Target: LCX

1. Keep GC, retrograde wiring OM2 from LAD collateral branch by GW3+MC1, with successfully wiring to distal LCX proper, but failed to broken fibrous cap to proximal LCX
2. Change wire to GW4, retrograde attempt to proximal LCX but still failed
3. Successfully antegrade wiring to distal LCX proper by GW5+MC2
4. POBA to LCX CTO with BC3 up to 10A10°, BC4 up to 10A10°, BC5 up to 12A 10°
5. Passed MC2 antegradely to LCX distal proper, wiring to OM2 with GW3 from antegrade direction, check IVUS for lesion length.
6. POBA with BC6 to LCX-OM2 up to 10A10°
7. Deploy Xience Prime 2.5*38mm to LCX-OM2 up to 12A10°
8. Deploy Xience Prime 3.0*38mm to LM-LCX up to 12A10°
9. KBT with BC8 to LM-LAD; BC7 to LM-LCX up to 14A10°, with good final result

Case Summary. 1. Preservation of a main branch is warrant in CTO treatment.
Strategy planning is very important, especially in retrograde approach.
2. For lesion which close to bifurcation, especially high angulation.
Crusade would provide a good support to engage the side branch.

[CLINICAL INFORMATION]
Patient initials or identifier number. 2091421
Relevant clinical history and physical exam. A 50 Y/O man with history of well-treated hypertension for 3 years presented to our hospital with massive hemoptysis in March 2014. He underwent left pneumectomy because of intractable lung bleeding. After the surgery, it was difficult to wean mechanical ventilation because of dyspnea and episodes of acute pulmonary edema on minor stress, such as strenuous cough. Elevated serum troponin-I level and clinical presentation raised the suspicion of coronary artery disease with acute coronary syndrom

Relevant test results prior to catheterization. Chest-X-ray showed complete opacity over left lung, pulmonary edema pattern over right lung and cardiomegaly. EKG showed normal sinus rhythm, Poor R wave progression in V1-V3. Echocardiography showed normal chamber size, moderate aortic regurgitation, mild regurgitation of mitral/tricuspid/pulmonary valves, preserved LV systolic function with EF of 50%

Relevant catheterization findings. LMCA: 70% stenosis at ostium and distal part, pressure dampened after engaging JL catheter.
LAD: 100% Chronic total occlusion at ostium without stump.
LCx: non-dominant, small caliber and luminal irregularity.
RCA: Dominant vessel with very large caliber. Giving abundant collateral flow to LAD via septal channels and corkscrew-like epicardial channels from RV branch.
**INTERVENTIONAL MANAGEMENT**

Procedural step. PCI was performed by R’t transradial and R’t transfemoral approach

Retrograde approach

1. LM was engaged by 6F EBU 3.5, RCA by 7F AL1 with handmade SH
2. A Sion wire loaded in 150cm Corsair MC was advanced through septal channel and into LAD retrogradely.
3. Boston Scientific Atlantis SR Pro 40 MHz IVUS catheter was advanced to LCx ostium along a Sion wire.

Antegrade approach by IVUS-Guide

1. Under IVUS-guide, LAD ostium was identified and punctured by Miracle-6 wire loaded in FineCross MC. Wire tip kinked and was replaced by ProVia 9 wire.
2. ProVia 9 successfully passed CTO hard proximal cap, kissed retrograde wire, and into diagonal branch 1 (Db1).
3. CTO Lesion was dilated with 1.5*12mm Sprinter balloon.
4. A Sion wire was advanced to distal LAD through opened CTO tract. Wire position in LAD true lumen was confirmed by IVUS. ProVia-9 wire in Db1 was withdrawn.
5. CTO and LM lesions were further dilated with 3.0*20 mm Maverick balloon. TIMI 3 antegrade flow appeared.
6. Two Xience Prime stents (4.0*38mm & 4.0*12mm) were deployed over LAD-LM & LM ostium respectively with minimal overlap.
7. Post-dilatation by 4.5x20mm Quantum balloon at 20-26 atm.
8. Final Angiographic result was good with TIMI 3 flow to LAD & LCx. Final IVUS showed good stent expansion/apposition.

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1. LM was engaged by 6F EBU 3.5, RCA by 7F AL1 with handmade SH.
2. A Sion wire loaded in 150cm Corsair MC was advanced through septal channel and into LAD retrogradely.
3. Boston Scientific Atlantis SR Pro 40 MHz IVUS catheter was advanced to LCx ostium along a Sion wire.

4. Gaia second and Miracle 3 wires were both advanced into CTO retrogradely but failed to enter LAD ostium and LM. IVUS showed subintimal tracking. Wire was kept in LAD false lumen as a landmark.

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5. LM was engaged by 6F EBU 3.5, RCA by 7F AL1 with handmade SH.

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6. Under IVUS-guide, LAD ostium was identified and punctured by Miracle-6 wire loaded in FineCross MC. Wire tip kinked and was replaced by ProVia 9 wire.

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7. CTO Lesion was dilated with 1.5*12mm Sprinter balloon.

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11. Post-dilatation by 4.5x20mm Quantum balloon at 20-26 atm.

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12. Final Angiographic result was good with TIMI 3 flow to LAD & LCx. Final IVUS showed good stent expansion/apposition.
Case Summary. Stumpless CTO at LAD ostium is difficult to be recannalized by antegrade approach. In this case, we initially tried retrograde approach through PDA and septal channel to LAD. With the help of IVUS imaging at LCx ostium, we identified that retrograde wires were advanced into true lumen over proximal LAD, but subintimal tract over LAD ostium and LM. In this moment, retrograde wire was left in place as a landmark and IVUS-guided antegrade approach was preceded. Under IVUS-guide, LAD ostium was identified and punctured by a stiff wire. Wire further passed CTO, kissed the retrograde wire in CTO true lumen and reached diagonal branch. OS-LAD CTO true lumen revascularization were confirmed by IVUS.

TCTAP C-091
Successful PCI of RCA CTO Bifurcation Lesion Using Side-Branch Technique
Bing Liu1
1Beijing Hospital, China

[CLINICAL INFORMATION]
Patient initials or identifier number. XF
Relevant clinical history and physical exam. 64ys,male
- Effort Chest Pain in 8 yrs
- ASTEMI 8 yrs ago undergone thrombolytic therapy, but failed.
- Routine MT continuously
- Risk Factor: HTN, Ex-smoker