Successful PCI for RCA CTO with Unusual Origin of RCA Ostium Using Retrograde Wire Crossing and Retrograde Wire Captured in Iliac Artery

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Case: 63 y.o male

【chief complaint】  effort chest oppression
【present illness】
  2010.5  PCI to mid LAD, mid-distal LCx
  2011.3  admission for the PCI to RCA CTO
【past history】
  chronic atrial fibrillation (onset unknown)
  chronic kidney disease (cre 1.6mg/dl, eGFR 40ml/min)
【family history】 father: post pacemaker implantation
  brother: old myocardial infarction
【history of life】 past smoker (44years x 20cigarettes/day)
【coronary risk factor】
  hypertension, hyperlipidemia, smoking
【echocardiography】
  normal wall motion, ejection fraction: 62%
  asynergy(-), valve: intact, left atrial enlargement
Unusual origin of RCA ostium, high and front takeoff.
Collateral flow from LAD and LCx, grade 3 on the Rentrop scale.
Coronary CT
• A 8Fr SAL2.0SH guiding catheter (Launcher) was engaged in the right and a EBU4.0SH-90cm guiding catheter (Launcher) in the left coronary artery through the bi-femoral approach, respectively.

• At first, the antegrade approach was attempted. It was tried with the Fielder XT system with Corsair. Then the guidewire was changed to ULTIMATEbros. 3g.

• But we couldn’t control the wire intentionally due to insufficient buckup of the guiding catheter not engaged coaxially.
Change to retrograde approach

GC: 8F Launcher EBU 4.0 SH 90cm
GW: Fielder FC with Corsair
By using the combination of a Fielder FC 0.014 inch guide-wire and a corsair 0.014 inch 1.8Fr-150cm microcatheter, the arterial lumen distal to the CTO lesion was successfully reached through the septal branch.
By exchanging the system to ULTIMATEbros 3g, retrograde wire was passed into the CTO space to then reach the proximal true lumen.
• We wanted to insert the wire into right guiding catheter, but the right guiding catheter was not engaged coaxially due to unusual origin of RCA ostium, so the wire was not inserted into the catheter.

• The corsair was moved to ascending Aorta and the 0.014 inch-300cm Fielder FC guide-wire was inserted from left guiding catheter to iliac artery via ascending and descending Aorta.
• The right guiding catheter was moved to iliac artery and EN Snare 3 loops snare catheter (6Fr, loop size 6-10mm) was inserted.

• The snare catheter caught hold of the retrograde wire.
• So the retrograde wire was inserted into right guiding catheter lumen and then corsair microcatheter was inserted into right guiding catheter.
• The 0.010 inch-300cm RG3 guide-wire was inserted from left guiding catheter to right guiding catheter forming wire loop (retrograde wire externalization).
We deployed Cypher select+ 3.5/33mm, 3.5/23mm and CBA at distal RCA.
Final CAG

RAO view

LAO view
Final CAG

AP cranial view

Procedure time: 200min
Fluoroscopic time: 88min
Contrast amount: 170ml
10 months follow up CAG
10 months follow up CAG
• We performed successful PCI for RCA CTO using retrograde wire crossing and retrograde wire captured in iliac artery.

• Using snare catheter in iliac artery was good for making wire externalization in case the retrograde wire was not inserted into antegrade guiding catheter.

• We must care about the position of retrograde guiding catheter. (in this case, the left guiding catheter was engaged deeply when we tried to make wire externalization)