

IMAGES AND VIDEOS

Vein graft aneurysm with mural thrombus on echocardiography

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A 78-year-old man presented with chest pain, left bundle branch block and raised troponin levels. Echocardiography demonstrated a 63 mm vein graft aneurysm with mural thrombus (Fig. 1A, B and C; Videos 1, 2, 3 and 4), and a dilated, severely dysfunctional and dyssynchronous left ventricle, with inferior akinesia. Eighteen years ago, he had undergone coronary artery bypass grafting following three myocardial infarctions. He had four grafts, including

a vein graft to the left anterior descending artery (LADA). Percutaneous occlusion of this aneurysmal LADA graft had been considered when it measured 45 mm 3 years before, but on angiography, the graft contributed significantly to LADA flow and was not therefore occluded (Fig. 1D). The native LADA and two other vein grafts were occluded. Repeat computerised tomography scan revealed that the aneurysmal graft was patent, but had enlarged, compressing

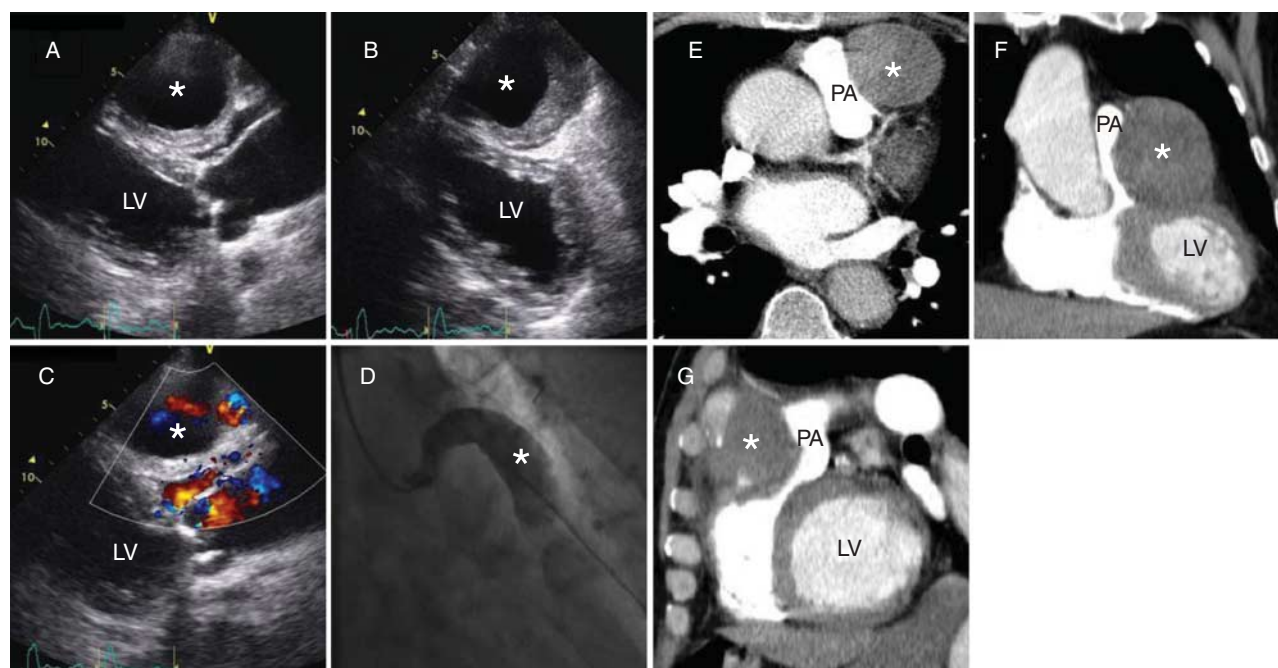


Figure 1

(A and B) Vein graft aneurysm with mural thrombus (labelled *) on echocardiography, in modified parasternal long- and short-axis views (LV, left ventricle); (C) vein graft aneurysm demonstrating flow within the aneurysm, on colour Doppler echocardiography, in modified long-axis

view; (D) angiogram of vein graft aneurysm; and (E, F and G) aneurysmal vein graft compressing onto the pulmonary artery (labelled PA) from different orthogonal views on computerised tomography.

the pulmonary artery (Fig. 1E, F and G). The patient died from left ventricular failure. Vein graft aneurysms occur due to trauma during harvesting, weak points along the vein or atherosclerotic degeneration (1, 2). On echocardiography, it appears as a well-circumscribed, echo-lucent mass, surrounded by a crescentic, echo-dense region. Using i.v. echo-contrast agents, pulsatile diastolic flow within such aneurysms has been described before (3). Untreated aneurysms can cause myocardial infarctions, rupture and death (2).

Video 1

Vein graft aneurysm with mural thrombus on echocardiography, in modified parasternal long-axis view. Download Video 1 via <http://dx.doi.org/10.1530/ERP-14-0054-v1>.

Video 2

Vein graft aneurysm with mural thrombus on echocardiography, in modified parasternal short-axis view at the level of the left ventricle. Download Video 2 via <http://dx.doi.org/10.1530/ERP-14-0054-v2>.

Video 3

Vein graft aneurysm with mural thrombus on echocardiography, in modified parasternal short-axis view at the level of the aortic valve. Download Video 3 via <http://dx.doi.org/10.1530/ERP-14-0054-v3>.

Video 4

Vein graft aneurysm with colour Doppler demonstrating flow within the aneurysm on echocardiography, in modified long-axis view. This also demonstrates the pulmonary artery with flow within, compressed between the aneurysm and the aortic root. Download Video 4 via <http://dx.doi.org/10.1530/ERP-14-0054-v4>.

Declaration of interest

The authors declare that there is no conflict of interest that could be perceived as prejudicing the impartiality of the research reported.

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Patient consent

Patient deceased.

Author contribution statement

N Dewey wrote the manuscript. Dr A R Houghton reviewed the article before submission. Dr J Khoo was consultant of the patient and therefore involved in patient's clinical management and treatment, and reviewed the article before submission. Permission was obtained for the article.

References

- 1 Choukroun EM, Labrousse LM, Madonna FP & Deville C 2003 Multiple aneurysms of saphenous vein graft with low symptoms 16-year after coronary artery bypass grafting. *Interactive Cardiovascular and Thoracic Surgery* **2** 307–309. (doi:10.1016/S1569-9293(03)00063-X)
- 2 Ramirez FD, Hibbert B, Simard T, Pourdjabbar A, Wilson KR, Hibbert R, Kazmi M, Hawken S, Ruel M, Labinaz M *et al.* 2012 Natural history and management of aortocoronary saphenous vein graft aneurysms. *Circulation* **126** 2248–2256. (doi:10.1161/CIRCULATIONAHA.112.101592)
- 3 Kobulnik J, Hutchison SJ & Leong-Poi H 2007 Saphenous vein graft aneurysm masquerading as a left atrial mass: diagnosis by contrast transesophageal echocardiography. *Journal of the American Society of Echocardiography* **20** 1414. (doi:10.1016/j.echo.2007.06.014)

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