

Successful Stentless Intervention for Heavily Calcified Left Main Bifurcation Lesion Using Sequential OAS, IVL, and Rotablator

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A 67-year-old male presented with exertional angina. Coronary angiography revealed 3-vessel disease: #1 50%, #3 75%, #4PD 90%, #5 75%, #6 75%, #7 75%, #11 90%, and #13 90%. Given the patient's strong preference for PCI over CABG, we planned a staged stentless strategy for the heavily calcified LMT bifurcation lesion.

In the first stage, we performed PCI for the LMT bifurcation from the LAD approach. After lesion modification using the Orbital Atherectomy System (OAS) and Intravascular Lithotripsy (IVL), a drug-coated balloon (DCB) was applied. In the second stage, we performed additional debulking from the LCX approach using OAS, followed by rotational atherectomy (ROTA) from the LAD approach to optimize the plaque modification. Final treatment was completed with DCB application and successful kissing balloon technique (KBT).

At the 8-month follow-up, coronary angiography and optical frequency domain imaging (OFDI) showed no restenosis, and the calcified plaque showed favorable healing. This case demonstrates that intensive, multi-device sequential lesion modification is a safe and effective strategy for achieving successful stentless PCI in complex, calcified LMT bifurcation lesions.