

Coronary stent migration to aorta with successful recovery during aortobifemoral bypass

Jonathan P. Kerr, BS, ADN,^{a,b} Benjamin A. Greif, MD,^a Gregory G. Salzler, MD,^a Evan J. Ryer, MD,^a and Robert P. Garvin, MD,^a *Danville and Scranton, Pennsylvania*

ABSTRACT

We present with full and proper consent of the patient, the case of a 64-year-old man with severe peripheral arterial disease and a known chronic infrarenal aortic occlusion causing severe short-distance claudication. Preoperative computed tomography angiography was significant for a new “cylindrical” calcified lesion. During the elective surgery, the lesion was confirmed to be a coronary stent. The coronary stent was confirmed to be from the patient’s prior percutaneous coronary intervention to the left anterior descending artery 1 year prior. The stent was removed without complications by the surgical team. To the best of our knowledge, this is the first such case to be described in current literature. This patient is currently alive, and a revision of his left anterior descending artery intervention was found to be unwarranted on repeat coronary angiography. (*J Vasc Surg Cases Innov Tech* 2024;10:101456.)

Keywords: Aortobifemoral bypass; Coronary stent; Intra-aortic occlusion

In the middle of the 20th century, bypass procedures for aortoiliac or infra-inguinal disease were developed to treat occlusions with origins proximal to the extremities.¹ Although endovascular techniques are developing rapidly and are the first option in many cases, an open surgical technique is classically the “gold standard” for durability and efficacy.² It is rare to find foreign bodies during an aortic bypass, and little literature exists on coronary stents in the aorta. One case in 2021 showed a coronary artery stent migration to the aorta from the left main coronary artery. This patient survived just 3 days after diagnosis with extensive stent occlusion and cardiogenic shock.³ Coronary stents have been used since 1978, with >2 million implanted annually.⁴ Over the years, the incidence of stent loss has been a rarity (0.32%), with most retrieved during the original intervention, and few leading to mortality or other severe complications.⁵

CASE REPORT

We present the case of a 64-year-old man with severe peripheral arterial disease and a known chronic infrarenal aortic occlusion causing severe short-distance claudication. The patient presented to the clinic with prior computed tomography angiography confirming distal aortic occlusion with

reconstitution in the bilateral common femoral arteries (Fig 1). However, a routine preoperative workup showed ischemic cardiomyopathy and multivessel coronary disease requiring percutaneous coronary intervention (PCI) and coronary stenting. The left main coronary artery had ostial 80% stenosis, the proximal left anterior descending artery (LAD) had diffuse 80% to 90% stenosis, and the right coronary artery had severe 80% ostial stenosis. For treatment, six stents were originally deployed: one in the distal ostium of the left main coronary artery (3.5 × 8-mm Rolute onyx drug-eluting stent [RODES]; Medtronic), three in the LAD (overlapping 3.5 × 22-mm, 2.5 × 26-mm, and 2.25 × 18-mm RODESs), and two in the right coronary artery (overlapping 3.0 × 38-mm and 2.75 × 30-mm RODESs). However, some proximal disease remained in the left main coronary artery, and a second more proximal stent was deployed, overlapping the original stent (4.0 × 8-mm RODES). The final coronary angiogram showed excellent results, with 0% residual stenosis and no evidence of dissection or perforation. The patient completed his recommended recovery period of 3 months by cardiology and returned to the vascular surgery clinic for operative consultation. The decision was made to attempt to manage the patient’s claudication symptoms without surgery; however, over time, his symptoms became progressively worse, and, after several months, he requested operative intervention. A new computed tomography angiogram was obtained, demonstrating a new radiopaque foreign body in the immediate infrarenal aorta at the level of the aortic occlusion. This foreign body had the appearance of a small-diameter intravascular stent, suspicious for a coronary stent that had embolized (Fig 2).

Open aortobifemoral bypass was, therefore, performed 11 months after the cardiac catheterization and PCI procedure. Clopidogrel was held for 7 days preoperatively, with 81 mg of aspirin continued perioperatively. The bypass surgery used a bifurcated Dacron graft, with the proximal anastomosis oriented in a standard end-to-end configuration. During evacuation of the thrombus, the foreign body was encountered and confirmed to be a coronary stent (Fig 3). The patient tolerated

From the Department of Endovascular and Vascular Surgery, Geisinger Medical Center, Danville^a; and the Geisinger Commonwealth School of Medicine, Scranton.^b

Correspondence: Robert P. Garvin, MD, Department of Endovascular and Vascular Surgery, Geisinger Medical Center, 100 N. Academy Ave, Danville, PA 17822 (e-mail: rpgarvin@geisinger.edu).

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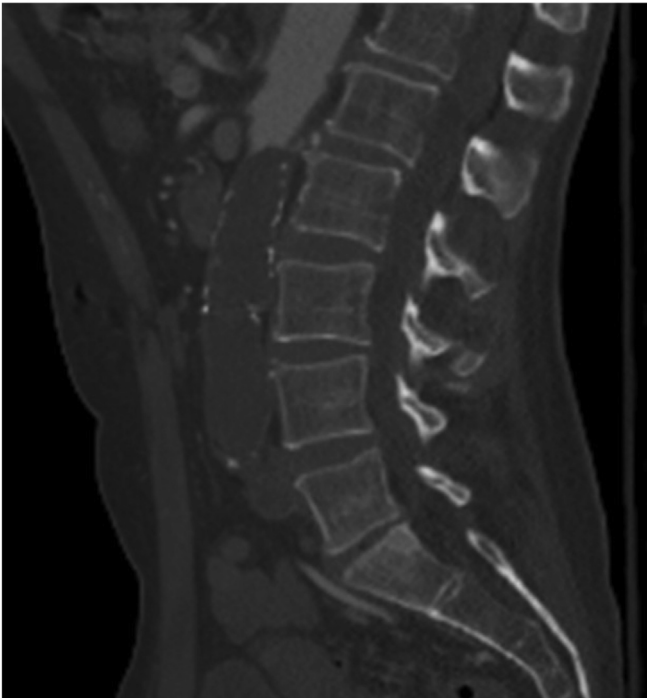


Fig 1. Initial computed tomography angiogram showing infrarenal descending aortic occlusion.



Fig 2. Repeat computed tomography angiogram revealing a new tubular aortic occlusion (*arrow*).

the procedure well, and cardiology was consulted on postoperative day 0 with this finding. Because the patient was stable, with no signs of cardiac ischemia, the decision was made to perform a delayed repeat PCI after recovery from the initial insult of surgery. Five days postoperatively, a repeat coronary angiogram was performed, demonstrating a patent left main

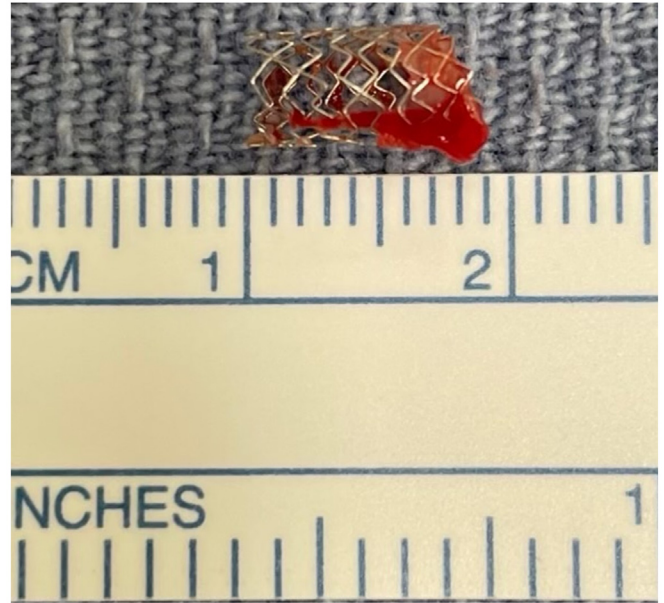


Fig 3. Recovered left main proximal coronary stent.

coronary artery stent distally with an absent left main coronary stent proximally. Because no recurrent ostial stenosis was present, repeat stenting was deemed unnecessary. No further procedures were done, and the patient remains without chest pain, shortness of breath, or weight gain at 6 months of follow-up.

DISCUSSION

Aortobifemoral bypass is a complex procedure for peripheral arterial disease that has many of its own intricacies and possible complications, although the recovery of prior coronary stents is not typically considered one of them. A recent coronary stent dislodgement study has shown that although dislodgement might be rare, it is more common among ultrathin strut stents such as the ones used in this patient.⁶ Stent dislodgment typically presents during the original percutaneous intervention and having an ultrathin strut creates an easier ability to crush and remove them at that time.⁶ To the best of our knowledge, the only known report of a coronary stent migrating to the aorta was in 2021, resulting in cardiogenic shock and death.³ Although stent loss during PCIs has been reported, it seems to be a rare event, as evidenced by a meta-analysis reported by Alomar et al.⁷ In our review of the literature, we were not able to find any prior reports of a left main coronary stent embolizing to the distal aorta, making this report unique due to the patient's ongoing survival, length of time after the migration, and full recovery of an intact stent. However, had this patient not already presented with an aortic occlusion, these results could have been different. In this case, the presence of a chronic infrarenal aortic occlusion proved fortunate and served as a trap for the coronary stent.

DISCLOSURES

None.

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