

Successful Endovascular Revascularization Using Double-D Molding Technique with Stent Grafts for Aorto-Iliac Occlusive Disease: A Case Report

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A 70-year-old male with end-stage renal disease on maintenance hemodialysis presented with acute coronary syndrome in November 2024. Emergency coronary angiography revealed bilateral common iliac artery chronic total occlusion (CTO), leading to a diagnosis of aorto-iliac occlusive disease (AIOD). Primary percutaneous coronary intervention (PCI) was performed via brachial artery approach for severe stenosis in the right coronary artery (RCA). Angiography also revealed CTO lesion in the proximal left anterior descending artery (LAD).

Following discharge, the patient experienced persistent intermittent claudication, chest symptoms during dialysis, and left ventricular dysfunction on echocardiography. Consequently, PCI for the LAD lesion was considered alongside endovascular therapy (EVT) for AIOD.

Retrograde approach via bilateral common femoral arteries successfully achieved guidewire passage through the CTO lesion. The lesion exhibited eccentric severe calcification. Following pre-dilatation with scoring balloon, VBX stents were deployed using the "Double-D Molding Technique (DDMT)", with final angiography confirming good antegrade flow restoration.

Dialysis patients frequently present with heavily calcified lesions. Conventional kissing stent technique using bare metal stents (BMS) often results in incomplete stent apposition and radial mismatch-induced flow turbulence, increasing long-term restenosis and thrombosis risks. While Covered Endovascular Reconstruction of Aortic Bifurcation (CERAB) has been reported for AIOD treatment, it requires complex stent deployment and more invasive approaches.

DDMT offers a simpler procedure compared to CERAB while potentially reducing radial mismatch. This case highlights the procedural feasibility and anatomical advantages of DDMT in complex AIOD, particularly in patients with severe arterial calcification.