Case Summary. In most cases, antegrade approach for CTO would be the first choice. During antegrade approach, false lumen with dissection is usually made, but when side branches are important, we should avoid making long false lumens. So, before making a long dissection, it is the time for retrograde approach.

However, devices for retrograde approach are not always advanced from collateral channels to target vessel, this is one of the reasons for PCI failure. Crusade catheter can help in conditions not only for parallel wire technique but also in side branches just near the CTO or CTO with a blunt end to increase successful rate of CTO re-canulation. Of course, wires and delicate skills are crucial.
Relevant test results prior to catheterization. Echocardiography: generalized hypokinesia of LV, LVEF 15%

Relevant catheterization findings. LM: total occlusion
RCA: total occlusion, collateral vessels from RV branch to LAD-D
Severe LV systolic function, LVEF 13%

[INTERVENTIONAL MANAGEMENT]

Procedural step. IABP was inserted first for blood pressure support. ECMO stood-by outside the Cath Lab. For LM CTO lesion, we engaged a Judkins 3.5/6 (via RRA) to LMCA. Initially, we tried antegrade approach with a Sion guide wire (GW), Cross It 100 GW, and Provia 9 GW. But, all failed to cross the lesion of LM. Then, we started retrograde approach. A Judkins 4/7 GC (via RFA) was engaged to RCA. A Sion GW with support of Finecross microcatheter was advanced to LAD-D from RCA-RV collateral. However, the LAD-D CTO cap was hard to penetrate; we then shifted to Provia 9 to advance further. The Provia 9 GW penetrated through LM lesion into ascending aorta. We used the snare via antegrade guiding catheter (GC) to retrieve Provia 9 GW along with microcatheter back to GC. Then, modified rendezvous was performed and antegrade Sion GW entered the microcatheter successfully. A Sapphire 2.0*15 mm BC was inflated over LM to LAD-D. We used IVUS to check the lumen and showed antegrade GW was in false lumen from LM-D to LAD-M, but true lumen in LAD-D. For IVUS-guided rewiring, we withdrew the Judkins GC originally engaged to RCA, shifted to EBU 3.5/7 GC (via RFA) engaged to LMCA (double GCs in LMCA). We re-entered the true lumen of LM-D with a conquest pro 12 GW with assistance of IVUS guidance, and advanced to LAD-D. After balloon dilatation, a 2.5*38 mm DES was deployed at LAD-M to LAD-P and another 2.75*33 mm DES was deployed at LM-Os to LAD-P. The final result of LAD was good with TIMI 3 flow.
Case Summary. Double guiding catheter technique with assistance of intravascular ultrasound guided re-entry as a bridge to heart transplantation is feasible in patients with severe coronary artery disease and ischemic cardiomyopathy.

TCTAP C-076
Percutaneous Coronary Intervention of Left Anterior Descending Artery Chronic Total Occlusion Using Septal-Septal Collateral Channel
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[CLINICAL INFORMATION]
Patient initials or identifier number. BSN
Relevant clinical history and physical exam. The case is a 63-year-old man with underlying atrial fibrillation, hypertension, and diabetes mellitus. He was diagnosed with coronary artery disease, 3-vessel, in 2000 and received coronary artery bypass grafting with saphenous venous graft (SVG) to left anterior descending artery (LAD); SVG to left circumflex artery (LCX) and right coronary artery (RCA). The SVG to LAD was occluded in 2006, when PCI to LAD failed.

He presented with chest pain and dyspnea 2 weeks before the index procedure.

Relevant test results prior to catheterization. The electrocardiogram showed atrial fibrillation rhythm and left ventricular hypertrophy by voltage criteria. Chest X-ray showed enlargement of left ventricular. Thallium 201 myocardial perfusion scan revealed reversible perfusion defect at anteroseptal region.