

Title: Novel Management of a 8cm Recurrent Pseudo-aneurysm in a 90-year-old Patient with a 42-year-old Saphenous Vein Graft

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Introduction: Saphenous vein graft (SVG) pseudoaneurysms are rare but high-risk complications post-CABG. Surgical repair is often unfeasible in high-risk patients, necessitating percutaneous management. We present an 88-year-old with a recurrent large SVG pseudoaneurysm successfully treated with covered stents, highlighting the role of endovascular intervention in complex graft pathology.

Case Presentation: In 2022, an 88-year-old male with a history of CABG in 1983 and severe mitral regurgitation presented with fatigue and decreased exercise tolerance. TEE confirmed severe mitral insufficiency, and he was referred for MitraClip evaluation. As part of his pre-procedure assessment, CT incidentally revealed a large SVG pseudoaneurysm. Given the size and rupture risk, a multidisciplinary team recommended percutaneous intervention (PCI).

The patient underwent PCI with placement of a 3.0 × 20 mm Papyrus covered stent under optical coherence tomography (OCT) guidance to exclude the pseudoaneurysm. The procedure was successful, with complete aneurysm resolution. He subsequently underwent uneventful MitraClip placement.

Approximately two years later, he presented with recurrent pneumonia and upper respiratory symptoms. A contrast-enhanced CT revealed a partially thrombosed, 8 cm coronary bypass graft pseudoaneurysm with a short segment dissection flap in the proximal left subclavian artery. A multidisciplinary team determined that he was not a surgical candidate, and repeat PCI with additional covered stenting was recommended.

The patient underwent a second PCI, during which a 3.0 × 20 mm and a 3.5 × 15 mm Papyrus covered stent were deployed under intravascular ultrasound (IVUS) guidance, successfully sealing the pseudoaneurysm. He tolerated the procedure well without complications. At follow-up, he was managed on GDMT for heart failure and CAD, with adjustments to diuretics for volume control and continued surveillance of his vascular pathology.

Discussion: The management of large, recurrent SVG pseudoaneurysms presents a significant challenge, particularly in high-risk surgical patients. Traditional treatment options include surgical repair or exclusion; however, advanced age, co-morbidities, and graft friability often preclude surgical intervention. This case demonstrates the novel use of multiple covered stents as a percutaneous alternative to successfully exclude an 8 cm recurrent SVG pseudoaneurysm.

Covered stents offer a minimally invasive approach to seal pseudoaneurysms while maintaining graft patency. In this case, the initial intervention achieved complete resolution, but recurrence after two years necessitated a second PCI with additional covered stents. Fluoroscopic and IVUS guidance were instrumental in optimizing stent positioning and minimizing endoleak risk. The sequential deployment of multiple covered stents highlights their feasibility in treating complex, late-stage SVG pathology without compromising distal perfusion.

Conclusion: There is an evolving role for percutaneous techniques in the management of graft-related complications. The successful use of repeat covered stent placement suggests that endovascular intervention can provide durable outcomes in select patients, reducing procedural morbidity compared to surgical repair. Further studies are needed to assess long-term outcomes of multiple covered stents in recurrent SVG pseudoaneurysms.