

Total Iliofemoral Arterial Occlusion Treated With a Hybrid Technique

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A 56-year-old man presented with debilitating claudication and rest pain in his left lower extremity. Past medical history included hypertension, dyslipidemia, chronic obstructive pulmonary disease, and tobacco abuse. On examination, the left femoral pulse was nonpalpable. The decision was made to proceed with arteriography via right groin access for evaluation and possible intervention.

The patient was found to have flush occlusion at the origin of the left common iliac artery with total iliofemoral occlusion (Figure 1A). On delayed images, a faint enhancement of the left profunda femoral artery was noted. Open surgical treatment options were right femoral-to-left profunda femoral bypass versus femoral-to-femoral artery bypass with concomitant left femoral-popliteal artery bypass. Aortobifemoral bypass was considered, but in the face of the patient's severe chronic obstructive pulmonary disease, his operative risk was believed to be prohibitive.

We elected to perform endoluminal revascularization via open femoral artery exposure. A left common femoral artery cutdown was performed, and access was achieved via the occluded common femoral artery with a short J-wire followed by a stiff Glidewire (Terumo Interventional Systems, Somerset, NJ). The Glidewire and an angled KMP catheter (Cook Medical, Bloomington, IN) were used to cross the length of the occluded iliofemoral segment and successfully reenter the aortic lumen. This was confirmed with contrast injection through the catheter (Figure 1B).

We began by addressing the proximal occlusion point with an 8- X 28-mm Omnilink balloon-expandable stent (Abbott Vascular, Santa Clara, CA), which was placed at the origin of the left common iliac artery. This resulted in a significant dissection at the aortic bifurcation clearly seen through injection of

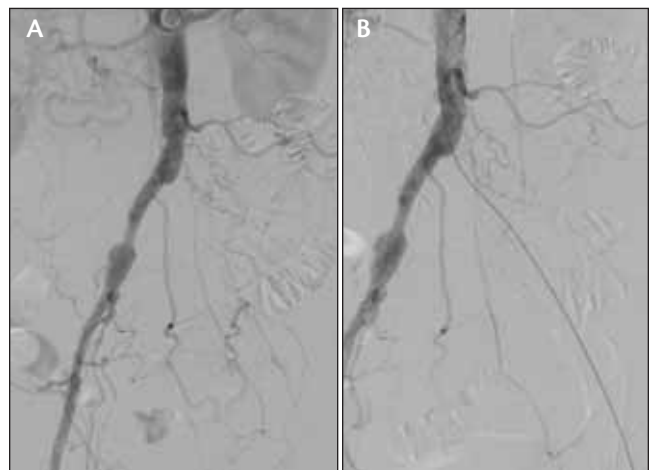


Figure 1. Initial arteriogram showing flush occlusion of the left common iliac artery (A). Successful crossing of the occluded segment with catheter injection in the aortic lumen (B).

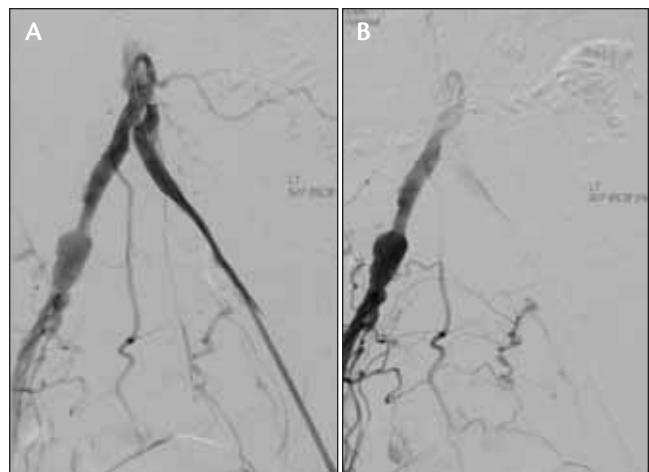


Figure 2. After stent placement at the origin of the left common iliac artery, an ipsilateral sheath injection shows significant dissection at the aortic bifurcation (A). Contralateral sheath injection again shows a dissection with no flow over the aortic bifurcation into the left common iliac artery (B).



Figure 3. The aortic bifurcation is raised with bilateral kissing stents, and a long covered stent relines the occluded segment from the common iliac to the common femoral artery.

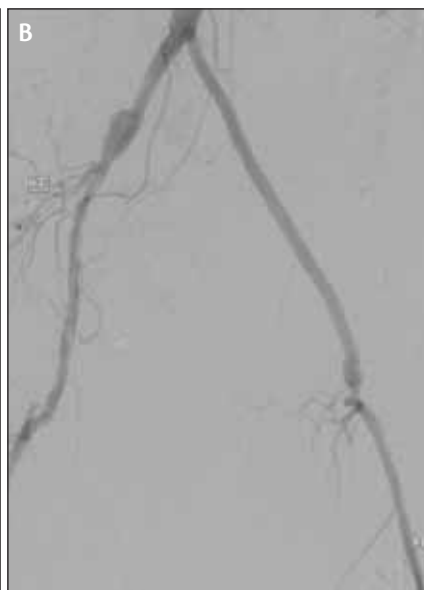


Figure 4. After femoral endarterectomy and profundaplasty, a completion arteriogram shows a widely patent iliofemoral segment (A). A completion arteriogram shows flow into a widely patent profunda femoral artery (B).

the ipsilateral sheath (Figure 2A). Injection via the contralateral right femoral access showed no filling of the left iliac artery secondary to the flow-limiting dissection (Figure 2B). We proceeded to raise the aortic bifurcation with kissing stents (right, 9- X 38-mm Omnilink; left, additional 8- X 28-mm Omnilink).

We then relined the remainder of the left common iliac artery to the level of the left common femoral artery (Figure 3) with an 8- X 150-mm Viabahn self-expandable covered stent (Gore & Associates, Flagstaff, AZ). At this point, a longitudinal arteriotomy was made on the common femoral extending onto the profunda femoral artery. The superficial femoral artery was chronically occluded. The profunda femoral artery was controlled with a vascular clamp while the proximal iliac inflow was controlled with an occluding balloon passed through the femoral arteriotomy. The distal aspect of the Viabahn covered stent was then transected in a beveled fashion in the midcommon femoral artery after endarterectomy of the common femoral and profunda femoral arteries. The posterior wall of the Viabahn was tacked to the arterial wall using a running Prolene suture. Common femoral-to-profunda femoral artery patch angioplasty was performed, with the edges of the bovine pericardial patch being sutured to the Viabahn covered stent and the overlying arterial wall at the apex of the arteriotomy.

The completion arteriogram demonstrated a widely patent iliofemoral segment with filling of the profunda femoral artery (Figure 4). It was believed that this procedure would improve the inflow adequately to resolve the rest pain; further intervention could be considered with femoral-popliteal bypass or endoluminal intervention of the superficial femoral artery. ■

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