Saphenous vein graft aneurysm

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An 80-year-old man with chronic stable angina and a history of coronary artery bypass grafting underwent contrast-enhanced computed tomography for investigation of aorto-iliac disease. As an incidental finding, he was noted to have a large coronary vein graft aneurysm adjacent to the right heart (Panel A). Coronary angiography 2 years previously had demonstrated a patent internal mammary artery to the left anterior descending artery and a patent vein graft to the right coronary artery with aneurysmal dilatation of the distal vein graft (Panel B). No intervention was undertaken at that time.

Angiography on this occasion demonstrated considerable expansion of the vein graft aneurysm with no perceivable distal run-off (Panel C). Prolonged occlusion of the vein graft proximally with a 5 x 15 mm Maverick angioplasty balloon (Boston Scientific, Maple Grove, MN, USA) resulted in neither symptomatic nor electrocardiographic evidence of myocardial ischaemia. In the absence of a distal lumen, percutaneous closure of the aneurysm using covered stents was not possible and vein graft occlusion was achieved following deployment of two Nester 6 mm x 14 cm coils (Cook, Bloomington, Ind., USA) within the proximal segment of the vein graft (Panel D).

Aneurysmal dilatation of saphenous vein grafts is uncommon but is associated with significant in-hospital mortality largely due to graft rupture. This case highlights the importance of early treatment of vein graft aneurysms. Closure of the aneurysm when it was first identified, using covered stents, might have prevented graft enlargement, removing the risk of graft rupture and preserving graft patency and distal run-off.

Panel A. Contrast-enhanced computed tomography demonstrating an aneurysm of the right coronary vein graft (arrow).
Panel B. Angiogram performed 2 years earlier demonstrating aneurysmal dilatation of the vein graft to the right coronary artery with good distal run-off.
Panel C. Angiogram obtained on this occasion demonstrating significant enlargement of the aneurysm with absent distal run off.
Panel D. Angiogram obtained immediately following coiling of the neck of the vein graft. Complete occlusion of the graft has been achieved.