

C014

Success comes from planning and preparation

[Clinical history and CAG]

We present a 64-year-old man with past history of old MI, DM, HTN, dyslipidemia, left iliac artery occlusion, and stroke. He quit cigarette for more than 1 month. CCS class II stable angina was noted for about 1 year. Trans-radial attempt for RCA CTO failed in another hospital. His left femoral and right radial pulses were impalpable.

The ECG revealed Q wave in the inferior leads. Echocardiography showed mild reduced contractility with LVEF of 50% and hypokinesia over inferior wall.

Coronary angiography(CAG) findings are as following:

LAD: segmental stenosis up to 90% at proximal to mid portion

LCx: 50% stenosis at proximal

RCA: distal chronic total occlusion, occlusion length over than 2cm

Collaterals

Collaterals from 1 st ~4th septal branch of LAD to PDA of RCA

[Procedural step]

We engaged LAD via left radial artery access, and RCA via right femoral artery access. IABP was not inserted due to lack of other vascular access. We passed Sion Blue wire to distal LAD and applied gentle pre-dilatation over mid to proximal LAD with a 2.5mm balloon. No dissection was created. Further LAD stenting was intentionally postponed to preserve septal collaterals, with Sion Blue left in place.

We then started retrograde approach with XTR wire, inside Finecross micro-catheter, to track septal branch into PDA. Finecross was exchanged to Corsair micro-catheter, which was advanced into PDA. XTR was exchanged to Gaia Second and then Ultimate Bros 3 for retrograde wire crossing, but wires all went sub-intimal. We then started antegrade preparation by advancing Ultimate Bros 3 through Corsair to distal RCA. Ultimate Bros 3 was exchanged to Gaia Second, which also went sub-intimal but parallel and overlapping the retrograde wire. Reverse CART would be the next step. However, the patient started to complain of chest tightness, and angiography showed diminished LAD flow. So, we immediately balloon dilated LAD to regain flow, and the patient was stabilized. Reverse CART was then carried out using 2.5mm balloon successfully. RG3 wire was used for externalization. We advanced Crusade catheter, over the externalized RG3, into distal RCA, and passed Runthrough wire into PLA. LAD was stented at this stage, followed by withdrawal of retrograde devices. Then, 4 stents were successfully deployed from distal to proximal RCA, preserving both PDA and PLA.

[Conclusions]

We presented a complicated RCA CTO with severe donor-artery disease. Limited vascular access due to peripheral disease and prior intervention precludes the possibility of mechanical support such as IABP. We prepared the donor artery cautiously without stenting, in order to preserve the access to collaterals for retrograde approach. Donor flow compromise still occurred during the procedure. Thanks to comprehensive planning the situation was resolved quickly. Finally, the CTO was successfully recanalized using reverse CART technique.