

[CLINICAL INFORMATION]

Patient initials or identifier number. Y.I.

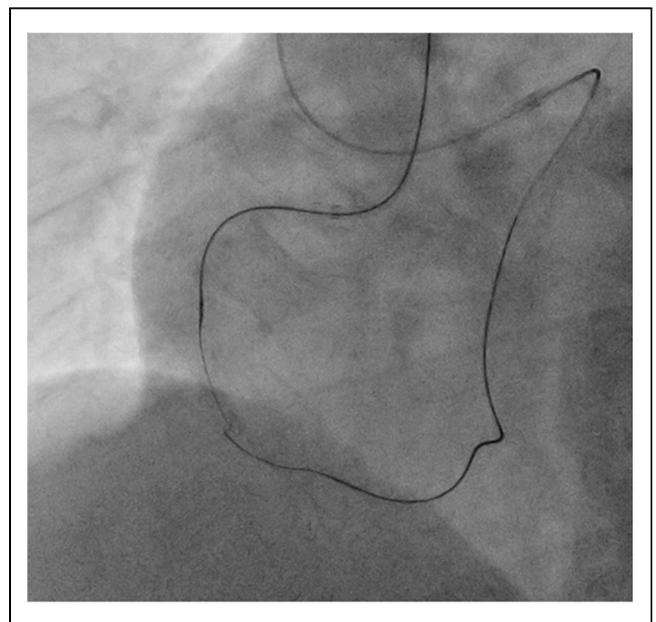
Relevant clinical history and physical exam. The patient was a 77-years-old male. He had felt dyspnea on effort from few weeks ago. He had received hemodialysis for twelve years. He was treated as hypertension and diabetes mellitus and received some medication. But he has not smoked ever and had no family history of coronary artery disease and stroke. He performed percutaneous coronary intervention (PCI) for right coronary artery (RCA) 2 years ago and for left anterior descending (LAD) twice 2 years and 4 years ago.

Relevant test results prior to catheterization. The electrocardiogram (ECG) revealed complete right bundle branch block and premature ventricular contraction. The echocardiography revealed inferior hypokinesia, and ejection fraction was 60%.

Relevant catheterization findings. Coronary angiography (CAG) revealed RCA was chronic total occlusion (CTO) at proximal segment. Distal RCA was filled by the collateral circulation from LAD septal branch to RCA distal branch. And we found small island at mid RCA.

[INTERVENTIONAL MANAGEMENT]

Procedural step. We used a 7 Fr JR 4.0 SH (Medtronic) guiding catheter from right femoral artery. Firstly we used Ultimate bro3 3 (ASAHI) with Corsair (ASAHI) for antegrade approach. We could advance the wire and corsair to island at mid RCA, and performed tip injection. We found totally long occluded from mid to distal. So we decided to start retrograde approach. We used a 6 Fr EBU 3.75 SH (Medtronic) guiding catheter from left femoral artery. We used XT-R (ASAHI) with Corsair Pro (ASAHI) for septal channel tracking. After crossing channel, we changed the wire to Ultimate bro3 3, but could not advance the wire to mid RCA because of severe calcification. Therefore we started antegrade wiring by using Conquest Pro (ASAHI) with Corsair. On the way, we changed antegrade system to 7 Fr SAL 1.0 SH (Medtronic) with Guidliner (Japan Lifeline) to get enough backup. Fortunately, we could advance Conquest Pro and close to retrograde wire, so we performed rendezvous technique at mid RCA. After rendezvous technique, we could advance the wire to distal RCA. Then we could dilate small balloon and performed externalization with RG3 (ASAHI). We found severe entire circumference calcification from intravascular ultrasound findings and we thought Rotational Atherectomy necessary. We performed debulking by 1.75 mm barr. After debulking, we could dilated by Sapphire 2 NC 2.5 x 15 mm (Orbusneich) and Hiryu Plus 3.0 x 20 mm (TERUMO). Finally, CAG revealed good antegrade flow and no complication.



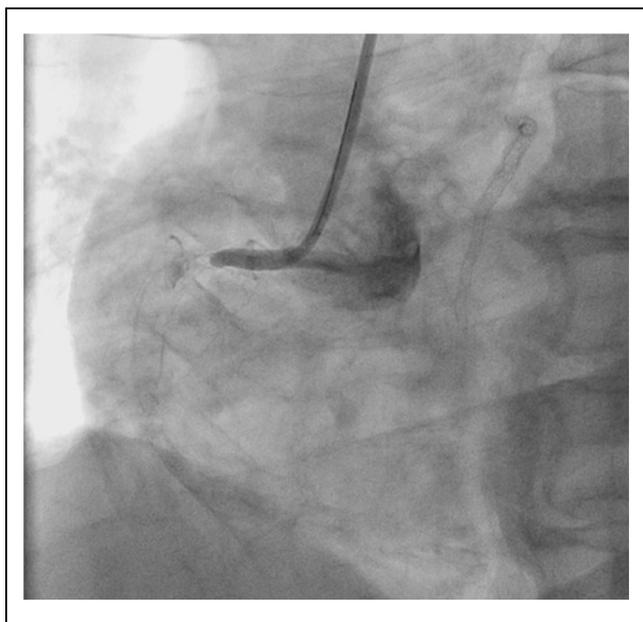
Case Summary. TUA approach is safe and feasible alternative wrist access, providing high success rate and low incidence of vascular complications.(Catheter Cardiovasc. Interv. 2014 Jan 1;83(1):E51-60).

In patients with Radial artery occlusion, ipsilateral trans-ular catheterization may not be an absolute contraindication ,extensive collaterals from the anterior interosseous artery may be the reason for protection against hand ischemia . (Catheter Cardiovasc. Interv. 2013 Dec 1;82(7):E849-55).Crusade microcatheter facilitated parallel wire technique to recanalize CTO. A 3.5x23 mm BVS would have been more suitable than 3.5x28 mm .

TCTAP C-101
Successfully Recanalization for Long Severe Calcified Chronic Total Occlusion Case with Hemodialysis

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Relevant test results prior to catheterization. UCG Show: Global EF: 63%, normal in systolic function, no significant valvular disease
CTA show: proximal LAD chronic total occlusion(CTO)

Relevant catheterization findings.

- 1) LMCA: Patent
- 2) LAD:
P/3: Stumpless CTO, just distal to Db2 branch side
Db1: Major branch, giving collateral flow to d-LAD via epicardial channel and Db4
- 3) LCX: Luminal irregularity.
D/3:tandem eccentric lesion, 70-80% stenosis
- 4) RCA: Luminal irregularity.
M/3: tandem eccentric lesions, 50%-60% stenosis
D/3:tubular concentric lesions, 80% stenosis
Giving collateral flow to m-LAD from Conal branch and epicardial channel

[INTERVENTIONAL MANAGEMENT]

Procedural step.

1. Perform anterograde wiring using the IVUS and CTO calcified cap as a marker.
2. Gaia II wire tip was directed to CTO proximal CAP under IVUS guide but always slipped into Db2 because of stumpless CTO and poor support.
3. Conquest pro wire supported by Crusade double lumen MC penetrated proximal CTO calcified cap but entered into false lumen.
4. Perform ipsilateral retrograde approach through epicardial collaterals from Db1 to Db4 and mid-LAD by using SION loaded in Corsair 150 cm MC.
5. Tip injection induced m-LAD dissection. Retrograde Gaia II wire always entered into septal branch or dissection channel.
6. The Miracle 6 wire retrogradely penetrated distal CTO CAP by using calcified lesion of CTO cap as maker and was advanced to mid-LAD and finally successfully crossed m-LAD CTO. The wire was advanced through proximal LAD, left main and to aorta.
7. Ipsilateral double guide catheters technique was performed by engaging another EBU 3.5(6Fr) guiding catheter to LMCA ostium via right radial artery access.
8. RG-3 330cm wire replaced the Miracle 6 wire through retrograde microcatheter and was successfully externalized through EBU3.5 (6Fr) guiding catheter.
9. Implant Stent (Xience Xpedition 2.75 x 48 mm) at the middle LAD and another Xience Xpedition 3.0 x 12 mm) at the proximal LAD.

Case Summary. Like this severe calcified hemodialysis CTO case, it was enormously difficult to cross the wire even though performing both antegrade and retrograde approach. We succeeded in crossing the wire by rendezvous technique. Patient with severe calcification especially in hemodialysis needs various CTO techniques.

TCTAP C-102

Complex Ipsilateral Retrograde Approach for Hard Stump-less Chronic Total Occlusion of Left Anterior Descending-Seeing Is Not Believing



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[CLINICAL INFORMATION]

Patient initials or identifier number. YCC 1835796

Relevant clinical history and physical exam. Male 44 year old. Chest tightness off and on for 2 years

Risk Factors: hyperlipidemia, smoking and positive family history (father had history of CAD with MI s/p CABG) cTnl: Normal ECG Show: Normal sinus rhythm

