RCA CTO PCI using marker wire technique

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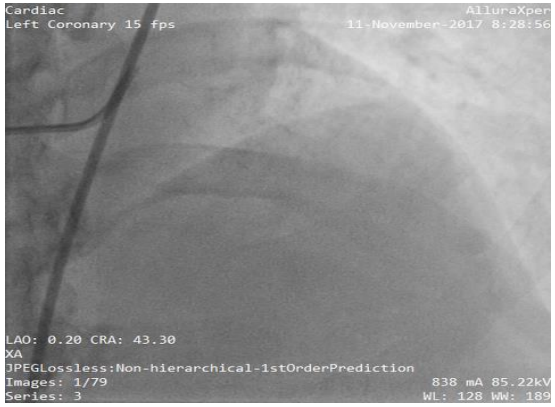
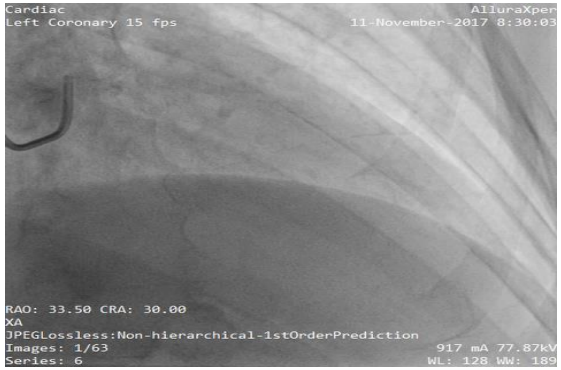
Clinical details

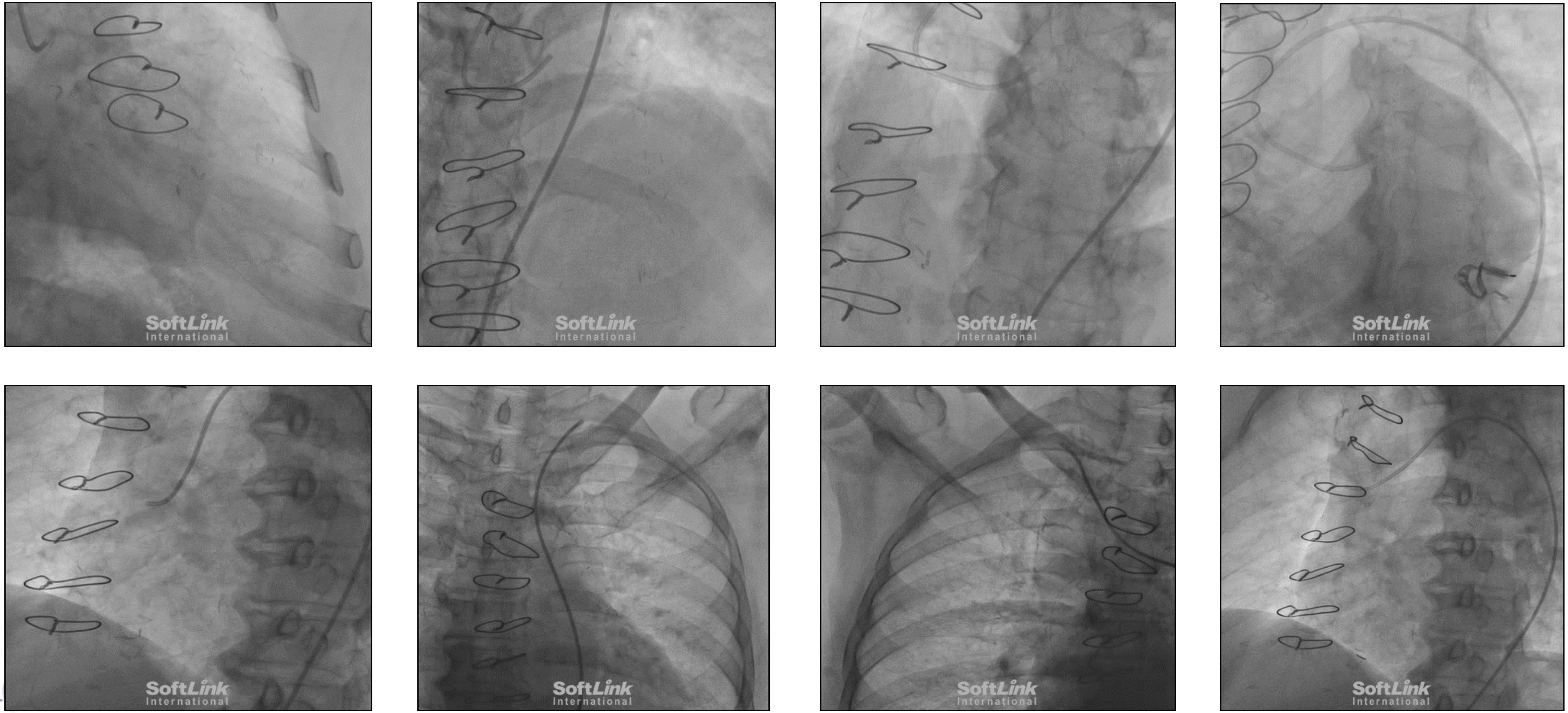
- 63 year old male patient named Mr P C
- Hypertension(10 years), Diabetes(7 years), Dyslipidemia(7 years)
- Post CABG(2017)- LIMA-LAD, RSVG-OM, RIMA-PDA
- ECG- NSR; ECHO- EF-50%, Trace MR
- Stress sestamibi- Large reversible perfusion defect in RCA territory with high grade inducible ischemia

Pre CABG Coronary Angiogram(2017)





Present Coronary Angiogram shows patent LIMA-LAD and occluded vein graft to OM. The RIMA graft is occluded and atretic.

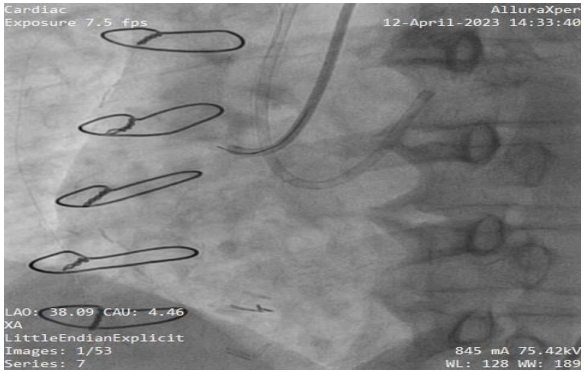


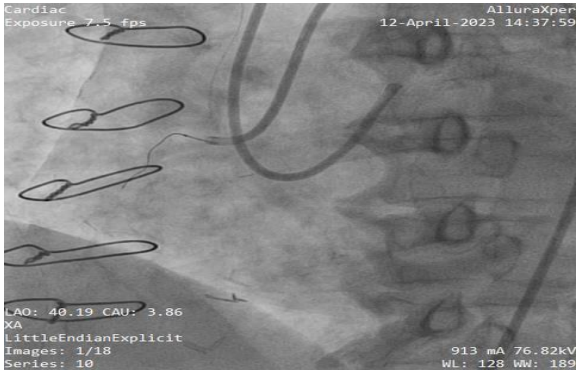
Interventional Plan

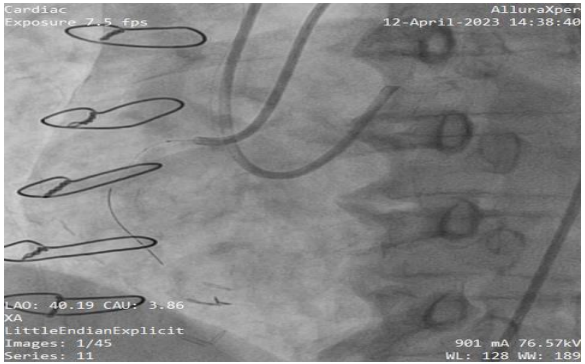
- Target Vessel- RCA(J-CTO-1)
- Access- Right Femoral- 7F JR guiding, Right Radial-7F EBU
- Strategy- 1) Antegrade Wire escalation(AWE)

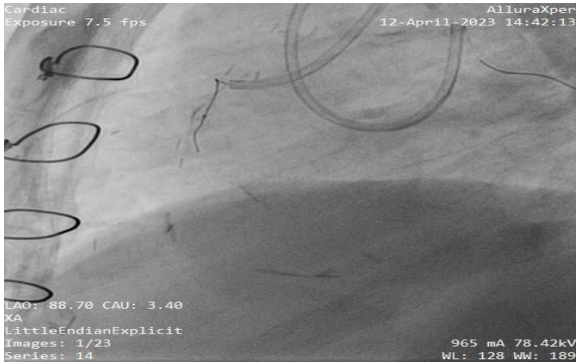
  2)Retrograde via septal collateral from LAD

Bilateral injections were taken. Antegrade wire escalation was attempted with Pilot 50 guidewire. The wire travelled some distance but failed to advance further and wire movement did not look promising.

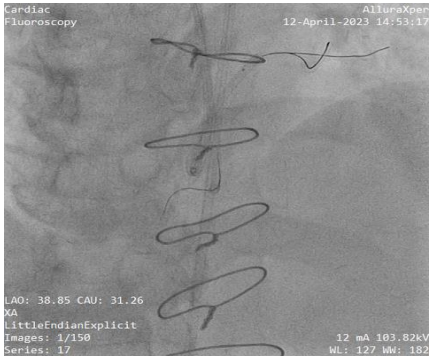


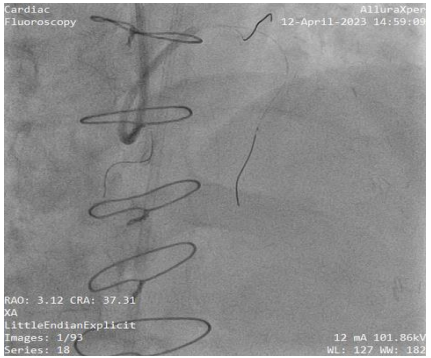


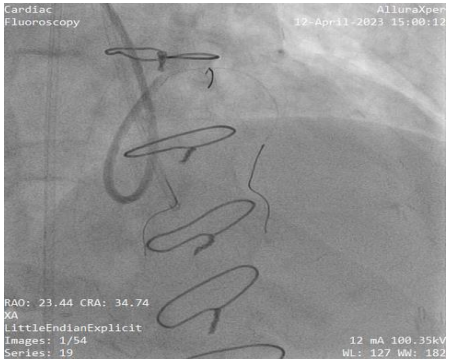


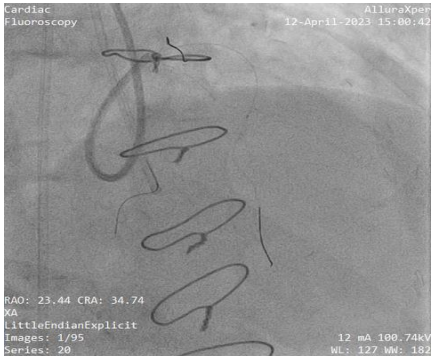


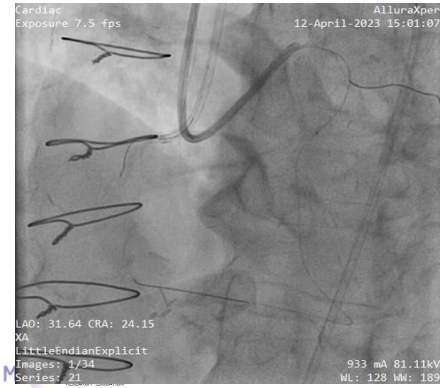
We decided to go retrograde. We used a Sion Blue wire for septal surfing. After some attempts, we were able to reach the distal RCA via septal channel. We confirmed the position of the wire microcatheter tip injection. We tried to do retrograde wire escalation with a Fielder XT wire but failed. The wires positions were seen in two orthogonal views.

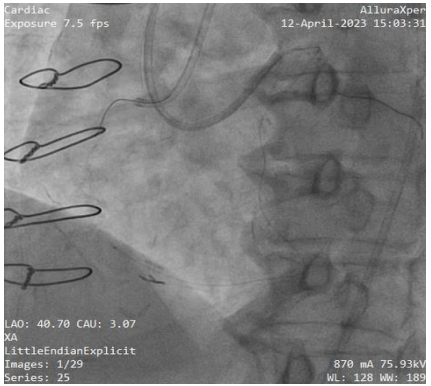


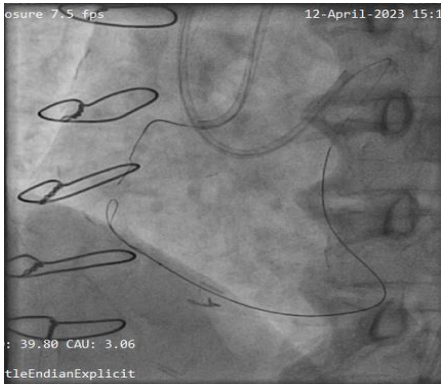


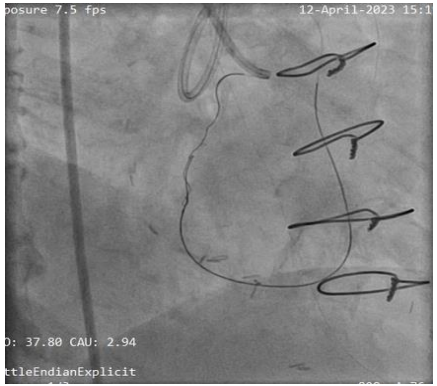




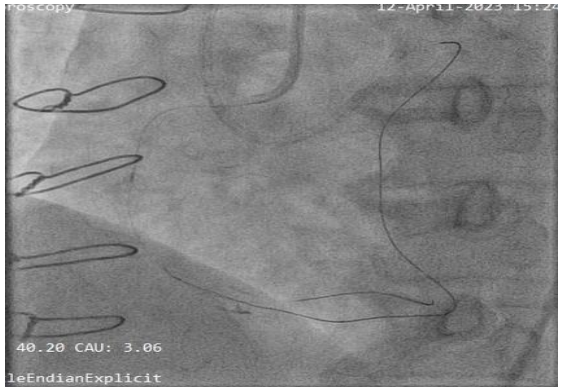


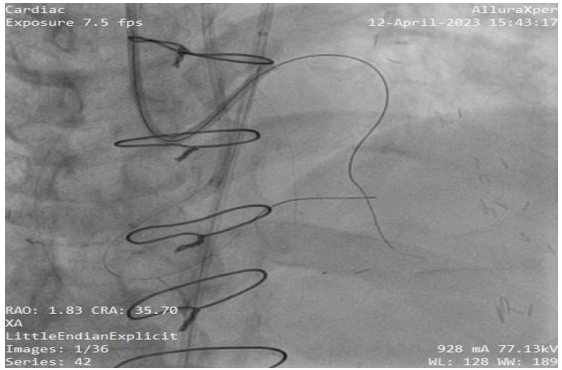


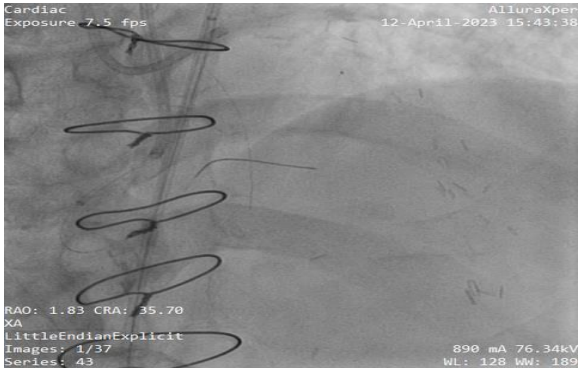




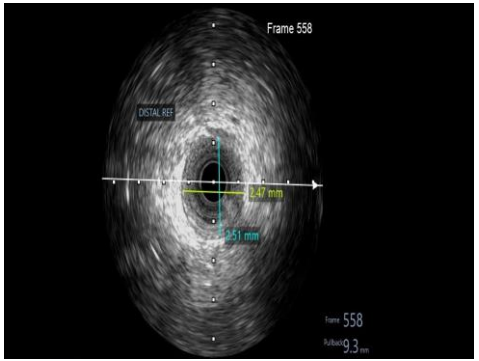
Using the retrograde wire as a maker, we used a pilot 150 guidewire to cross Antegrade. We were able to wire the PLV branch. After confirming the Antegrade wire position, we pulled the retrograde micocatheter and wire back and confirmed the integrity of the septal collateral.

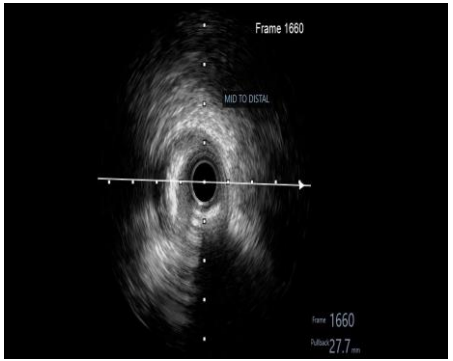


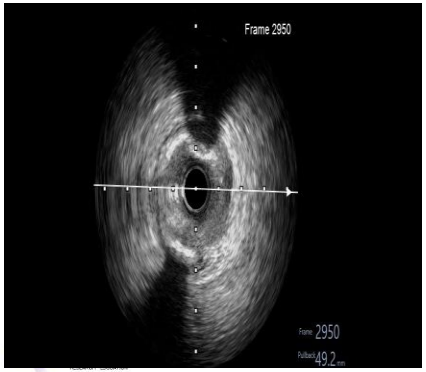


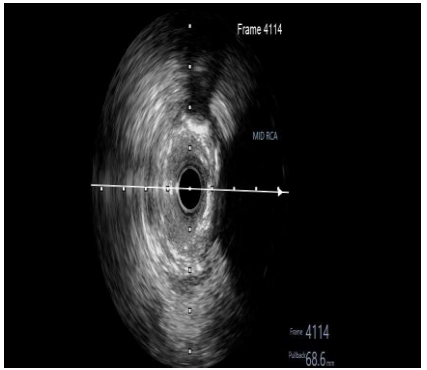


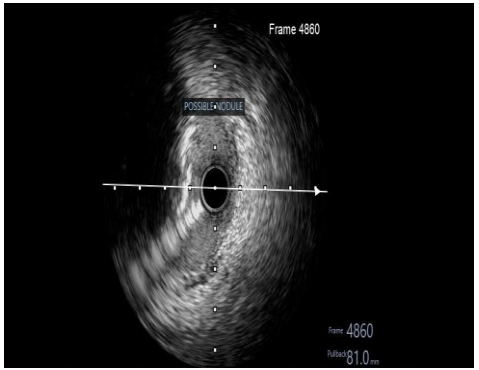
We had to use a 1.0 mm balloon with a 5.5F guideliner support to cross the mid RCA lesion. The lesion was then predilated with a 2.5 mm NC balloon and then over a microcatheter, the pilot 150 was exchanged for a workhorse wire. IVUS was done which showed fibrocalcified disease in the RCA.

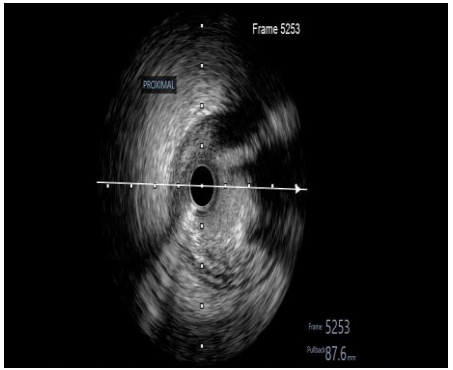




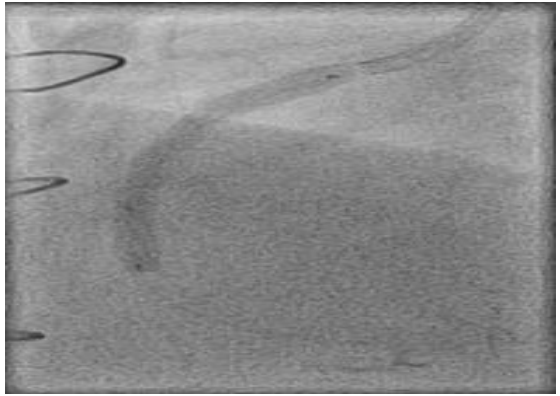


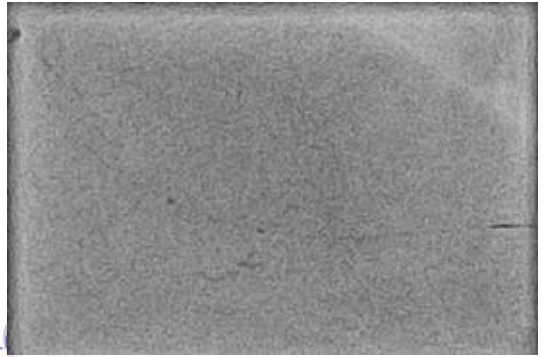


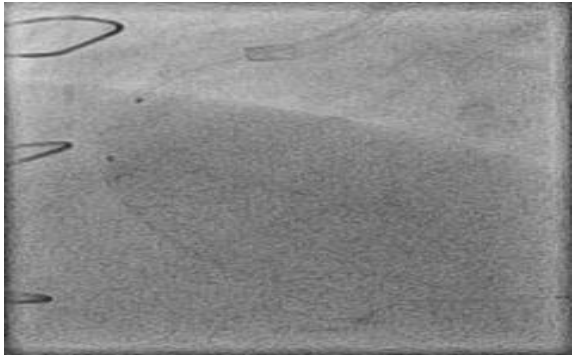


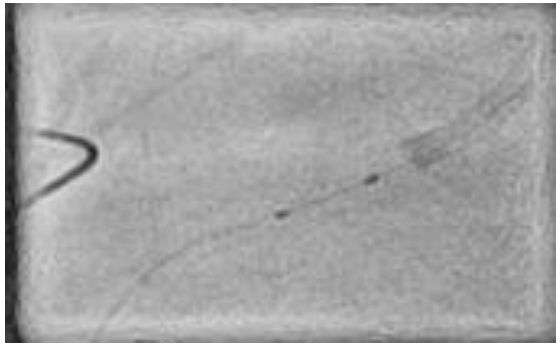


The lesion was predilated with a 3.0 mm NC balloon. 2 overlapping stents 3*38 and 3.5*38 was placed from ostium till the crux. The stent was optimized with 3.0, 4.0 and 4.5*8 mm NC balloons.

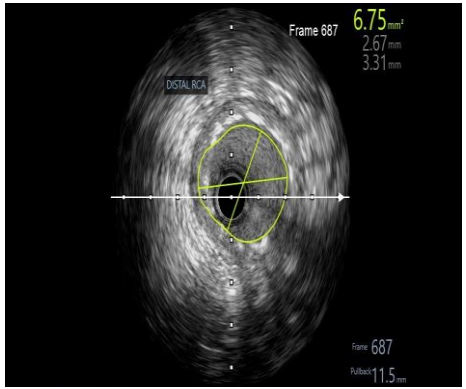


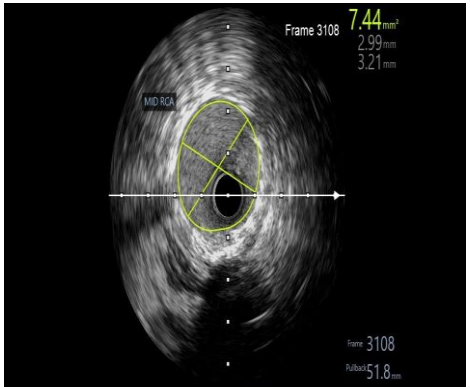


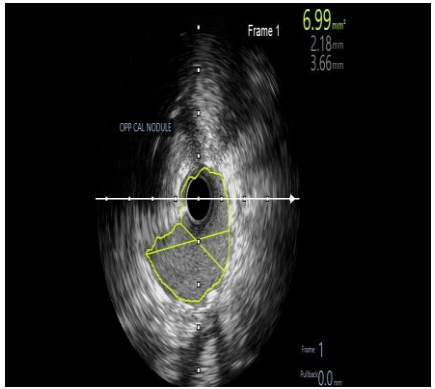


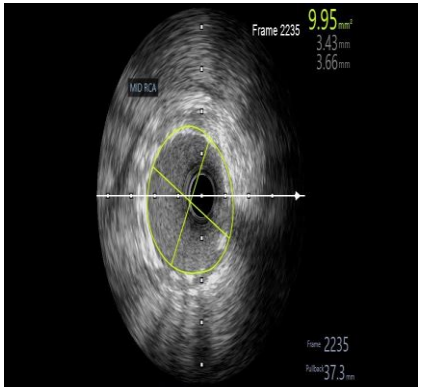


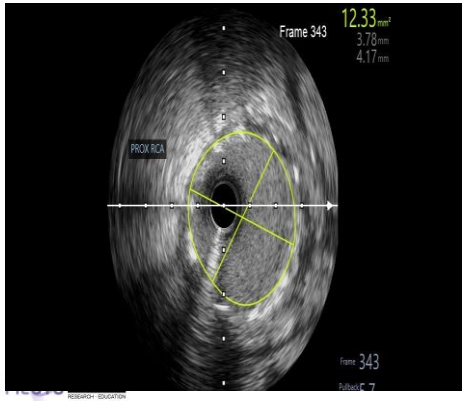
Final Angiographic and IVUS result was satisfactory

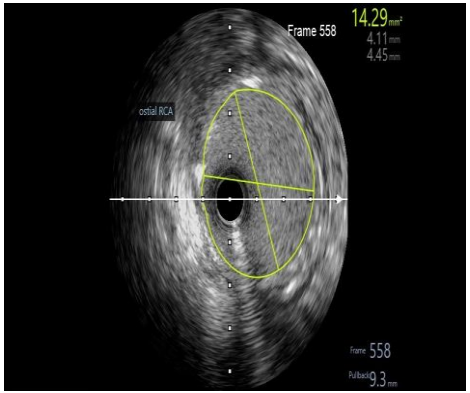


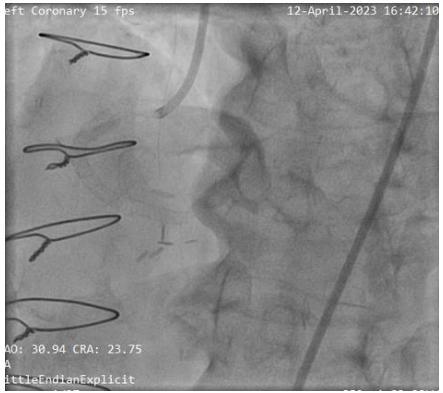












Take Home Messages

- Familiarity with the hybrid approach is essential in ensuring CTO PCI success
- ‘Just Marker’ technique is a useful way of crossing the CTO Antegrade in cases where the vessel course is unclear
- Guide extension catheter help in balloon uncrossable lesions
- IVUS helps in achieving adequate long term outcomes in CTO PCI