ECG-gated Cardiac CT Evaluation of a Saphenous Vein Graft Aneurysm Pre- and Post-Percutaneous Intervention
Rojas CA, MD, El-Sherief A., MD, Choy G., MD, Medina-Zulaga H., MD, Inglessis I., MD, Abbara S., MD & Mamuya W., MD, PhD

Clinical History
An elderly woman, who underwent coronary artery bypass surgery (CABG) 14 years ago, was noted to have an enlarged mediastinal mass on a non-gated chest CT. The mass was noted to be in close approximation to a right saphenous vein graft and, therefore, a diagnosis of a saphenous vein graft (SVG) aneurysm was entertained and an ECG-gated cardiac CTA was performed to confirm the suspected diagnosis.

Findings
Cardiac CTA images confirmed the diagnosis of an SVG aneurysm. Given the size of the aneurysm and the morbidity and mortality associated with SVG aneurysm rupture; operative repair was recommended. However, the patient was a poor surgical candidate and, therefore, percutaneous intervention with covered stents to isolate the aneurysm from the SVG was performed. Follow-up ECG-gated cardiac CTA at 3 months post percutaneous intervention demonstrated patency of the stents, an interval decrease in size of the excluded aneurysm, and no evidence of an endoleak.

Discussion
A SVG aneurysm is defined as venous graft dilatation with a diameter of 1.5 times or more that of the adjacent normal venous graft segment. SVG aneurysms can be classified as true (involving all 3 layers of the venous graft) or false aneurysms (saccular chamber into which blood circulates from a tear in the venous graft). True aneurysms appear to be atheromatous in origin and therefore tend to occur late, usually 5 years after surgery, and are usually located along the body of the graft. Management of SVG aneurysms is not well defined and includes medical management, surgical treatment, and percutaneous intervention. Surgical treatment is generally reserved for cases in which a patient is symptomatic and/or when aneurysmal dilatation of the bypass graft exceeds 2 cm in size, given the increased risk of rupture or thromboembolism of large aneurysms.

ECG-gated cardiac CTA is useful in post-CABG patients in assessing graft patency and evaluation of the distal runoff vessels. This case highlights the added clinical value of using non-invasive ECG-gated cardiac CT for surveillance and management of graft aneurysms pre- and post- surgical/percutaneous interventions.

REFERENCES