Successful Recanalization of RCA CTO with Reverse CART and Modified Rendezvous Technique

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Case Summary

Patient Demographics
- 62 year-old male
- BMI: 24
- Heavy smoker

Patient Medical History
- HTN
- Type 2 DM
- Hyperlipidemia

Clinical Presentation
- chest tightness progressed at recent 2 months
- EKG
  - Q wave at II, III, aVF
- Persantin Myocardial Scan
  - Apical-septal ischemia
  - Inferior-lateral infarction
Diagnostic CAG on 2012/03/15 (1st)

80% stenosis

80% stenosis

70% stenosis

LAD
AP cranial view

LCX
RAO caudal view
Diagnostic CAG on 2012/03/15 (1st)

RCA LAO view
- 80% stenosis
- Total occlusion
- Bridging collateral

LVG
- Hypokinesis of inferior wall
- LVEF 42%
Final CAG on 2012/03/15 (1st)

LAD-P

Quantum BC
2.75*15mm

Trek BC
2.5*15mm

Promus E
3.0*16mm

LCX

Xience Prime
3.5*15mm

RCA-P
2nd CAG on 2012/10/05
(Symptom recurrent)

RAO caudal view
75% stenosis

AP cranial view
Patent LAD with collaterals to RCA
2nd CAG on 2012/10/05
(Symptom recurrent)

Instent 70% restenosis

Bridging collateral

AP cranial view

AP lateral view
PCI Strategies

- **Target Lesion:**
  - LCX-P: 75% stenosis
  - RCA-M: chronic total occlusion
    - *Antegrade approach*
    - *Retrograde approach*
  - RCA-P: ISR 70%
LCX-P stenting

LCX-P lesion

75% stenosis

Promus Element 2.5*16mm

LCX final
RCA-M
Antegrade approach

- AL 1/7 GC
- Fielder FC GW under the support of Finecross MC
- Step up to Conquest Pro 12 GW
- Failed due to false lumen advance
RCA-M
Retrograde approach
Which collateral is better?
RCA-M
Retrograde approach
Which collateral is better?
RCA-M to –D Retrograde approach

- Failure to advance to septal branch due to LAD-P stent structure.
RCA-M

Retrograde approach

Which collateral is better?
Retrograde approach

Septal dilatation with OTW MC 1.25*10mm

Trapped finecross
Retrograde approach
Tough channel crossing with Sion GW

Finecross MC injection  Sion GW advance
Retrograde approach
Tough channel crossing with Sion GW
Fine cross MC injection → Sion GW advance

Actual Pathway (CC0)
Choose Channel (CC1)
Kissing wire technique for antegrade re-wiring

- Antegrade GW: Congress Pro 12
- Retrograde GW: Sion → another Congress Pro 12
Reverse CART

2.5*15mm Trek BC
IVUS check

Retrograde GW

Retrograde GW

Retrograde GW
Modified Rendezvous Technique

- retrograde MC and wire
- Antegrade wire

Modified Rendezvous Technique

Rendezvous Technique

- Retrograde MC
- Antegrade MC
- step 1
- step 2
- step 3
Modified Rendezvous Technique

Runthrough floppy GW enter Finecross MC in 7 Fr. GC

Tip of finecross MC
RCA stenting

Promus E
3.5 *38mm

Nobori
3.5 *10mm
RCA final
Options after retrograde guidewire reaches the CTO distal cap

Antegrade crossing
1. Kissing wire
2. Just marker

Retrograde true lumen puncture
1. Antegrade balloon followed by antegrade wiring
2. Exchange strategies
   - Antegrade microcatheter probing
   - “Bridge or rendezvous method”
   - Reverse wire trapping
3. Wire externalization
   - Antegrade balloon + stent delivery over externalized guidewire
4. Retrograde stent delivery

Dissection strategies
- Reverse CART
- “Confluent balloon”
- “Knuckle”
- CART

Antegrade wire crossing

Conclusion

- After retrograde wire & microcatheter entering antegrade guiding catheter, Modified Rendezvous technique is feasible and safe, with high success rate and more cost-saving.
Modified Rendezvous Technique

• Tips and Tricks:
  Floppy wire with short and small angulated tip.
  Gently rotate and torque when wire tip touch the MC.