Relevant catheterization findings:
Triple vessel disease. Detail findings as follows: LM was patent; LAD was 100% occlusion from proximal segment with ipsilateral collateral flow from septal branches and contralateral collateral flow from RCA; LCX was also 100% occlusion from proximal LCX with bridging collateral flow and contralateral collateral flow from RCA; and RCA was 100% occlusion from PDA with contralateral collateral from LCA. The Syntax score was 30.

[Interventional Management]
Procedural step:
We used bilateral approach from right radial artery and left femoral artery. The guiding catheter was 6Fr. Kimny for RCA and 6 Fr. EBU for LCA. First, runthrough floppy wire and Fielder FC wire crossed the RCA lesion. A 3.0 X 20 mm semi-compliant and 4.0 X 18 mm non-compliant balloon were dilated to the RCA then stenting by two overlapping Resolute Integrity DES (3.5 X 38 mm and 4.0 X 30 mm) from distal to middle RCA were performed successfully. Second, antegrade approach to the LAD CTO lesion was attempted by Fielder FC, progress 40. Runthrough floppy and Provia 9 wires but failed. Therefore, retrograde approach via ipsilateral intraseptal collateral to the LAD CTO lesion by SiON blue wire with Finecross microcatheter support was done. Reverse CART technique was performed by 2.5 X 12 mm semi-compliant and 3.0 X 20 mm semi-compliant balloon to the LAD CTO lesion. Retrograde wire and Finecross microcatheter crossed the LAD CTO segment into the EBU guiding catheter successfully. Rendezvous method was used with antegrade and retrograde microcatheters aligned in the antegrade guiding catheter, and an antegrade guidewire was inserted into the retrograde microcatheter successfully. During Rendezvous procedure, a 2.5 mm balloon was inflated in the antegrade GC to trap the retrograde wire for helping pulling the retrograde microcatheter into the GC. When deflating the balloon, antegrade GC sprang out the coronary artery with retrograde wire tear the septum. Septal br. Perforation (type III) occurred with contrast spilling to the septum continuously. Patient had chest pain and mild hypotension. Hydration was given. Stenting to the LAD by two Resolute integrity DES stents (3.0 X 38 mm and 2.5 X 30 mm) were performed quickly under the guidance of IVUS and the septal coronary artery perforation persisted. Transsthoracic echo was performed immediately after PCI which confirmed the septal hematoma formation with 4.4 cm in thickness. No RVOT obstruction or VSD was noted. Protamine was given and patient’s hemodynamics was stable after hydration.

Clinical course: At MICU, hydration with normal saline 2000 ml was given to prevent dry cardiac tamponade (ie. potential development of RVOT obstruction due to hematoma). The blood pressure was around 120-140 mmHg. The symptom of chest pain was gradually relieved and subsided within hours. Serial post-procedure cardiac echogram revealed resolve of septal hematoma gradually without any evidence of RVOT obstruction or VSD formation. But a small shunt from septum to RV was found. Cardiac MRI on post-procedure day 9, showed septal hematoma around 3.8 cm without RV thrombus. His condition was relatively stable and he was discharged smoothly.

Case Summary:
A 55-year-old man was presented with CCS III angina for 3 months. Coronary angiogram showed triple vessel disease with three chronic total occlusions (CTO) of LAD, LCX and RCA. He underwent percutaneous coronary intervention to the RCA successfully. When doing PCI to LAD CTO via ipsilateral intra-septal collateral branch, septal artery perforation (type III) occurred with large septal hematoma formation. Hypotension occurred. He was treated by protamine, and fluid resuscitation. Successful PCI to the LAD CTO was completed. His clinical condition stabilized. Spontaneous resolution of septal hematoma was noted on serial cardiovascular and cardiac MRI. This complication highlights the technical challenges associated with such cases. Caution should be used when crossing septal perforators with extra-support catheters because these have the potential to create significant injury to the ventricular septum.

TCTAP C-083
Retrograde Recanalize LM Ostium CTO Without Stump and RCA CTO in a Twice CABG Patient
Hsiu-Yu Fang, Chiung-Jen Wu
Chang Gung Memorial Hospital, Kaohsiung Medical Center, Taiwan

[Clinical Information]
Patient initials or identifier number:
74 y/o male 3426089
Relevant clinical history and physical exam:
A 74 years old male with hypertension and diabetes. He had twice CABG history in Chicago at 1983 and in Kuo-Tai Taiwan at 2005. Complain about frequent chest tightness recent months. The chest tightness happened on exertion when he taking a shower. The symptoms progress day by day 1983 CABG in Chicago 2005 CABG in Taiwan Hospital with only SVG to LAD + RCA native 2D echo showed impaired LVP and diffuse hypokinesia with LVEF ~ 33%
Relevant test results prior to catheterization:
RCA dominant vessel with p-RCA was totally occluded.
SVG to LAD was patent and m-LAD gave septal collaterals to PDA
SVG to OM and RCA were occluded in previous angiogram so not injected at this angiogram

[Interventional Management]
Procedural step:
Patient said: no more CABG!!!
PCI to LM under IVUS guide and IABP support
Combine with shock-wave therapy
Staged PCI to RCA in the future

Step 1: PCI to LM-LAD
* Retrograde wire successful to Ascending Aorta
Retrograde Fielder FC wire cannot advance to LM ostium
Miracle 3 wire successfully advanced to AsAo under Finecross microcatheter support
* Retrograde balloon dilatation
Due to bradycardia and shock, IABP was set up through right femoral artery.
Retrograde balloon Mini-trek 1.2x6mm, 1.2x12mm, 1.5x12mm, 2.5x20mm sequential dilatation. (Including protruding balloon dilatation)
* After retrograde balloon dilatation, 6Fr. Ikari GC can engage LM
* Antegrade balloon and stent
Hiryu 3.0x20mm up to 24 atm, Hiryu 3.5x20mm up to 24 atm. Xience Prime 3.5x28mm, 4.0x28mm at mid LAD to ostium LM

Step 2: Combine with Shock Wave Therapy
Step 3: PCI to RCA CTO

TCTAP C-084
IVUS-guided Retrograde Puncture of a Perforated RCA CTO
Hsin-Yu Fang, Chiung-Jen Wu
Chang Gung Memorial Hospital, Kaohsiung Medical Center, Taiwan

[Clinical Information]
Patient initials or identifier number:
Mr. Fang
5892889

[Interventional Management]
Procedural step:
- Retrograde>
A 0.014” Runthrough NS guidewire was advanced to the septal branch through the LAD stent struts. A Mini Trek 1.5 x12 mm balloon was inflated to open the stent struts with 20atm. The GW was exchanged to Sion GW using a Finecross MC. Then was