

Solution for highly tortuous lesion

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Definition of complex PCI

Complex CAD

- Multi- vessel disease
- Left Main disease, Bifurcation
- Calcification
- CTO
- **Tortuous lesion**



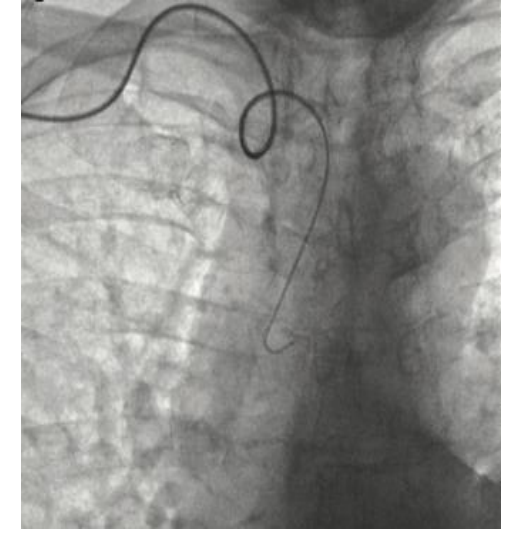
Abdominal artery



Radial artery

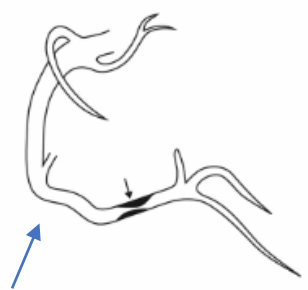
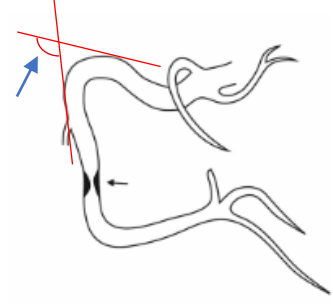
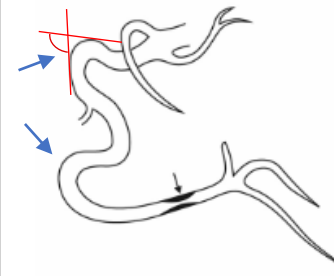


Iliac artery



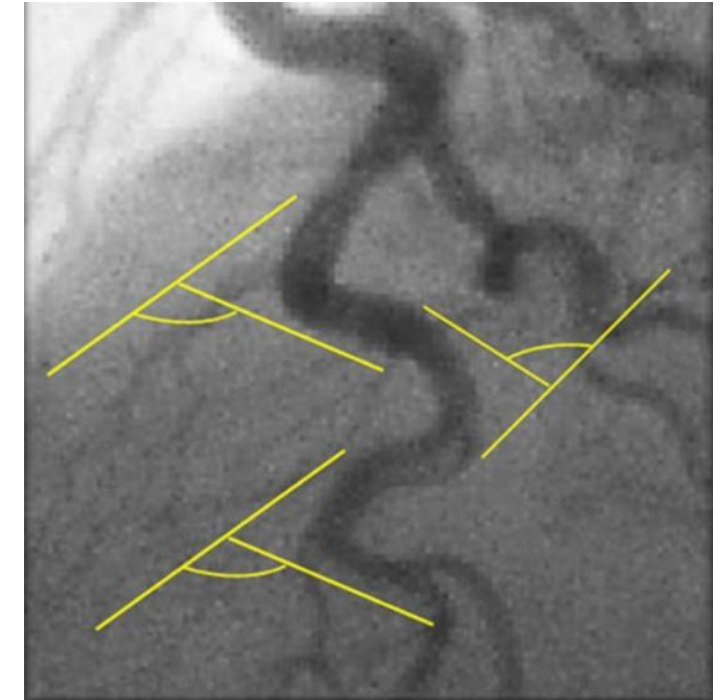
brachiocephalic artery

Coronary Tortuosity Classification

	None/mild	Moderate	Severe
Definition	<2 Bends to reach the target lesion	2 Bends of >75° or 1 bend >90° to reach the target lesion	2 Bends of >90° or 3 bends >75° to reach the target lesion
Example			

<https://www.jacc.org/doi/10.1016/j.jcin.2020.12.027>

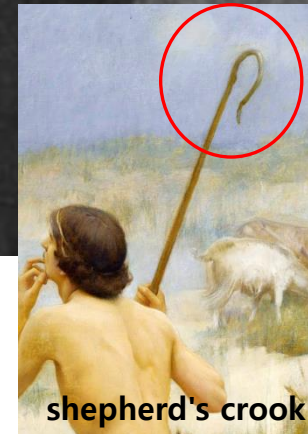
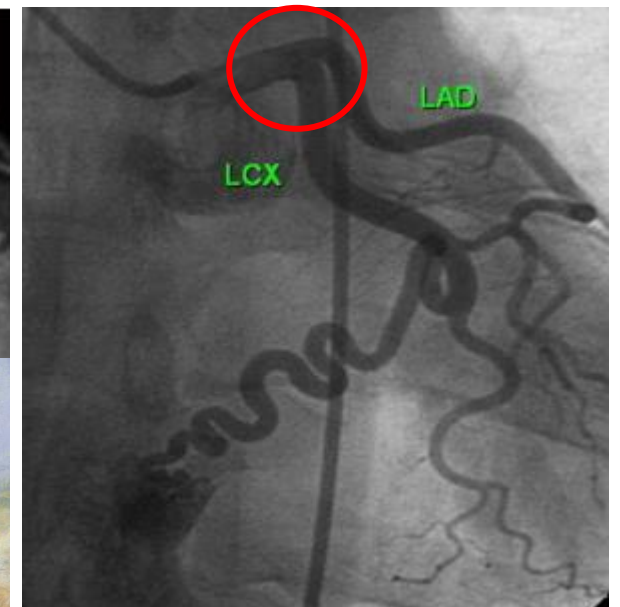
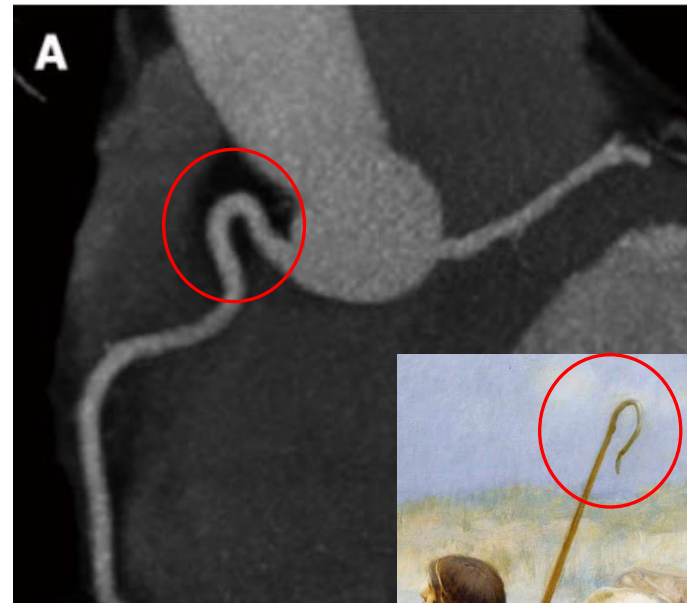
- The number of bends gives more difficult to pass the balloon or stent to reach the target lesion.
- A bend was defined as a segment with maximum angulation in the end-diastolic frame in an unforeshortened view.



Angle between artery consecutive curvatures

Tortuous lesion problem

1. Wiring
2. Delivering device
3. Risk for complication



shepherd's crook

How to approach coronary tortuosity

1. Get strong support

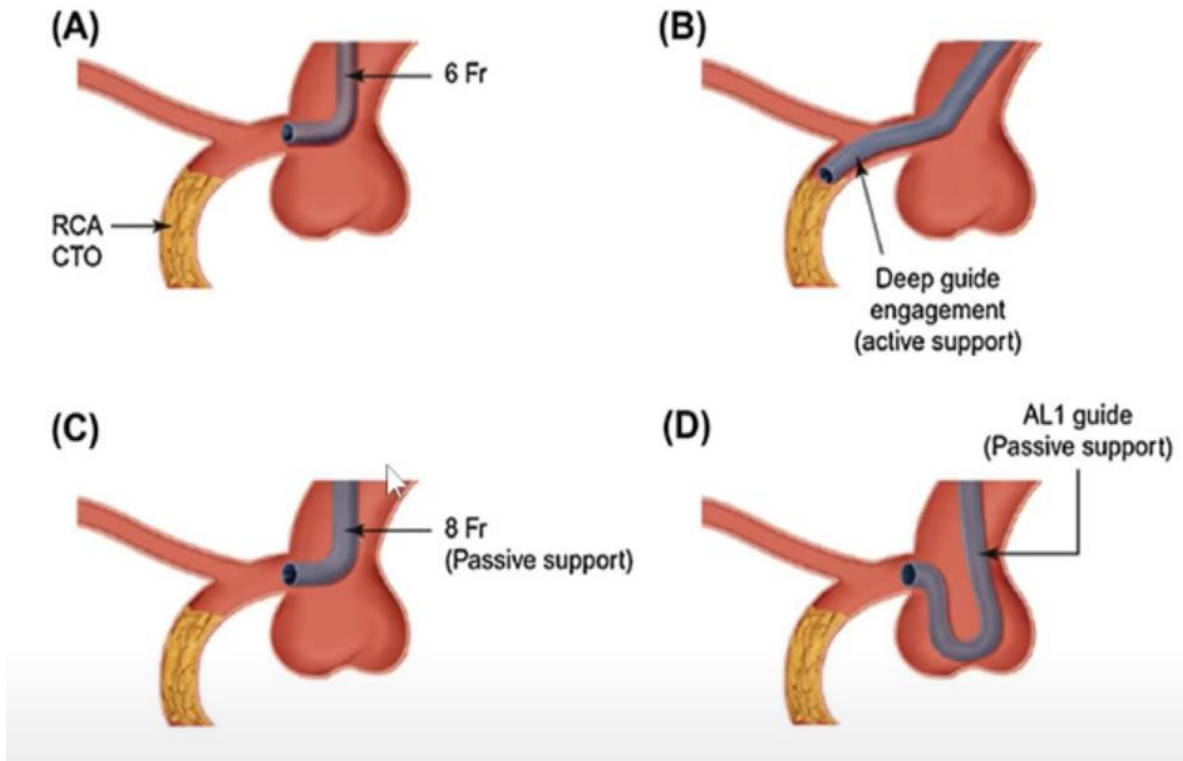
- Guiding catheter
- Micro catheter
- Anchoring

2. Choice appropriate wire

- SUOH 03
- Polymer jacket

1. Support

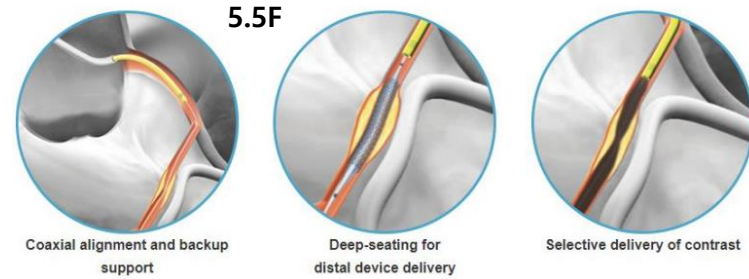
① Basics



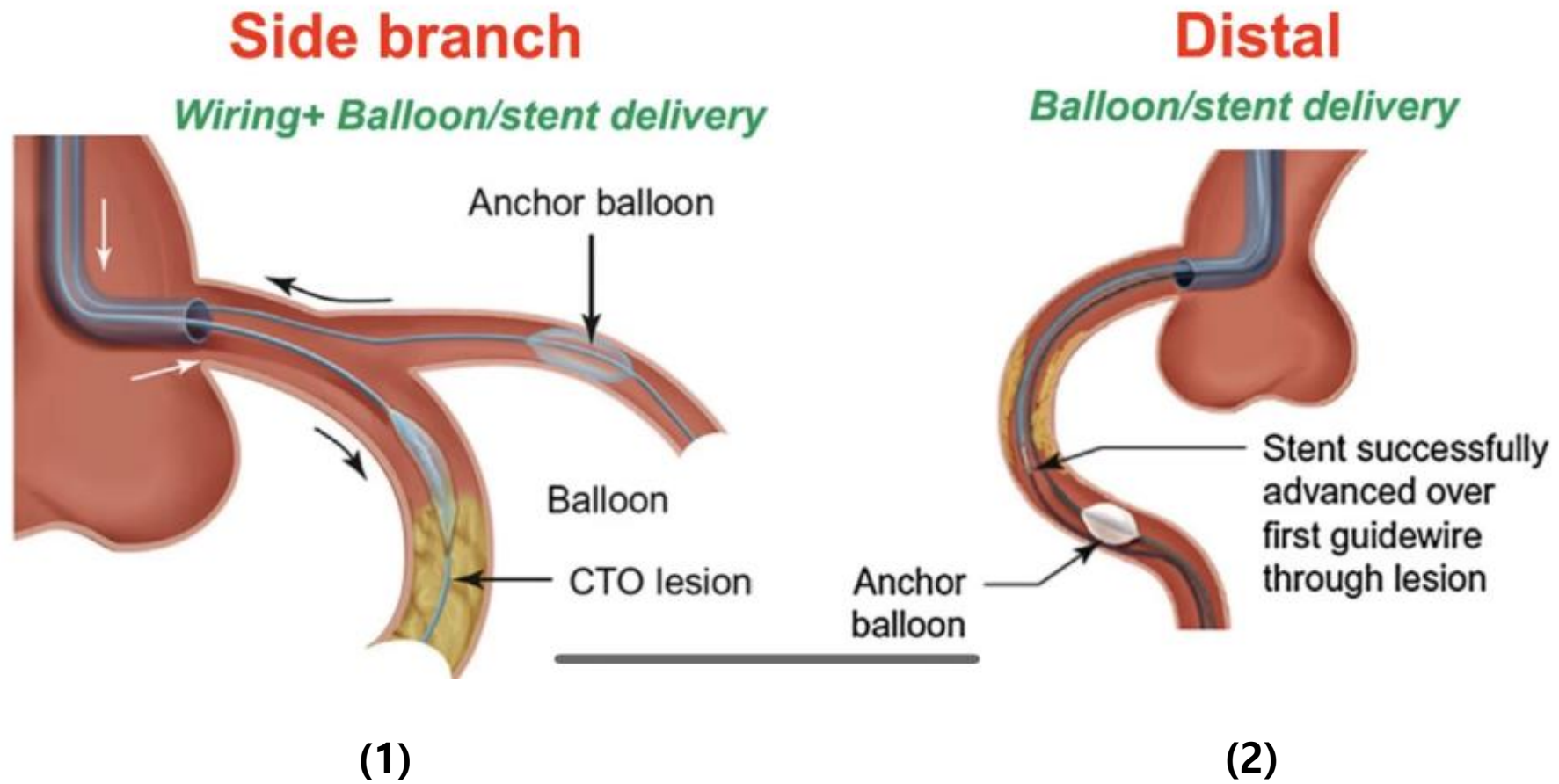
- a. Long sheath or Large size (7,8Fr)
- b. Support guiding catheter
 - AL1 for RCA -> very strong support **(D)**
 - EBU, XB for LM (EBU4 -> LCX)
- c. Deep engagement for RCA
 - > JR4 guiding catheter **(B)**
- d. Buddy wire technique
- e. Stiff wire for balloon/stent delivery (grand slam, sion blue ES)

② extension guide catheter

- Guidezilla / Guideliner



③ Anchoring



2. Tortuous vessel wiring

1. Use microcatheter

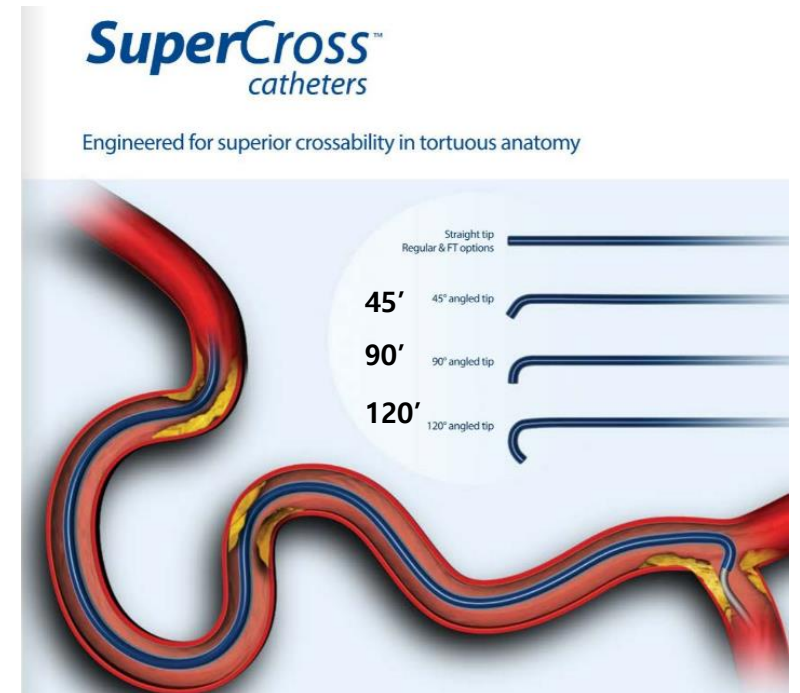
- Improve wire handling
- Allows changing guidewire tip
- Allows guidewire exchanges

(1) Flexible microcatheter (low profile -> go well tortuosity)

- Fine cross, Caravel , Turnpike LP

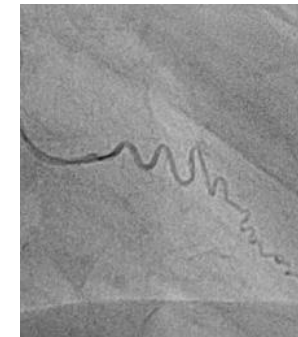
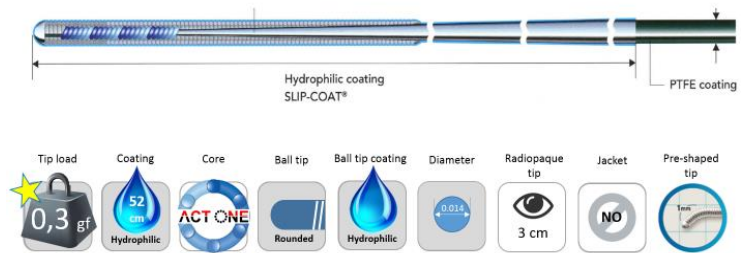
(2) Distal bend

- Super cross



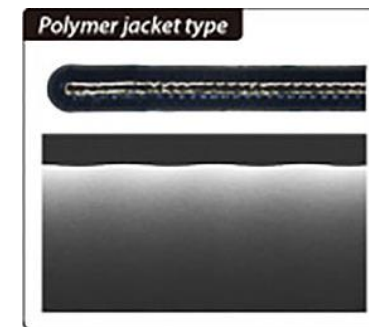
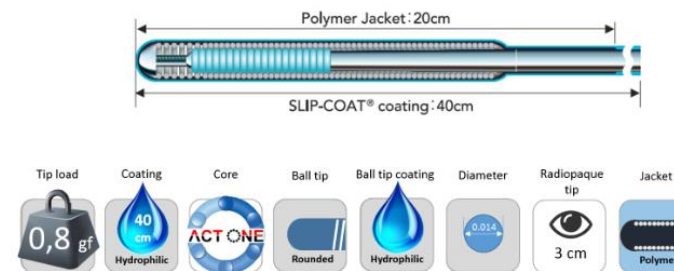
3. Guide wires

(1) Non – polymer jacket : **SUOH03** (0.3g, full hydrophilic coating)

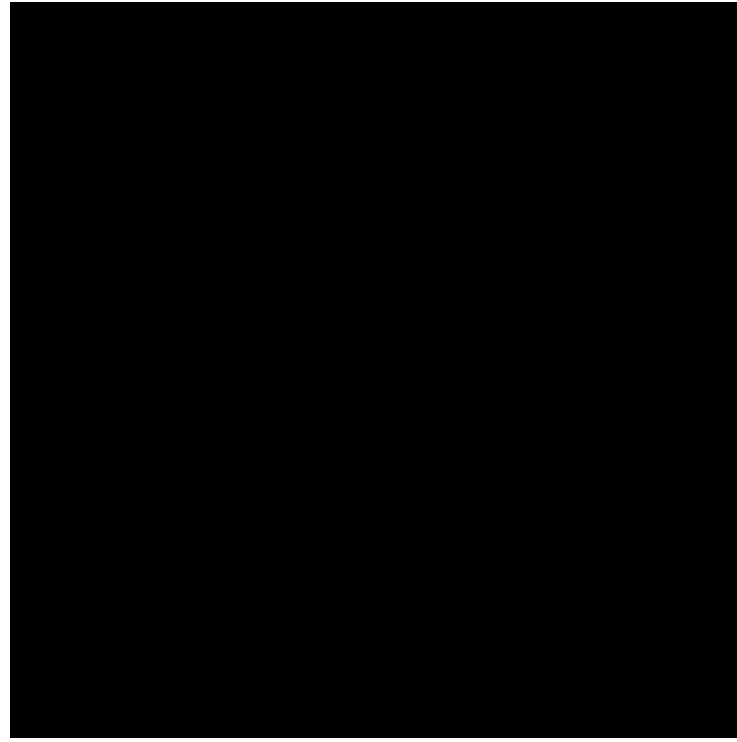
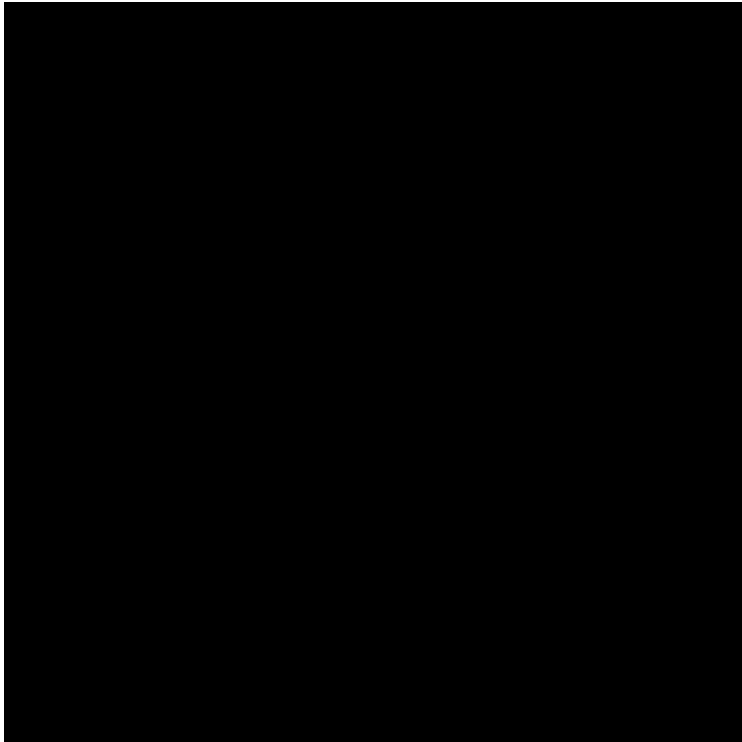


(2) **Polymer jacketed** : Fielder series , Sion black

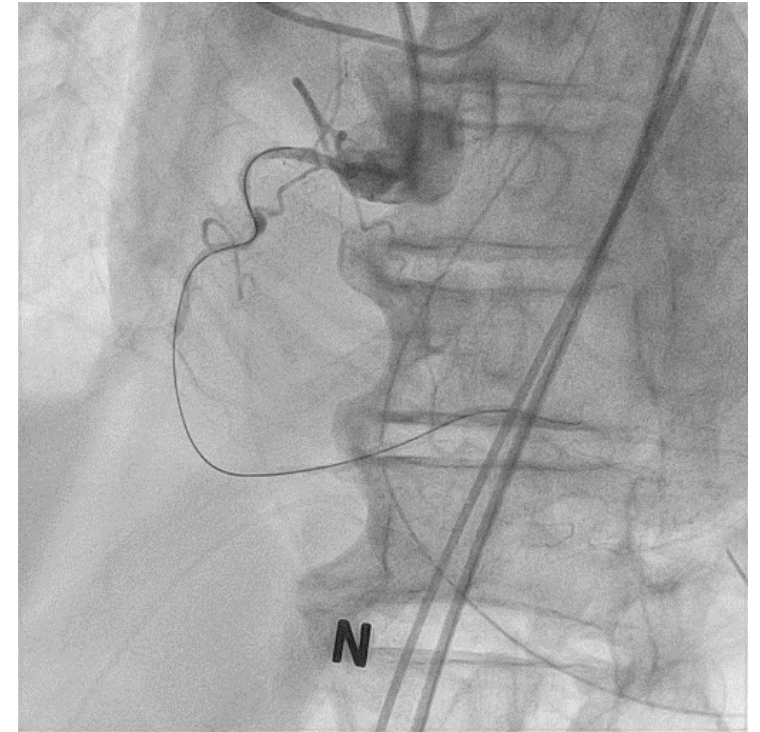
- Give good lubricity
- Smooth tracking through tortuosity



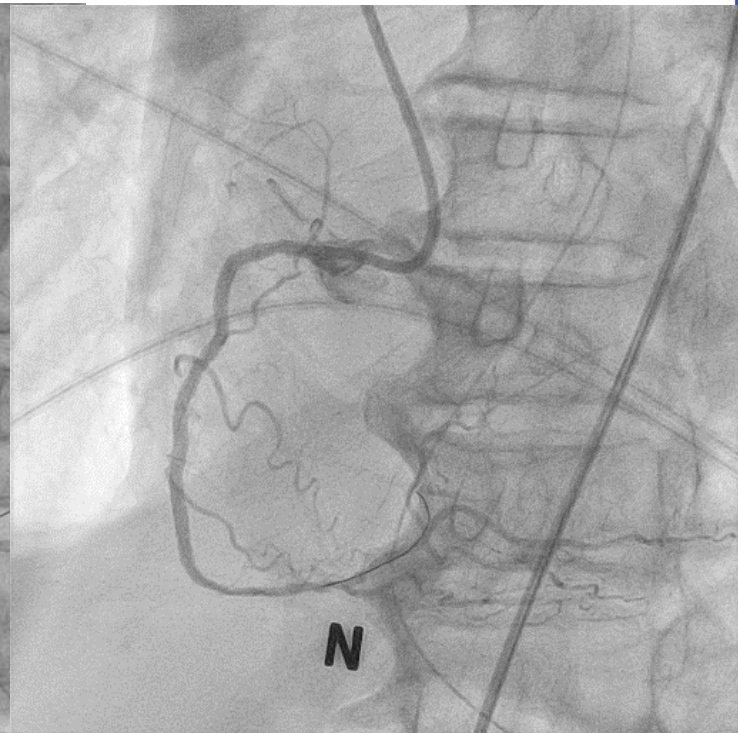
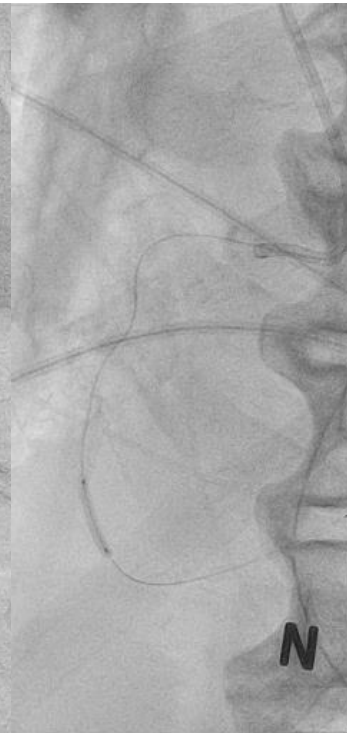
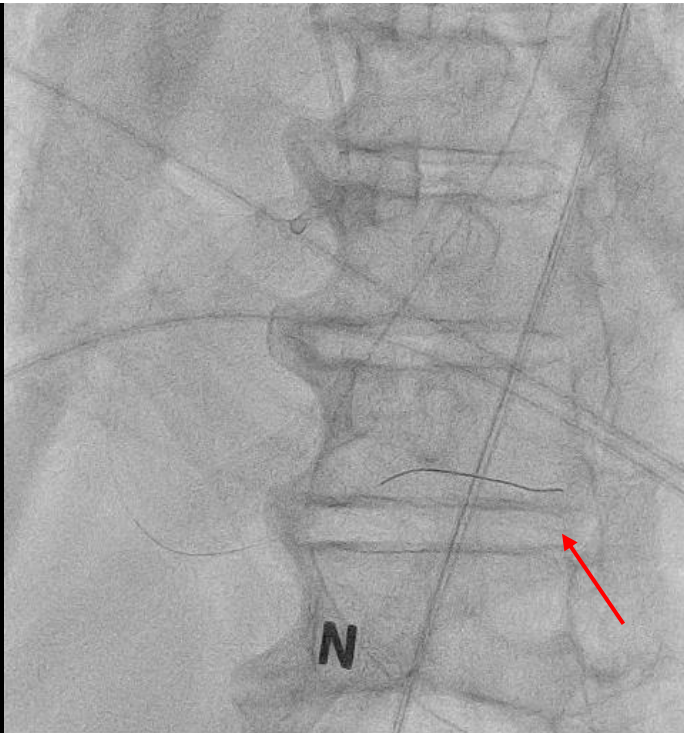
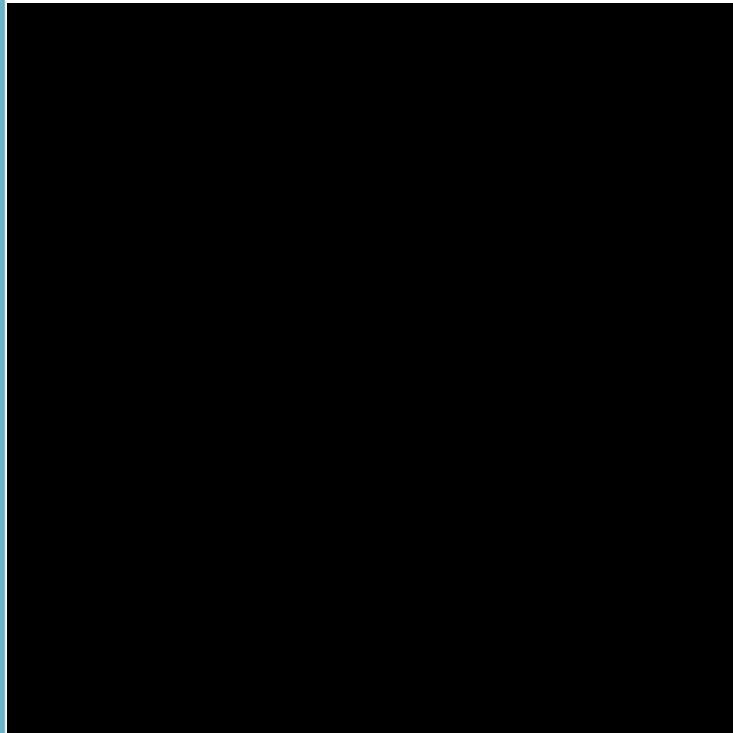
Case 1 (M/84, NSTEMI)



pRCA diffuse irregular 70% stenosis , moderate calcification
mRCA total occlusion from LAD



AL1 short tip 7Fr guiding catheter
Corsair pro & Fielder XT-A -> gaia next 1



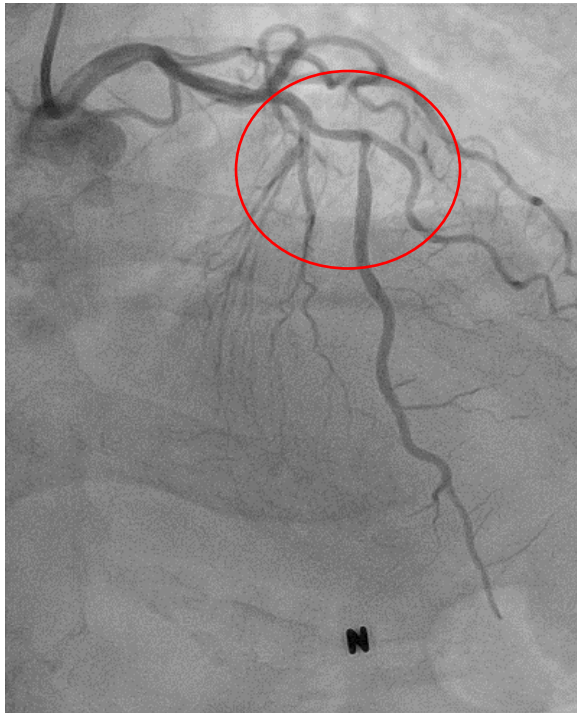
Sion blue ES -> accordion effect, no reflow + IABP

Wire pull back (sionblue ES)

Corsair pro, runthrough ballooning

Final angio

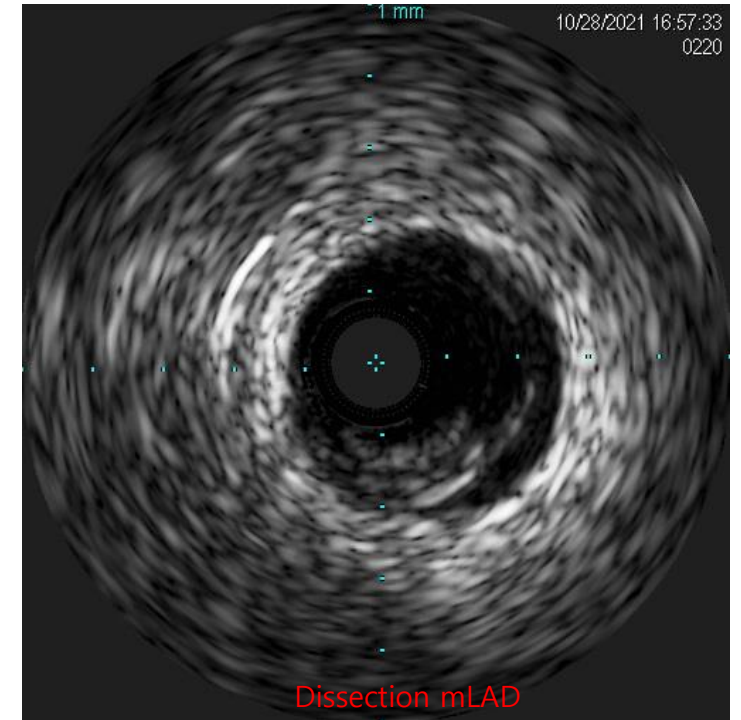
Case 2 (F/69, NSTEMI)



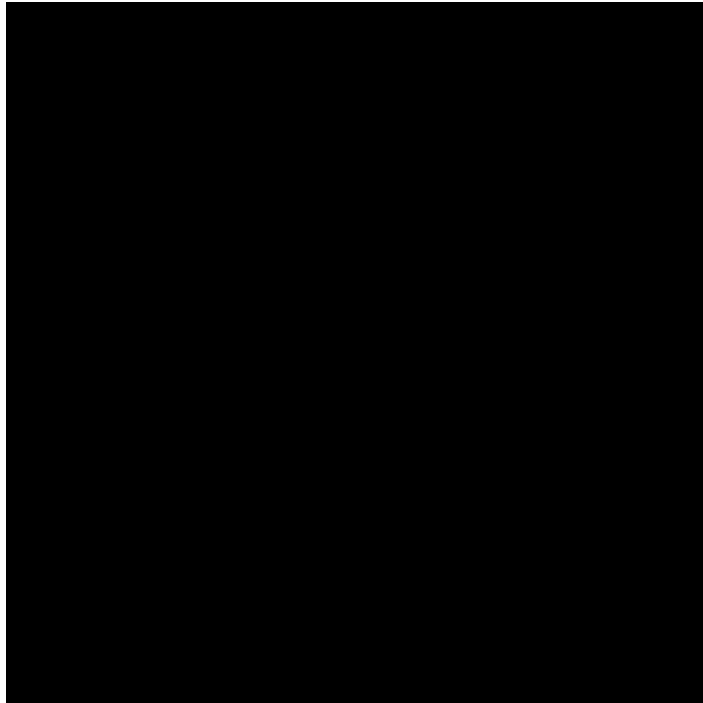
CAG : mLAD tubular up to 80% stenosis
G.C: JL4 7Fr / runthrough NS wire



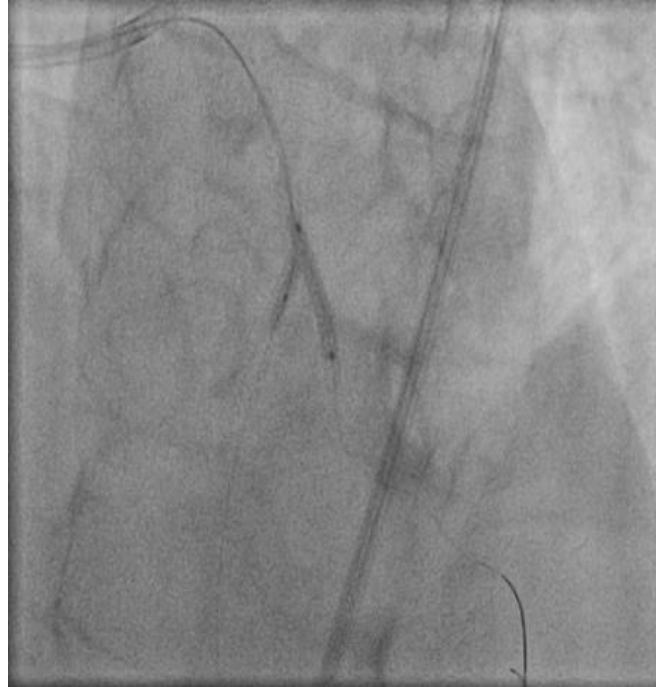
Post poba No reflow & compromised Dg



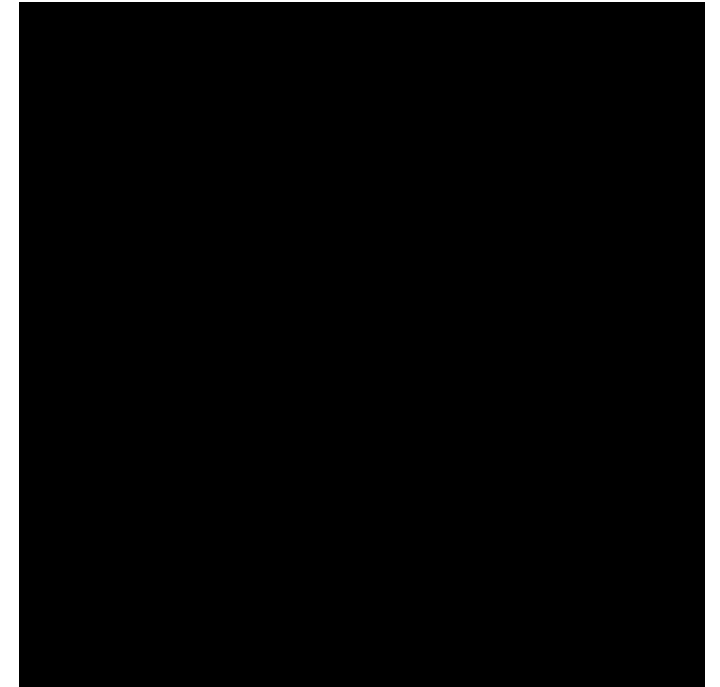
During stent positioning
-> chest pain(+)
-> IVUS



Post stenting compromised Dg
No visible distal flow



TAP technique



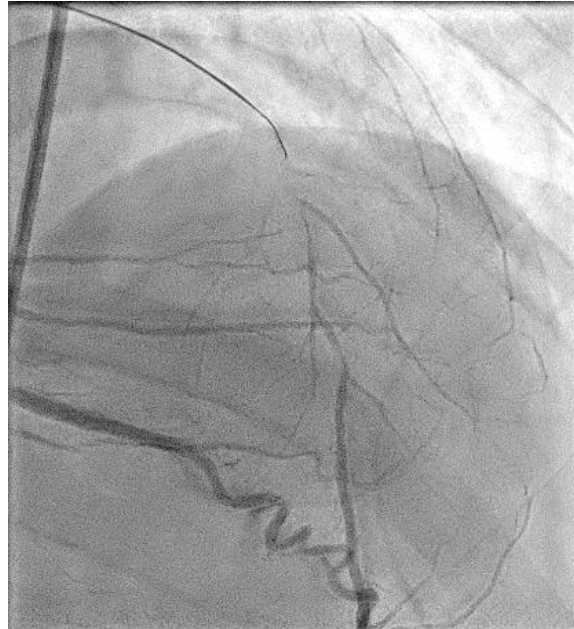
After 1 week f/u
m&dLAD/Dg residual dissection &
r/o intramural hematoma
-> no flow limitation

Case 3 (M/51, NSTEMI)

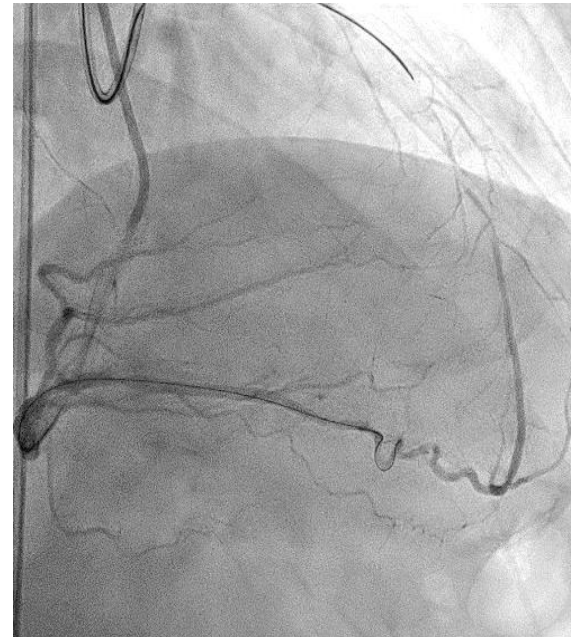


1st: Antegrade PCI

G/C : EBU 3.5 7Fr
G/W : Runthrough NS, Fielder XT-A,
 Gaia next1
 Corsair microcatheter

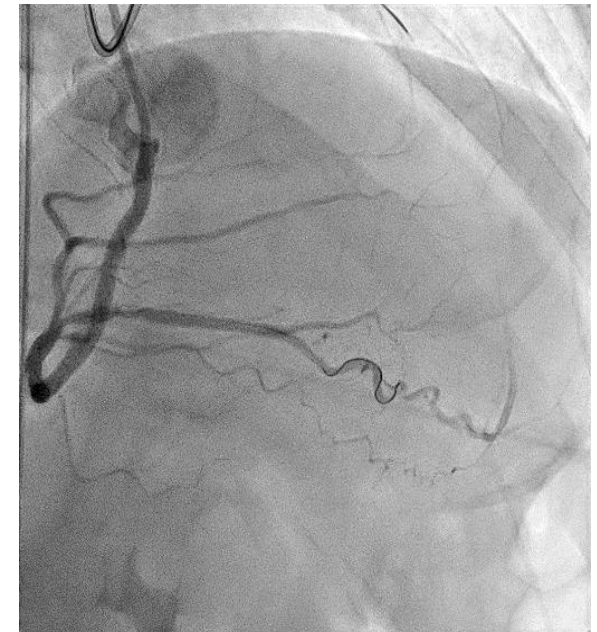


false lumen wiring



2nd: Retrograde approach
 – apical collateral

G/C : JR4 6Fr
G/W: SUOH03
 Caravel



G/W: neuro synchro wire
 (good Torque Control, Trackability)

120' supercross micro catheter
 -> **Fail**

Summary

Tortuous lesion

- 1. Get strong support**
- 2. Wire & microcatheter**
- 3. Reduce of complication**