

C031

Successful re-crossing a diagonal branch occluded by stenting at severe calcified lesion of a left anterior descending artery with a Conquest Pro

[Target Lesion]

diffuse calcified left anterior descending artery (LAD) lesion

[Strategy]

1. Cross to the LAD and the diagonal branch (DB) with a tapered wire
2. Consider rotational atherectomy (rotablation) if intravascular-ultrasound (IVUS) catheter can not cross the lesion
3. Treat the bifurcation lesion of the LAD and the DB with single-stent strategy unless the DB is not occluded

[Final Result]

The procedure was performed via the left radial artery approach with a 6Fr CLS 4.0 Mach1 guiding catheter. An X-TR guidewire (GW) supported with a Caravel microcatheter (MC) passed through the DB. The lesions of the proximal LAD and the ostial DB were dilated with a 1.5 mm balloon. Rotablation was performed because a View IT IVUS catheter could not pass through the lesion. A 1.5 mm burr passed through the proximal LAD lesion. But, the Caravel MC could not pass the distal LAD lesion. A 1.0 mm balloon also could not pass it even with buddy wire technique. Thus, rotablation was performed again for the distal LAD lesion. The 1.5 mm burr could pass it. After the rotablation, the Caravel MC could pass it. The lesions of the LAD and the DB was dilated with 2.5 mm and 1.5 mm balloons, respectively. After an Ultimaster drug-eluting stent (DES) 2.75 × 38 mm was implanted in the LAD jailing the DB, the DB was subtotally occluded. The X-TR GW and a SION black GW supported with a SASUKE double lumen catheter could not pass the DB. It was thought that because the ostium of the DB was blocked with calcified plaque, a stiff wire was needed to penetrate the solid block. A Gaia second GW failed to enter the DB, and a Conquest Pro was carefully tried to pass it. The Conquest Pro GW successfully passed through the ostial DB, and it was dilated with the 1.0 mm balloon. The Caravel MC could enter the DB. After the GW in the true lumen was checked with tip injection, the ostial DB was dilated with the 1.5 mm balloon, and the flow of the DB was improved. However, residual stenosis with dissection in the ostial DB was observed. Accordingly, the two-stent technique was performed. A Resolute Integrity DES 2.25 × 22 mm was deployed from the LAD to the DB. The SION black was re-crossed to the LAD and the strut was dilated with a 2.5 mm balloon. Kissing balloon inflation was performed with the 2.5 mm balloon and the 2.25 stent balloon. An Ultimaster DES 3.0 × 24 mm was implanted in the proximal LAD. The high lateral branch (HL) had been occluded probably due to dissection with GW manipulation at the beginning of the procedure. Final angiography showed good flow of the LAD and occlusion of the HL with collateral flow from the LAD to the HL. The procedure was ended without treatment of the occluded HL because chest symptom of the patient and electrocardiographic change have improved.

When a side branch is occluded with calcified plaque after stenting in a main vessel and floppy wires can not re-cross the branch, penetration with a Conquest Pro is effective to re-cross it. An IVUS study is helpful to decide to use this stiff wire with detection of calcified plaque near a side branch.