabilities of CT scans,[1] MRI,5 and echocardiography.[2-6] Even chest X-rays may raise suspicions if che aneurysm size is sufficiently large co deform the cardiac silhouetce.1,6 If uncorrected, the aneurysm may cause hemoprysis,7·[8] rupture,[9] create fiscu-las[10] or compress nearby scruccures.11•13 Successful treatment of saphenous vein graft aneurysms has been reported with coronary artery bypass,[2,14] insertion of coils,3 AMPLATZER® vascular plug[15] and a variety of scents.[16-19] Successful correction of the vein graft aneurysm in chis case was accomplished after placement of a JOSTENT® scent.

REFERENCES

1. *Almanaseer Y, Rosman HS, Kazmouz G, Giraldo AA, Martin J Severe dilatation of saphenous vein grafts: a late complication of coronary surgery in which the diagnosis is suggested by chest x-ray. Cardiology. 2005;104(3):150-5. £pub 2005 Aug 25.*
2. *Yatskar L, Rosenzweig BP, Attubato M, Axel L, Tunick PA, Kronzon l Saphenous vein graft aneurysm masquerading cs a right atrial mass. Echocardiography. 2005 Mar;22(3):263-5*
3. *Parry DJ, Winburn IC, Wilkins GT, Bunton RW Expanding retrograde saphenous vein graft aneurysm treated with endovascular coiling. Ann Thorac Surg. 2005 Dec;80(6):2374-6.*
4. *Mayglothling j, Thomas MP, Nyzio JB, Strong MD, Samuels LE. Aneurysm of aortocoronary saphenous vein graft: case*

report and literature review. Heart Surg Forum. 2004Jul 1;7(4):E317-20.

5. *Yohann MM, Gilkeson RC, Markowitz AH, el-Zein C. Coronary artery graft aneurysm diagnosed by cardiac magnetic resonance imaging. Ann Thorac Surg. 2000 Nou:70(5):1729.*
6. *Bamal RC. Echocadiographic diagnosis of an arymptomatic aneurysm of a saphenous uein graft. J Am Soc Echocardiogr. 2002 jun;15(6):661-4.*
7. *Nishimura Y. Okamura Y. Hiramatsu T, Mori H, Hayashi H, Komori S. Hemoptysis caused by saphenous uein graft late after coronary artery bypass grafting. J Thorac Cardiovasc Surg. 2005jun:129(6): 1432-3.*
8. *Iuert T, Orre L. Right Thoracotomy with Saphenous Vein Graft Aneurysm Causing Hemoptysis. Ann Thorac Surg. 2006 May;81(5): 1885-7.*
9. *Memon AQ, Huang R l Marcus F, Xavier L, AlpertJ Saphenous vein graft aneurysm: case report and review. Cardiol Reu. 2003 Jan-Feb; 11 (J):26-34.*
10. *Dabboussi M, Saade YA, Poncet A, Baehrel B. Fistula between a saphenous uein graft aneurysm and the pulmonary artery trunk. Ann Thorac Surg. 200/ Apr.-71(4):1356-8.*
11. *Kalimi R, Palazzo RS, Grauer LM. Giant aneurysm of saphenous vein graft to coronary artery compressing the right atrium. Ann Thorac Surg. 1999 Oct;68(4):1433-7*
12. *Abrishamchian AR, Gowdamarajan A, Michl.er RE. Saphenow uein graft aneurysm: potential for mistaken identity. J Card Sllng. 2002Jul-Aug;17(4):295-7*
13. *Shetty R, Jain A, Beto R, Massinopl.e D, Hague R, Rai A. Giant aneurysm of the saphenous vein graft presenting as a mediastinal mass: a case report. W V Medj. 2005 Nov-Dec;l0l(6):253-5.*
14. *Dieter RS, Patel A K Yandow D, PacanowskiJP Jr, Bhattacharya A, Gimelli G, et al. Conservative vs. invasive treatment of aortocoronary saphenorJS vein graft aneurysms: Treatment algorithm based upon a large series. Cardiovasc Surg. 2003 Dec:11(6):507-13.*
15. *Mylonas I, Sakata Y. Salinger MH, Feldman T. Successfi,l closure of a giant true saphenous vaill graft aneurysm wing the Amplatzer i•ascular plug. Catheter Cardiovasc Interv. 2006Apr;67(4):6JJ-6.*
16. *Kereiakes DJ, Broderick TM, Howard WL, Anderson LC. Weber M, Mitts DL. Successfol long-term therapy following saphenous vein-covered stent deployment for atherosclerotic coronary aneurysm. Catheter Cardiovasc Intero. 2002jan:55(1):100-4.*
17. *Rogers JH. Chang D, Lasala JM. Percutaneous repair of coronary artery bypass graft-relatedpseudoaneurysms using covered JOSTENTs. J Invasive Cardiol. 2003 Sep.-15(9):533-5.*
18. *Dixon SR, Skeldi$_{ng}$ KA, Frumin H l O'Neill W W Occlusion of a saphenow vein graft aneurysm with a vein-covered stent. J Interv Cardiol. 2002jun; 15(3):201-4.*
19. *Gercken U, Lamky AJ, Buellesfe/d L, Desai K, Badereldi11 M, Mueller R, et al. Results of the Jostent coronary stent graft implantation in various clinical setti$_{ngs}$: procedural and follow-up results. Catheter Cardiovasc Imerv. 2002ju/;56(3):353-60.*