Peripheral arterial disease (PAD) is an ever-growing health concern that can result in significant patient morbidity, including repeated hospitalization, limb amputation, poor quality of life, and increased patient mortality. Therapeutic options for PAD have rapidly advanced, with lesions that were once only surgically correctable now undergoing approach by endovascular means. Despite its advantages, percutaneous treatments can have potential, yet rare, complications, such as access-site complications, vessel dissection or perforation, abrupt closure, infection, or pseudoaneurysm formation.

We describe a late-presenting common iliac artery pseudoaneurysm (IPSA), which developed following deployment of a self-expanding nitinol stent 9 years earlier. The IPSA was successfully excluded utilizing a balloon-expandable covered stent-graft.

**Abstract:** Purpose. To report the rare occurrence of iliac pseudoaneurysm formation in a patient and discuss its etiologies, clinical impact, and treatments. **Case Report.** An 80-year-old man with a prior history of right common iliac artery stent angioplasty 9 years earlier presented for evaluation of right hip and groin pain. Subsequent peripheral angiogram demonstrated right common iliac artery pseudoaneurysm, extending the length of the common iliac artery, originating from the distal edge of the iliac artery stent. A covered stent was deployed in the distal common iliac artery to exclude the ostium of the pseudoaneurysm with no further flow into the abnormality. The patient’s hip and groin symptoms resolved following the procedure, and 3-month follow-up computed tomography demonstrated no further evidence of pseudoaneurysm. **Conclusion.** This case illustrates the rare, but clinically relevant, occurrence of iliac artery pseudoaneurysm formation and successful treatment.
Resting ankle-brachial indices were normal; however, based on his known history of PAD and exertional symptoms, he was scheduled for peripheral angiogram. Left common femoral artery access was used and abdominal aortogram was performed, which revealed mild aortic plaque with patent bilateral common iliac artery stents. However, a right common IPSA was noted, extending the length of the common iliac artery, originating from the distal edge of the iliac artery stent (Figures 1A and 1B). Angiographic measurements yielded the dimensions of 0.67 cm x 0.57 cm x 2.71 cm. Based on the location of the vascular abnormality corresponding with his right-sided symptoms, the decision was made to exclude the abnormality with a balloon-expandable covered stent-graft.

A 7 x 45 cm Pinnacle Destination sheath (Terumo Medical) was inserted over a stiff 0.038” guidewire to selectively engage the right distal common iliac artery. A 0.018” V18 wire (Boston Scientific) was then advanced into the distal superficial femoral artery. Finally, an 8 x 38 mm iCAST covered stent (Atrium Maquet Getinge Group) was placed across the ostium of the IPSA.

Orthogonal views were used to position the stent at the distal right common iliac artery, with effort made to avoid covering the internal iliac artery. Once optimal position was confirmed by angiography, the stent was deployed and subsequently post-dilated with an 8 mm balloon. Final angiogram demonstrated a good result, with complete exclusion of the IPSA (Figure 1C). The patient was discharged home the following day and seen at follow-up 4 weeks later with complete resolution of his right hip and groin pain. A postprocedure computed tomography angiogram of the abdomen and pelvis was performed 3 months later and continued to show no further evidence of IPSA (Figure 2).

**DISCUSSION**

Delayed pseudoaneurysm formation following stent angioplasty of the common iliac artery is an infrequent, yet clinically relevant, complication. Previously reported cases cite the formation of an IPSA as a result of vessel trauma caused by balloon angioplasty or stent placement, stent infection, stent fracture, or as a complication from a surgical procedure.1,2 Scheinert et
al reported a case of asymptomatic IPSA discovered on routine angiographic follow-up occurring several months after overlapping stents were implanted to treat severe iliac artery stenosis. Successful exclusion of the IPSA was achieved with a covered stent-graft. Although IPSAs may often fail to produce clinical symptoms, when substantial in size, patients may experience lower abdominal pain, neuropathic leg pain, hip discomfort, pain with defecation, or even rupture. Current treatment options include coil embolization, open surgical repair, or (most frequently used) covered stent-grafts. The location of the pseudoaneurysm may dictate which treatment modality to choose. In our case, we were able to cover the IPSA origin and avoid compromising the right internal iliac artery with a covered stent; however, if internal iliac artery coverage is unavoidable, coil embolization may be a better option. There is no current recommendation for dual-antiplatelet therapy following IPSA treatment; nonetheless, we opted for 3 months of aspirin and clopidogrel therapy for our patient.

CONCLUSION

IPSA is a rare occurrence, yet can be effectively treated by endovascular therapies. Herein, we present a case of symptomatic delayed IPSA formation in a previously stented vessel, successfully excluded using a covered stent, with complete resolution of hip and groin pain.

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