1083 **Successful Revascularization of LAD Chronic Total Occlusion Using Combined Retrograde Approach and TD-ADR**

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Background:

Revascularization of chronic total occlusion (CTO) remains challenging, particularly in the presence of severe calcification and tortuous anatomy.

Case Summary:

A 71-year-old man was transported to our hospital in cardiopulmonary arrest. Return of spontaneous circulation was achieved before arrival. Electrocardiography showed ST-segment elevation in the inferior leads, prompting emergency coronary angiography (CAG), which revealed total occlusion of the right coronary artery (RCA) and the left anterior descending artery (LAD). PCI with stent implantation was performed on the RCA. Six months later, staged PCI was performed for the LAD CTO.

Bilateral 8Fr femoral access was obtained, and the LCA and RCA were engaged using an 8Fr SPB 3.5 and an 8Fr AL 2.0 catheter, respectively.

The proximal CTO cap was identified from the diagonal branch using an AnteOwl IVUS. A Corsair Pro and Sionblack were advanced into the CTO segment. However, contrast injection revealed off-track wiring near the distal cap, prompting a switch to a retrograde approach.

The septal channel was crossed using a Corsair XS, Sion wire, and SUOH 03. Although Corsair XS could not reach the LAD trunk, successful microcatheter tracking was achieved with a Caravel. Retrograde wiring with a Gladius confirmed wire kissing, enabling an Ante-to-Retrograde rendezvous.

Passage into the LAD main trunk using a Sasuke and Sionblue was unsuccessful. IVUS revealed that the wire had been deflected by calcification from within the CTO, entering the subintimal space and exiting through the septal channel.

Therefore, under IVUS guidance, a Caravel and Conquest Pro 12ST were used to perform a tip-detection antegrade dissection re-entry (TD-ADR), successfully achieving passage into the LAD trunk. A single 2.5 × 50 mm drug-eluting stent was implanted, and the procedure was completed.

Conclusion:

This case highlights a highly complex LAD CTO-PCI utilizing both retrograde approach and TD-ADR, demonstrating the importance of imaging guidance and flexibility in strategy for successful revascularization.