Successful CTO PCI with Two Rendezvous, a Kiss and Diamonds

Aaron Sung Lung Wong

[1]Cardiology, National Heart Centre Singapore, Singapore

Case:

71-year-old man presented with sepsis and NSTEMI with LVEF of 36% and regional wall motion abnormality. Cath showed LM and triple vessel disease with LAD CTO. He had severe peripheral vascular disease and was rejected for CABG. He was scheduled for PCI to left coronary artery.

Target Lesion:

Distal LM showed 60% lesion and there was dual LAD system with a large diagonal one, which has 75% lesion, and mid LAD was totally occluded after the D1. The CTO segment was short but severe calcification was noted at the CTO segment and mid LAD. Good ipsilateral collaterals was noted from large D1.

Strategy:

Procedure was performed via right radial approach using 6 Fr EBU 3.5. Proximal LCX was treated first with stenting with 2.25 mm DES and post dilated with 2.5 mm NC balloon.

LAD CTO was attempted antegradely with Fielder XTA and GAIA Next 2 but failed to enter true lumen despite the lesion was short after more than 45 minutes. Retrograde approach via epicardial collateral through D1 was attempted. SUOH 03 in 150 cm Caravel successfully negotiated the tortuous epicardial collateral and Gladius EX successfully crossed retrograde and entered the EBU guide. However, Caravel MC was not able to cross CTO segment retrogradely due to severe calcification and attempt was not aggressive as fear of collateral channel damage.

The first Rendezvous was performed by wiring the Gladius EX into Finecross MC. Even with the Gladius EX wire inserted as distal as possible, Finecross was not able to cross CTO segment due to severe calcification and poor support. By placing the antegrade Finecross MC as deep as possible inside the CTO segment, the retrograde was withdrawn while the antegrade Fielder XTA was advanced. Using retrograde wire and MC as marker, kissing wire technique was performed successfully and entered the retrograde MC, the second Rendezvous.

With the help of guide extension catheter, 1.5 mm and 2.0 mm NC balloon was able to cross the CTO lesion. TIMI 3 flow was established with luminal gain.

LM to LAD was then first treated with Wolverine and stented from LM to LAD with 2.75 x 33 mm DES and POT with 4.0 mm NC balloon in LM, followed by post dilatation with 3.5- and 3.0-mm NC balloon in proximal LAD.

Final Result:

After several pre-dilatation with 2.0 mm NC balloon, there was still significant residual lesion, and distal LAD was noted to be small in caliber. Decision was made not to performed atherectomy as there were significant dissection present and LAD caliber may increase with time, and used this as an investment procedure. He was planned for a re-look and possible atherectomy with stenting of his mid LAD CTO lesion.

Relook and PCI to LAD:

The patient came back for re-look 6 weeks later and mid LAD CTO segment was 90%. After predilatation with 2.0 and 2.25 mm NC balloon, the lesion failed to dilated. Even with 2.0 mm OPN at 40 atm, there was still waist on the balloon.

Decision was made to rotational atherectomy where a 1.25 mm bur was successfully passed the lesion. Post dilated with 2.25 mm NC balloon showed better expansion and eventually stented with 2.0 x 38 mm DES overlapping with previous stent. Post dilated proximal stent with 3.0 mm and mid with 2.5 and 2.25 mm NC balloon. Large D1 was recrossed and kissed with 2.5 mm NC balloon in each vessel.