



Endovascular Recanalization of an Infrarenal Aortoiliac Occlusion Using a Combined Bilateral Subintimal Approach

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A 73-year-old man presented with bilateral chronic limb-threatening ischemia due to infrarenal aortoiliac occlusion. The ankle-brachial index was 0.2 bilaterally. Although the lesion's anatomic configuration would ideally require surgical revascularization, the patient was not eligible for bypass because of extensive skin ulceration in lower abdominal wall due to pyoderma gangrenosum (Fig. 1); therefore, endovascular recanalization was planned. First, the right brachial artery and both common femoral arteries (CFAs) were punctured. Digital subtraction angiography (DSA) revealed total occlusion of infrarenal aorta and both common iliac arteries (CIAs). Transversing left CIA occlusion through left CFA, the hydrophilic guidewire was advanced to the subintimal space. This did not lead directly to the occluded aorta; rather, it passed to the contralateral CIA and reentered the true lumen of the right external iliac artery (EIA). After



Fig. 1. Photograph showing an extensive skin ulceration in the lower anterior abdominal wall due to pyoderma gangrenosum as indicated by the pathological examination.

guidewire externalization through right CFA, a catheter was advanced from right CFA and a new hydrophilic guidewire was inserted from left CFA. Subsequently, both guidewires were deployed in the same subintimal space in the occluded aorta. Using a narrow-looped configuration and supported by an angiographic Bern catheter, the guidewire was advanced into the true aortic lumen proximal to the occluded segment. Pre-dilatation was performed using two percutaneous transluminal angioplasty (PTA) balloons (6 mm×100 mm). Subsequently, two covered stents (6 mm×100 mm) were deployed across the aortoiliac occlusion in a kissing fashion. The patient underwent additional PTA and stent deployment in stenotic lesions across EIAs. Completion DSA showed excellent flow restoration (Fig. 2). After recanalization, the patient's symptoms were resolved and ankle-brachial index increased to 0.8 bilaterally. The patient was discharged 10 days later, after improvement of the abdominal wall ulceration, which healed completely after two months. At that time, computed tomography angiography revealed excellent stent patency without signs of restenosis (Fig. 3).

Surgical revascularization is generally recommended for patients with extensive aortoiliac disease. However, endovascular revascularization may be a safe and effective treatment option for patients with contraindications for surgery [1,2]. A bilateral approach using the same subintimal space may facilitate reentry into true lumen.

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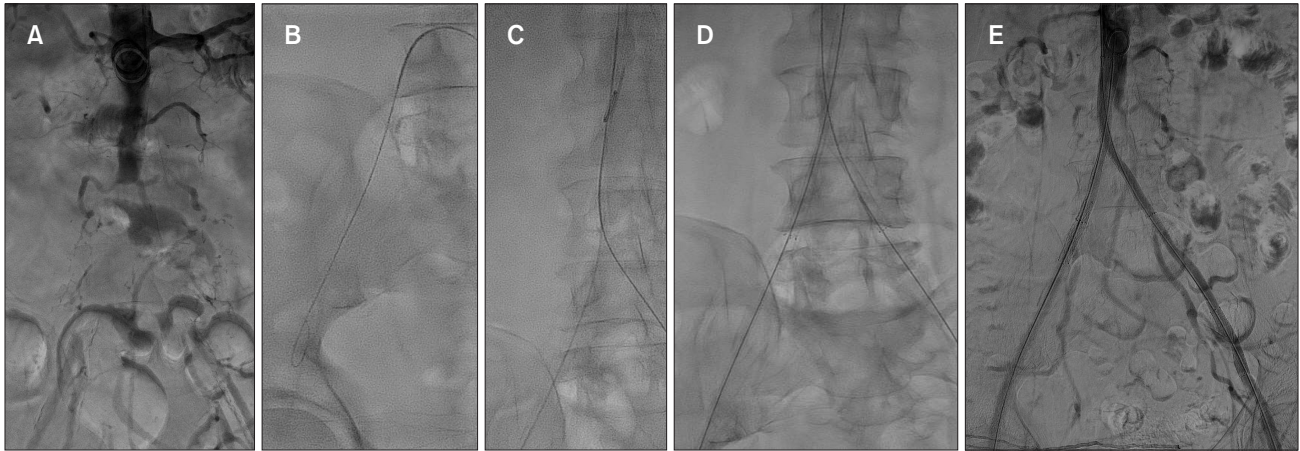


Fig. 2. (A) Digital subtraction angiography (DSA) depicted total occlusion of the infrarenal aorta and bilateral common iliac arteries and reconstruction of their distal portions via collaterals a few millimeters before their bifurcation. (B) Transversing the left iliac artery occlusion, the guidewire was advanced to the subintimal space, directed to the contralateral right common iliac artery and reentered the true lumen of the right external iliac artery. (C) After bilateral reentry attempts, the guidewires were inserted into the true lumen of the aorta just a few millimeters above the occlusion. (D) After predilatation, kissing stenting was performed across the aortoiliac occlusion using two vascular covered stents. (E) Final DSA showed excellent flow restoration.

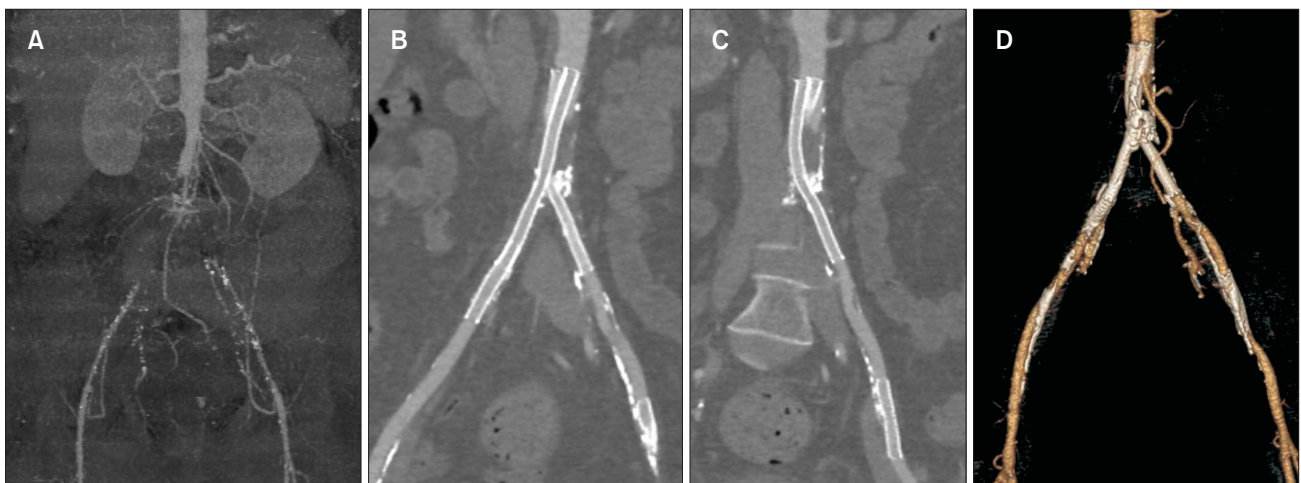


Fig. 3. (A) Computed tomography angiography (CTA), coronal maximum intensity projection (MIP) before endovascular recanalization showed total occlusion of the infrarenal aorta and common iliac arteries. Two months later, CTA curved MIP for the right (B) and left lower extremities (C) and three-dimensional reconstruction (D) revealed excellent stent patency without findings of restenosis.

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