DISLODGED STENT AND LOSS OF WIRE

- THE RETRIVAL

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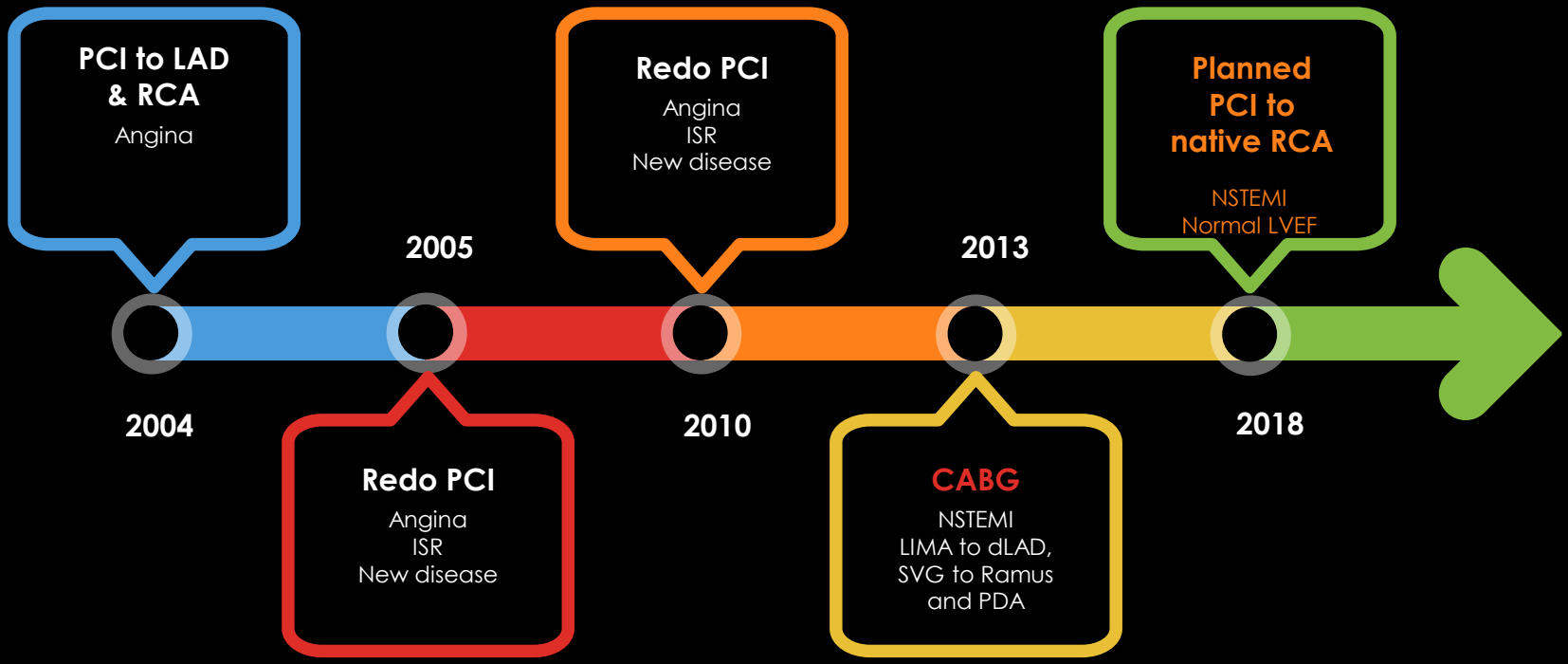
BACKGROUND

- Mr. NSC
- 60/M
- Hypertension, poorly controlled diabetes
- Ischemic heart disease
  - Multiple PCI (2004, 2005, 2010)
  - CABG 2013

ISCHEMIC HEART DISEASE



PRESENTATION

- Typical chest pain
- ECG: sinus bradycardia 54 beats per minute and old T-wave inversion over I, II, III, V4-6
- TnI elevated, peaked at 1070 ng/L (reference range ≤ 34.2)
- ECHO:
  - Normal chambers size
  - No regional wall motion abnormality
  - LVEF 56% (Simpson's)
  - Mild MR
  - No pericardial effusion

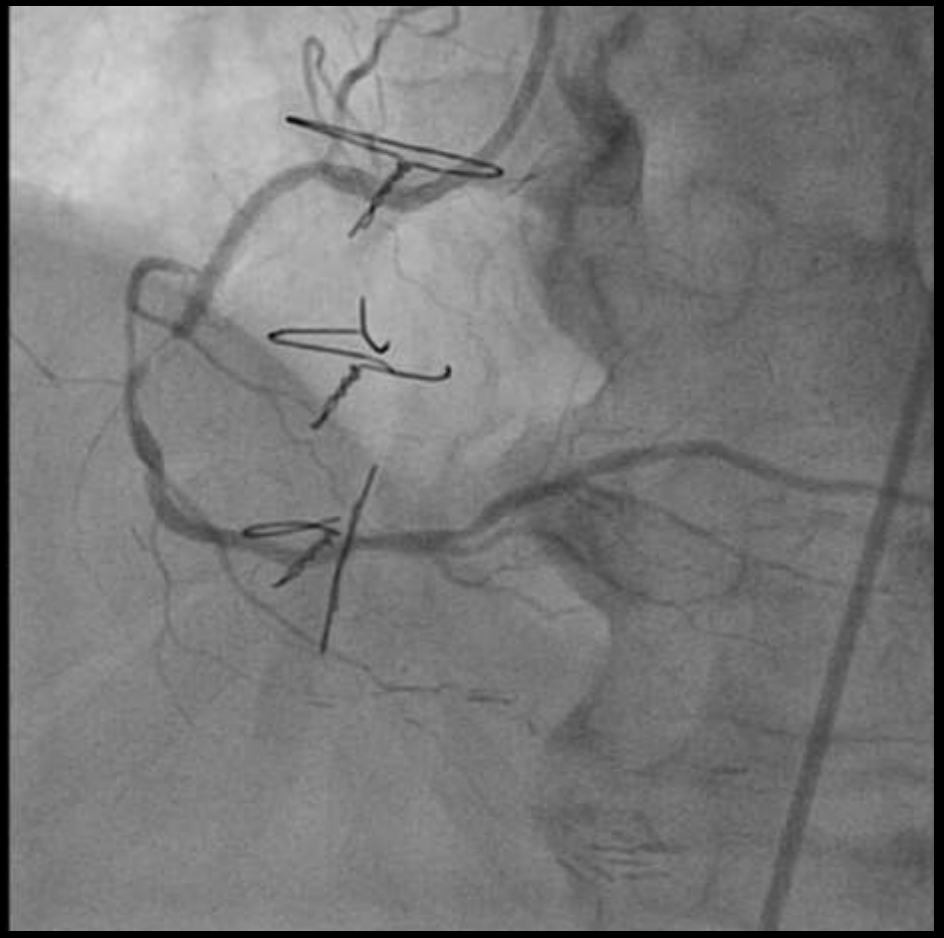
CORONARY ANGIOGRAM

- Left system static disease
- SVG to PDA patent
  - But does not supply PL

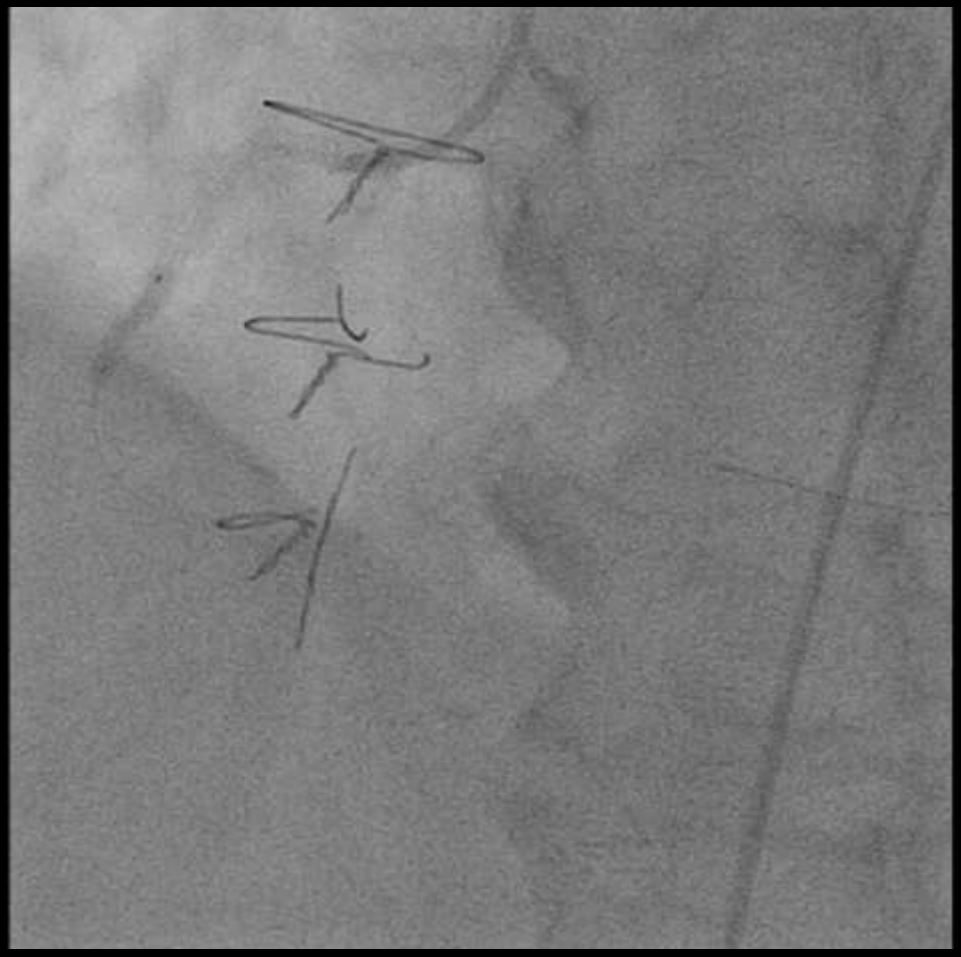
CORONARY ANGIOGRAM

Coronary angiogram angiogram

Critical mid-RCA in-stent restenosis



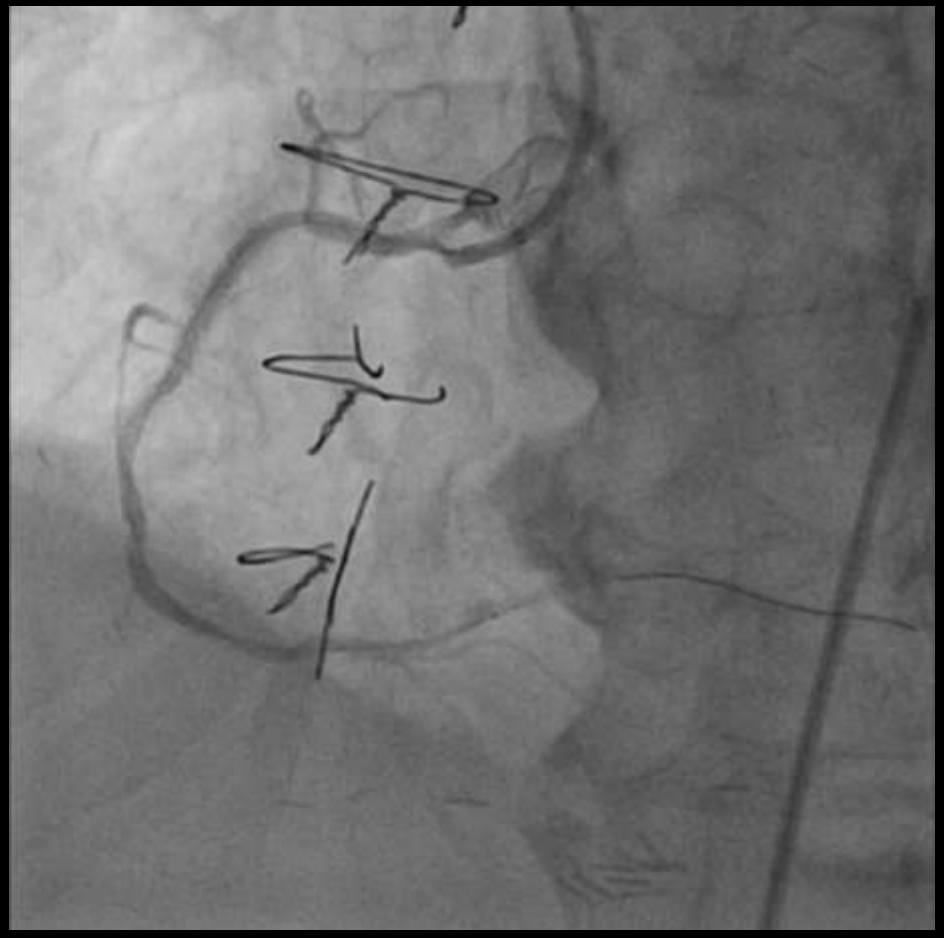
Pre-dilation



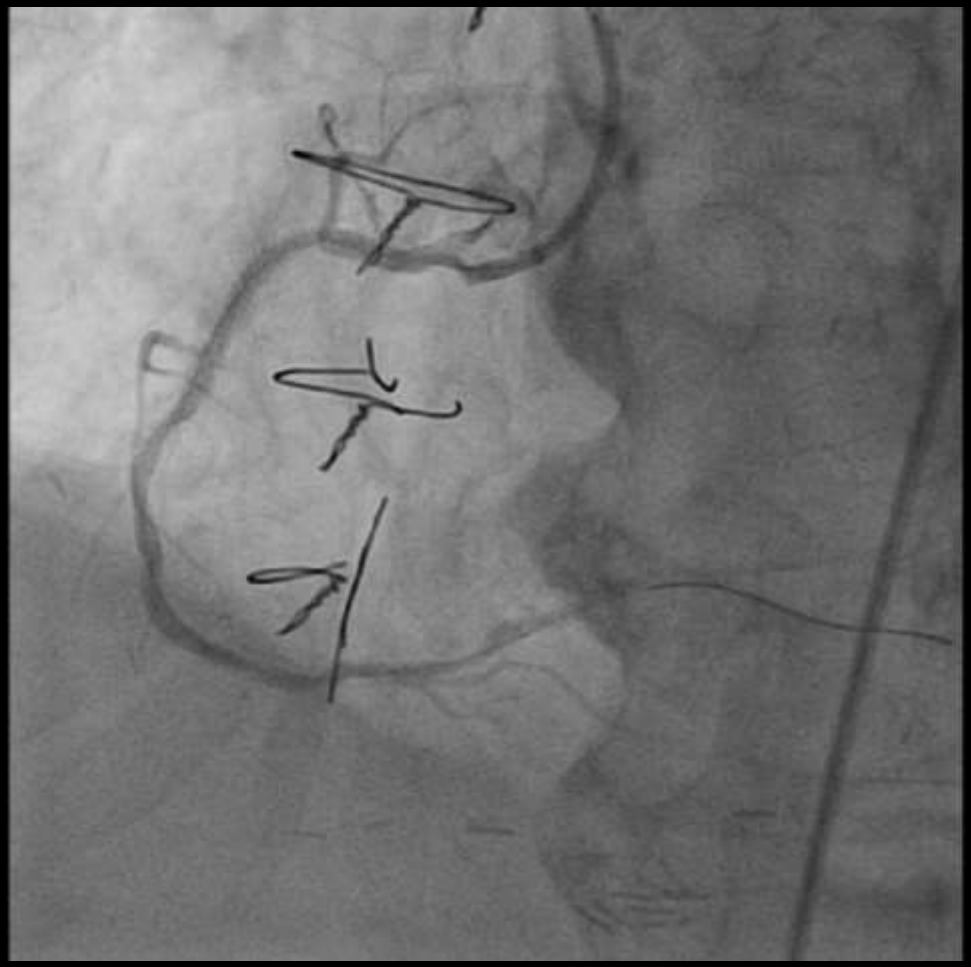
- mRCA ISR predilated with
  - Sapphire II 2.0/15, then
  - Sapphire II NC 2.75/15

After pre-dilation

- Not much recoil
- Decided to proceed with stenting



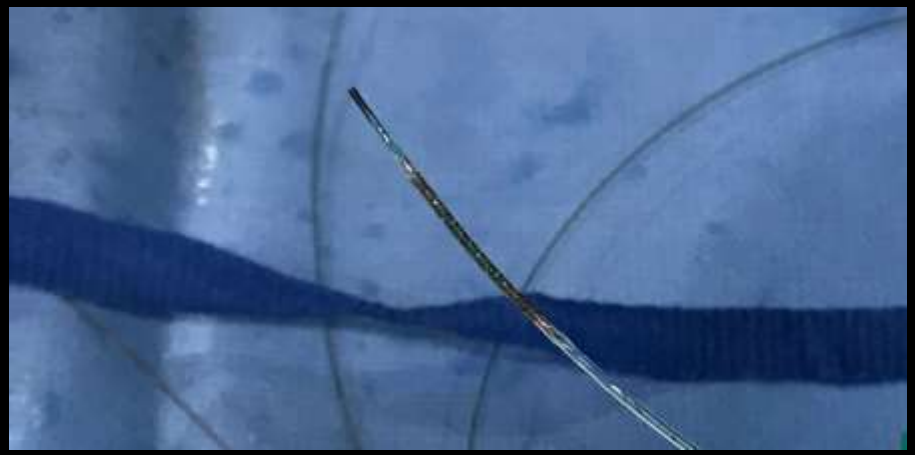
Failed stent delivery



- Failed to deliver Orsiro 3.0/40 stent despite with GuideLiner support

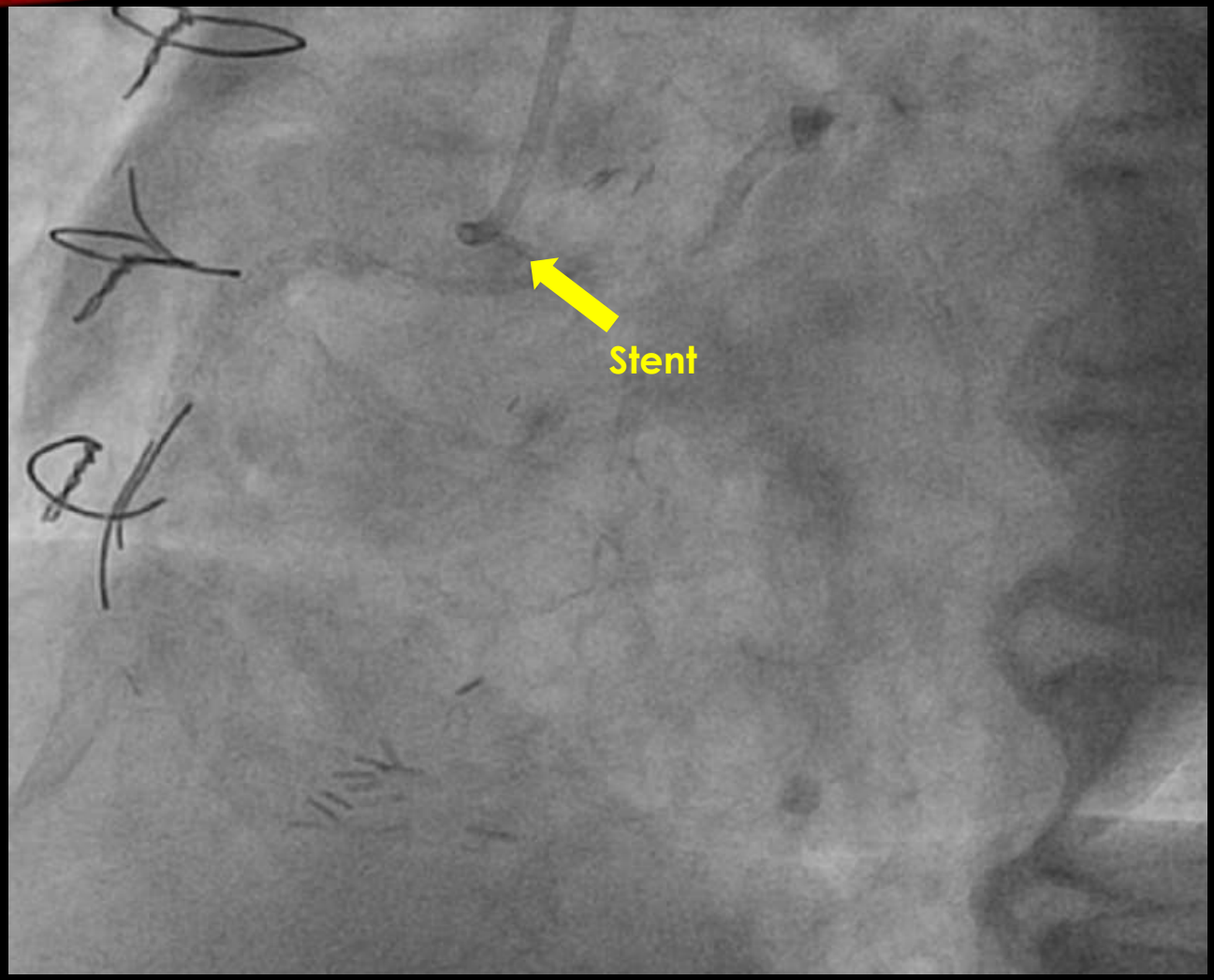
Dislodged stent and loss loss of wire

- Normal undeployed Orsiro stent



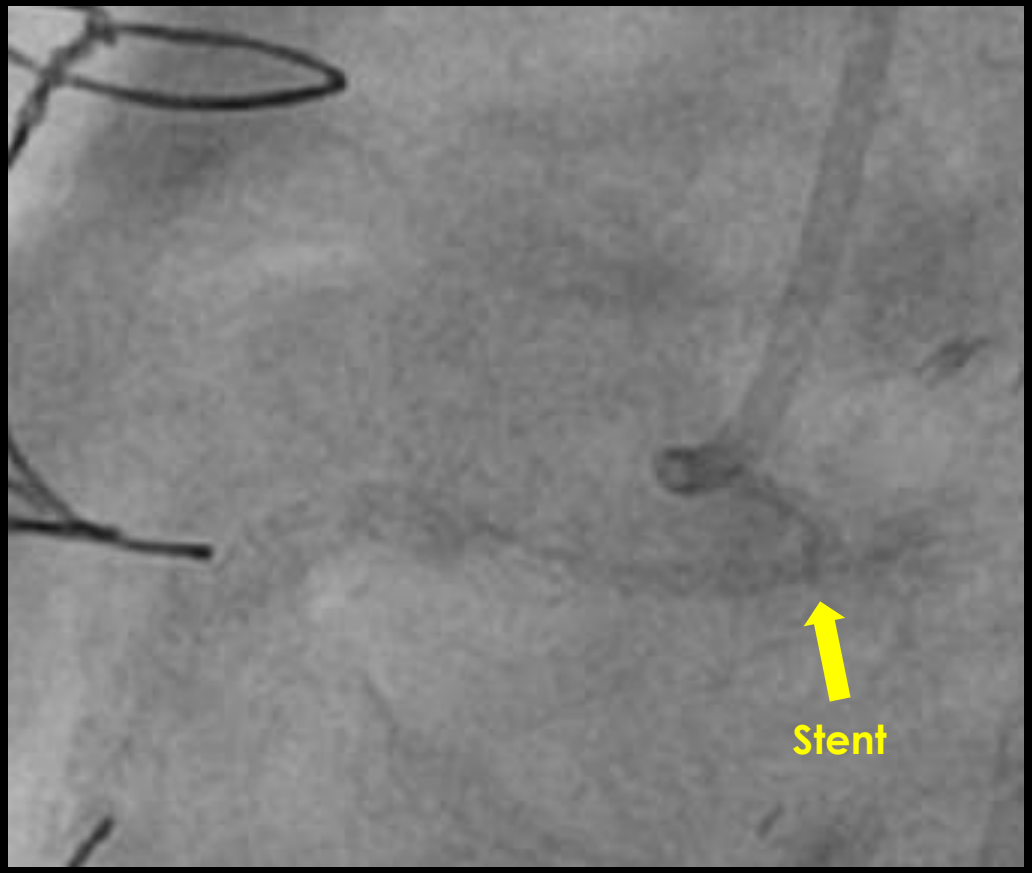
- Dislodged Orsiro stent

Dislodged stent and loss of wire



- Guiding catheter jumped out
- Wire lost
- Half in RCA, half in aorta

HALF A WORM IN THE APPLE



What to do?

- Retrieve?
  - How stuck is the stent?
  - If loss of grip during retrieval, may result in embolism
- Leave it as it is?
  - Stent thrombosis
- Crush?
  - This will leave half the stent in the aorta, which may fracture
  - May be difficult to deliver balloon
- Deploy the stent?
  - Next to impossible due to loss of wire and balloon

Objectives

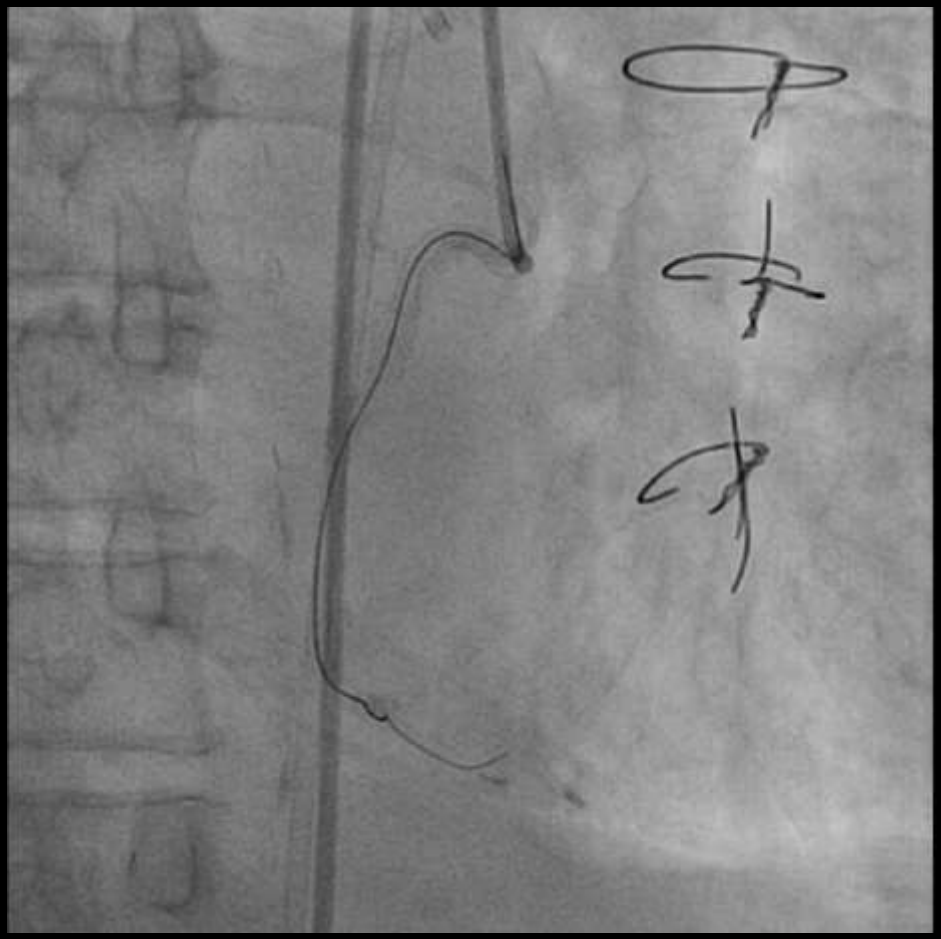
- Avoid
  - Emoblisation
  - Stent thrombosis
  - Occlusion of RCA

- Decided to
  - Attempt retrieval BUT first need to secure the stent

Securing the stent

- Switched to JR4 6Fr
- Re-wired with Fielder XT-R
  - Through the dislodged stent by feel

Securing the stent



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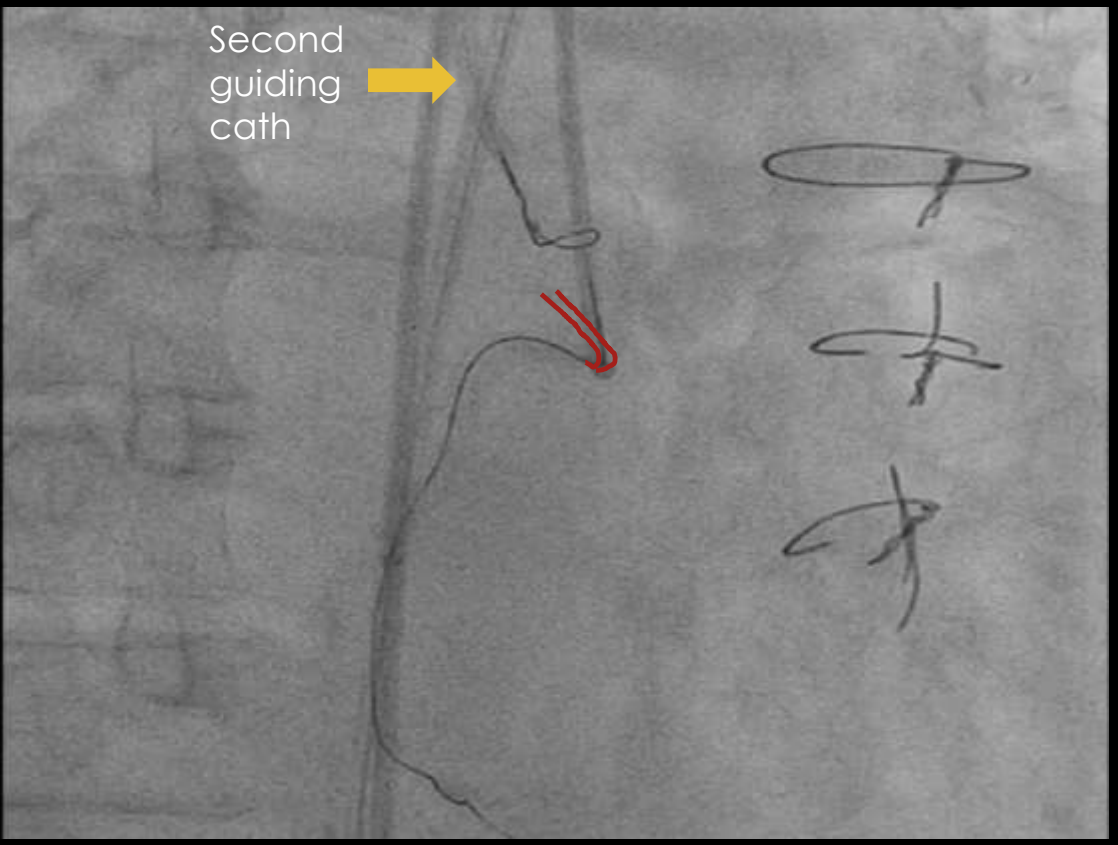
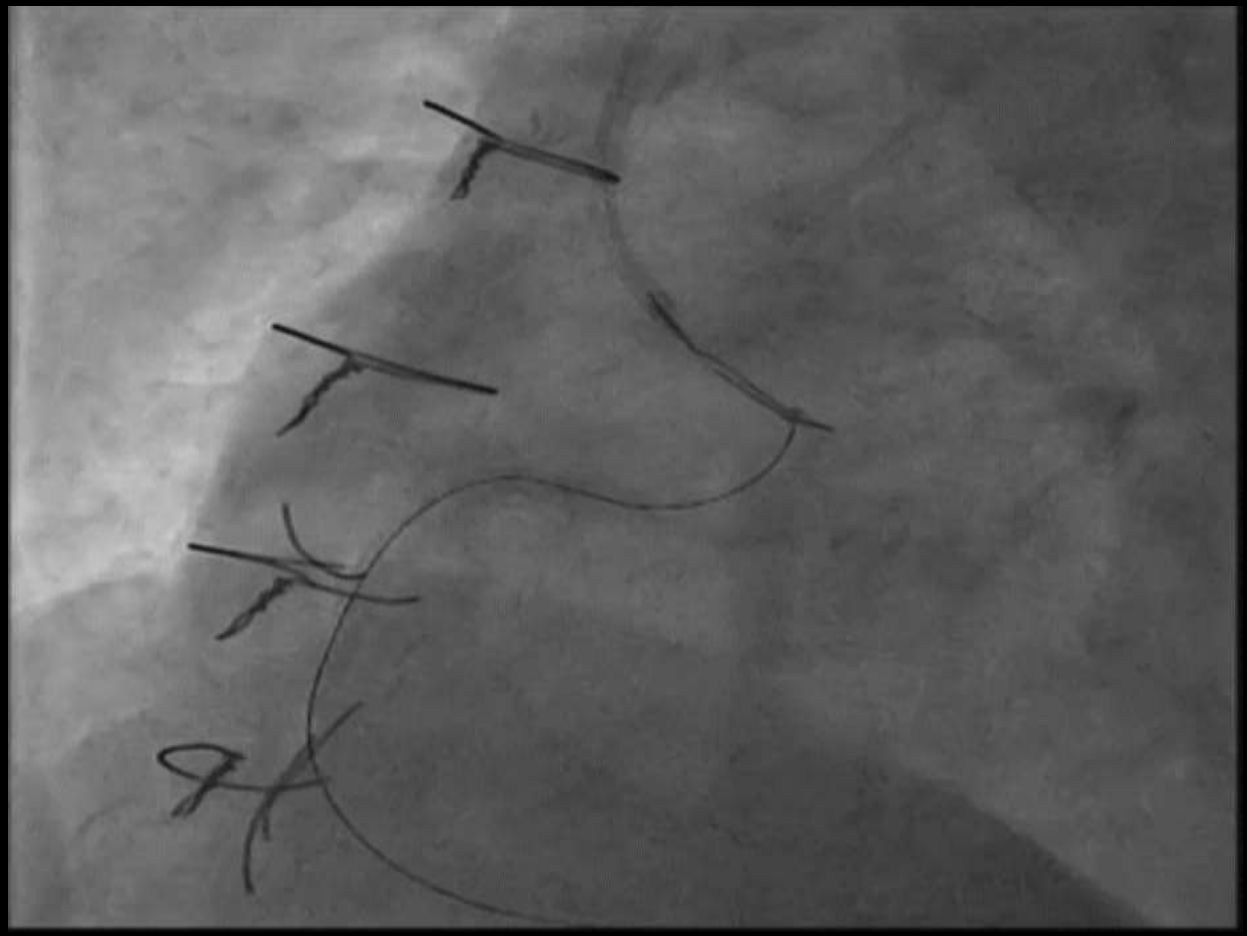
Snaring



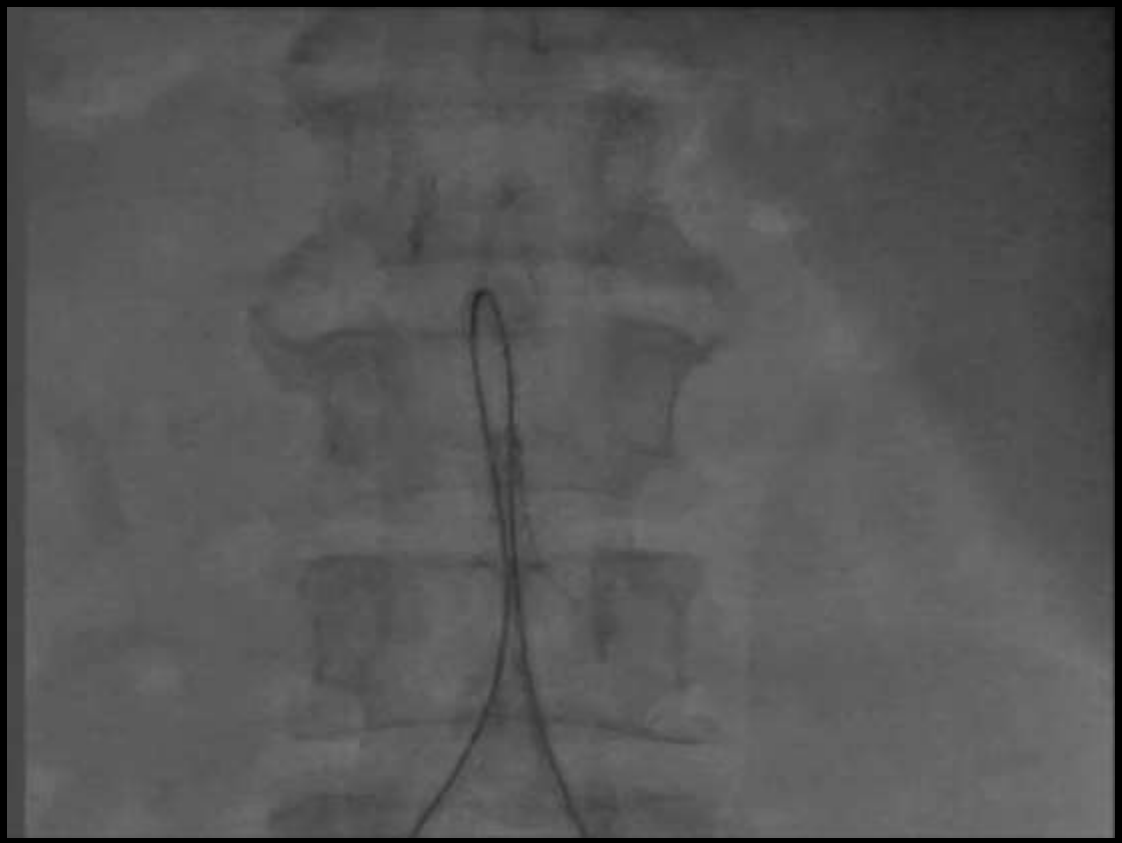
- Left femoral sheath 8Fr
- Guiding catheter JR4 7F
- Amplaz Goose Neck Snare Kit F4/120 cm with GuideLiner support

SNARING



- Dislodged stent with wire, GuideLiner, snare and 7Fr JR4 GC all removed via left femoral.

RETRIEVING THE INITIAL GC

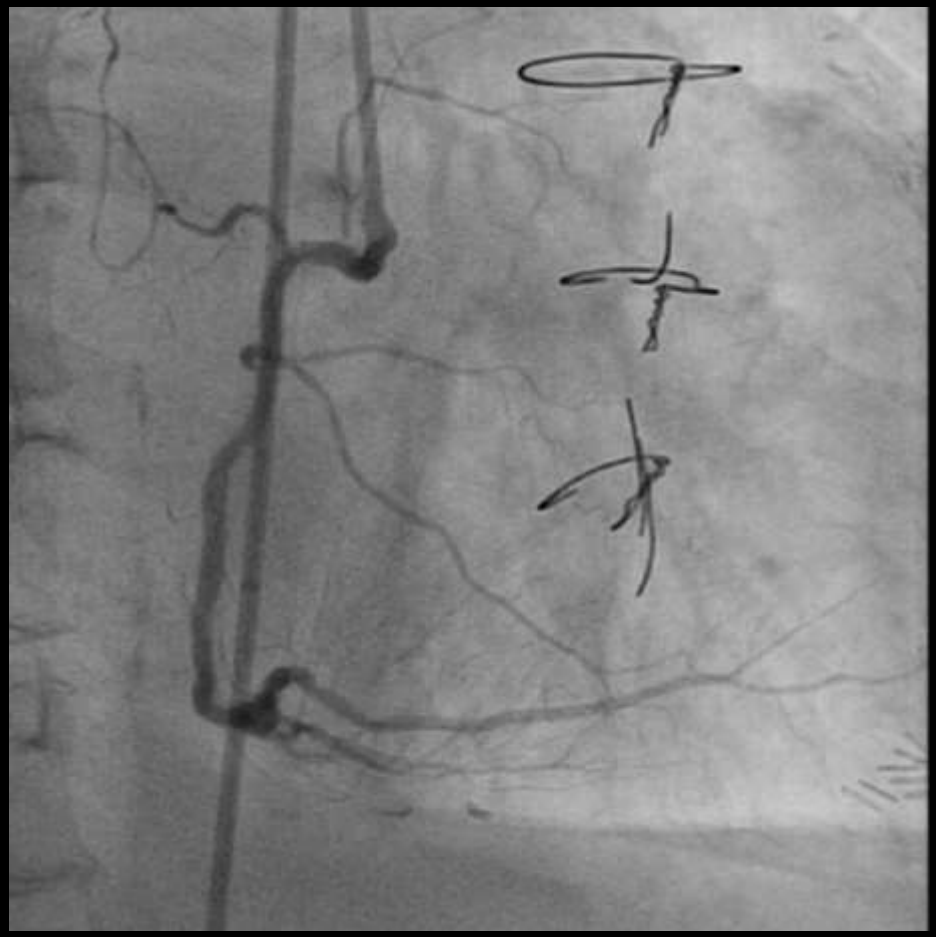


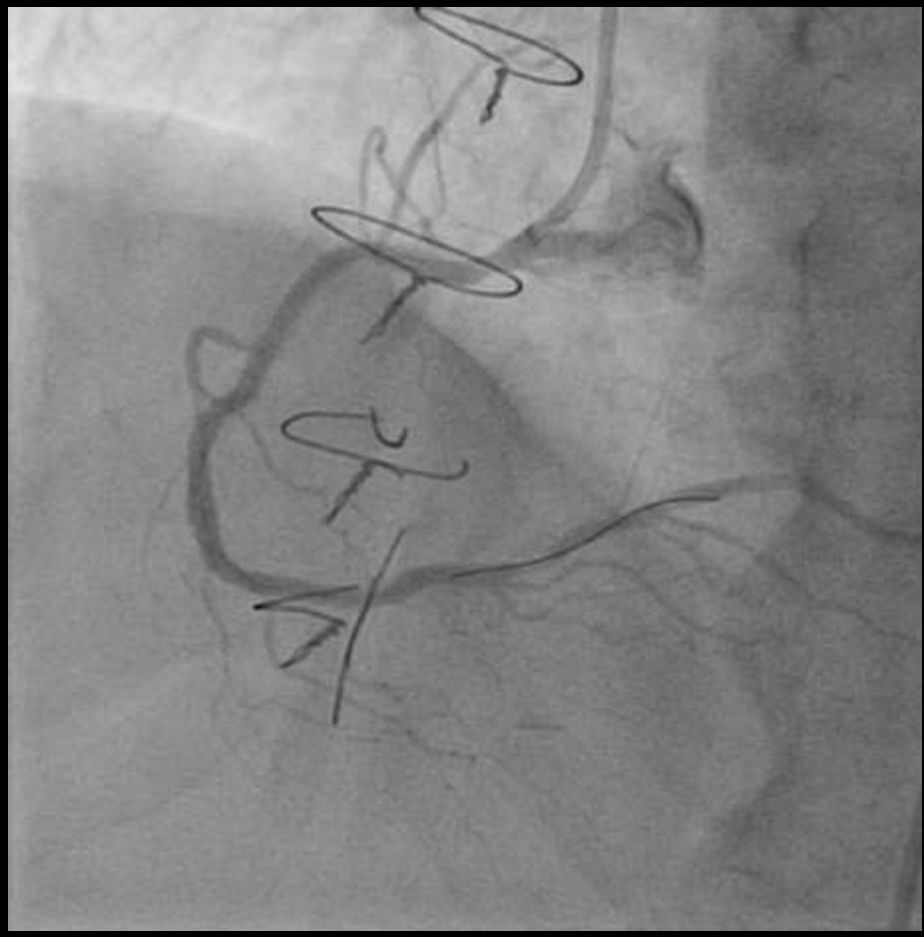
- Initial JR4 6Fr was doubled up during snaring
- Straightened with green wire and pulled out carefully to avoid kinking
- Retrieved via right femoral artery

PCI to RCA

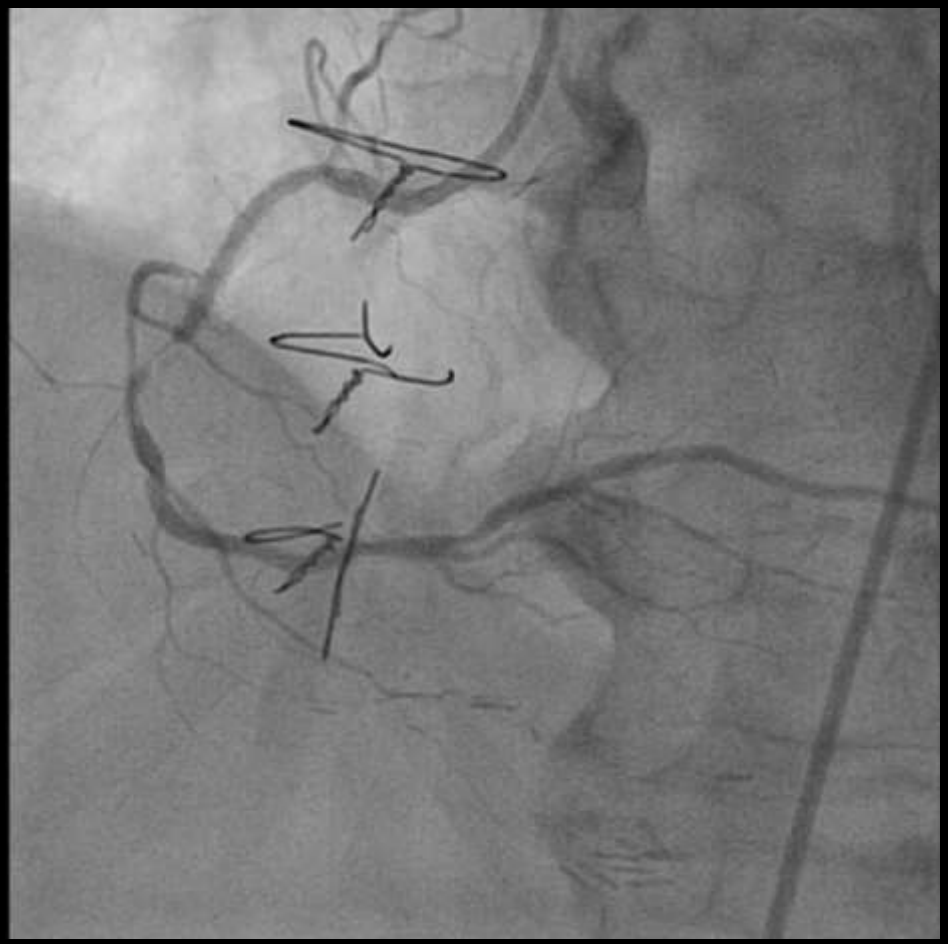
- RCA was then reengaged and lesions further pre-dilated
- dRCA was stented with Orsiro 2.25/26
- DEB IN.pact Falcon 3.0/40 to old RCA stents after further ballooning

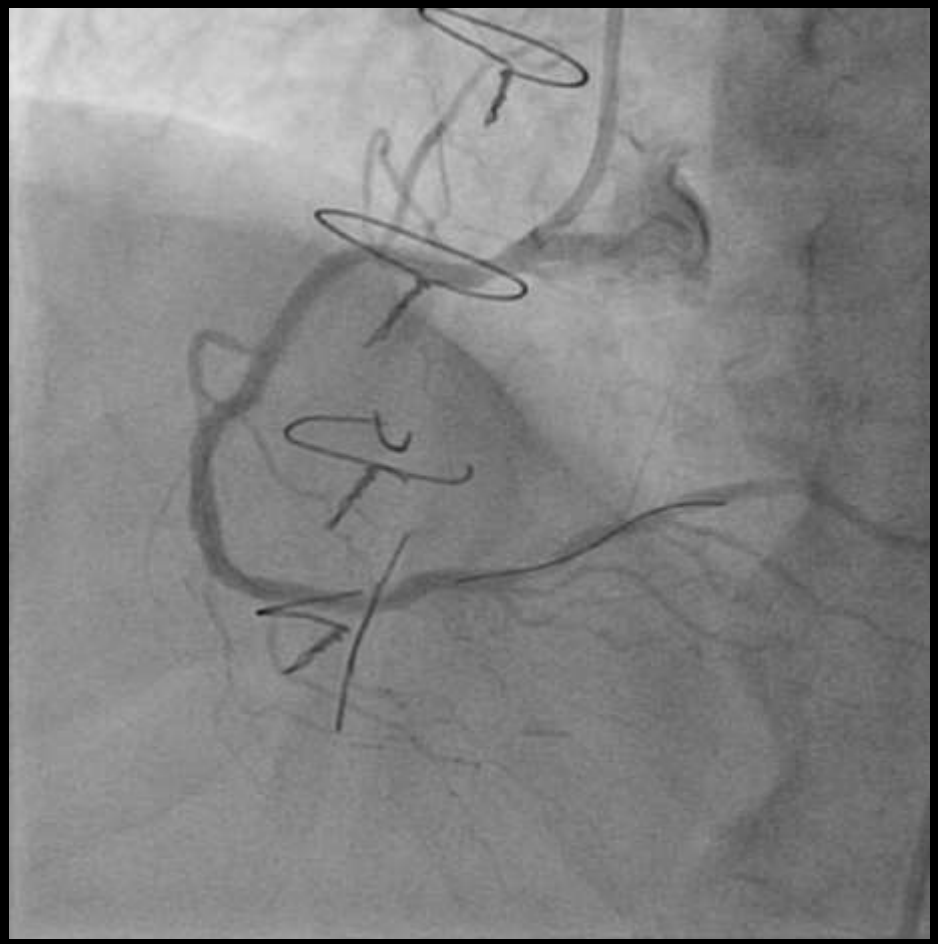
Final angiogram





Before and after





Discussion

Stent dislodgement

- Stent dislodgement or embolization is rare
- But consequence may be serious
  - Stent/coronary artery thrombosis
    - Myocardial infarction, may need urgent CABG
    - Death
  - Embolisation to other organ/arteries
    - E.g. renal or splenic infarct

Risk factors

Anatomical

- Calcification
- Tortuosity
- Angulated
- Long diffuse disease

Technical

- Inadequate preparation of lesion
- Forceful

options

Retrieval

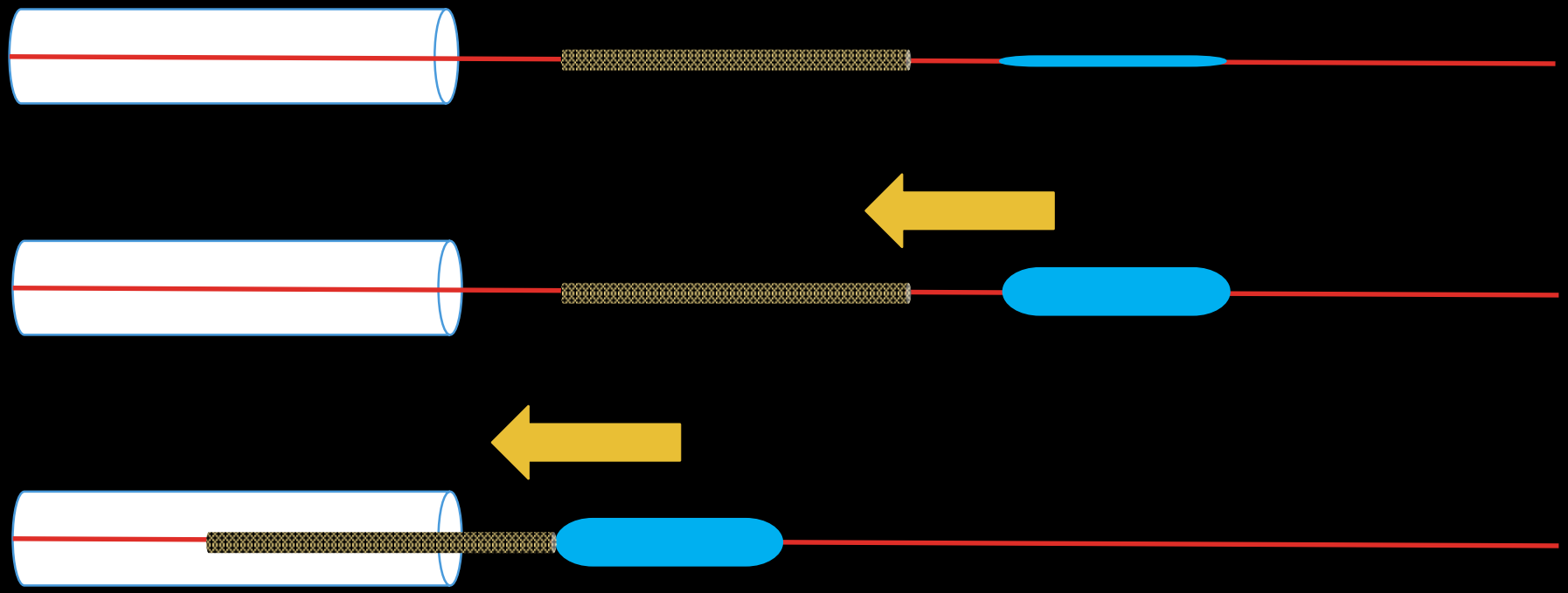
- If the guidewire is distal to stent

1. Partial deployment + retrieval
   - Stent balloon
2. Small balloon inflation retrieval
3. Double-wire retrieval
4. Loop snare retrieval

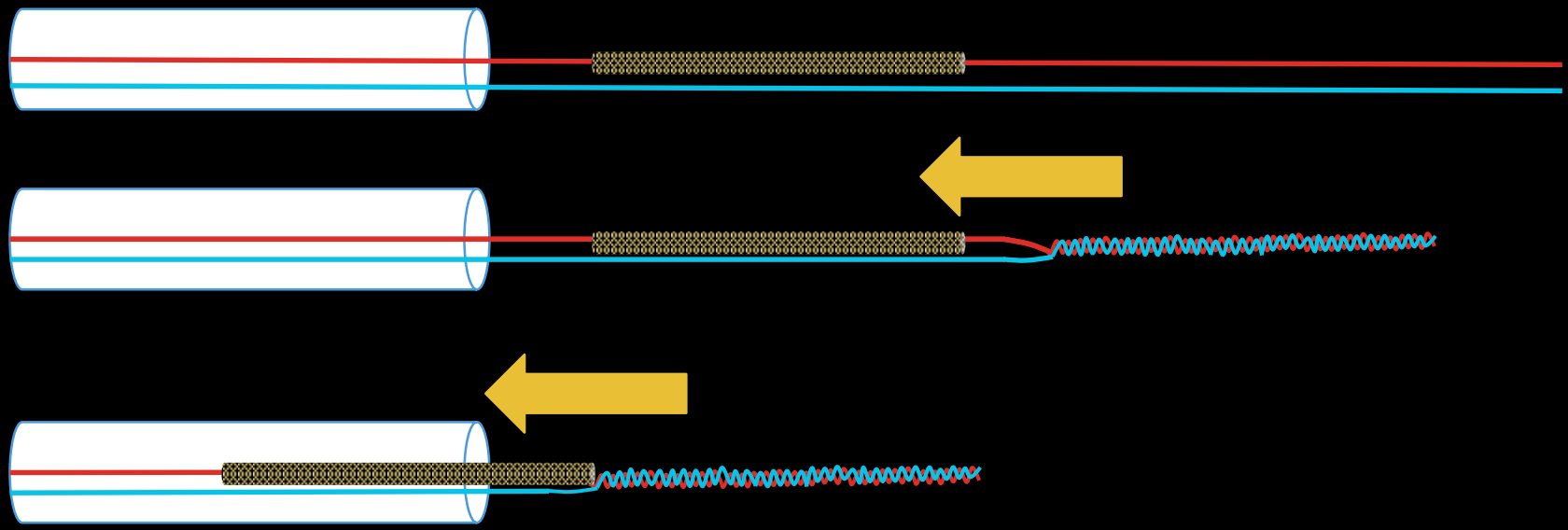
Deployment

1. Deploy
2. Crush

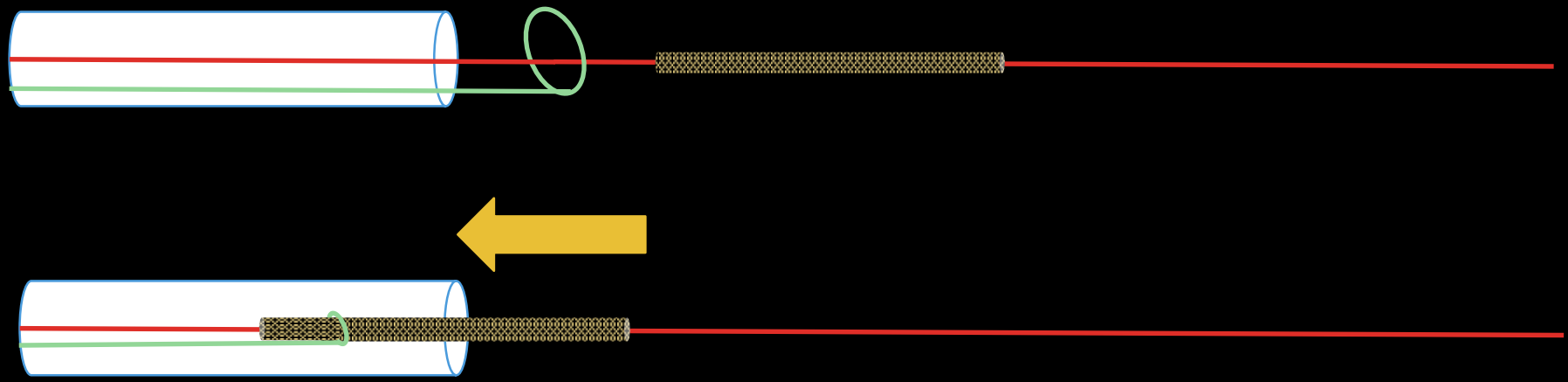
Small balloon inflation inflation



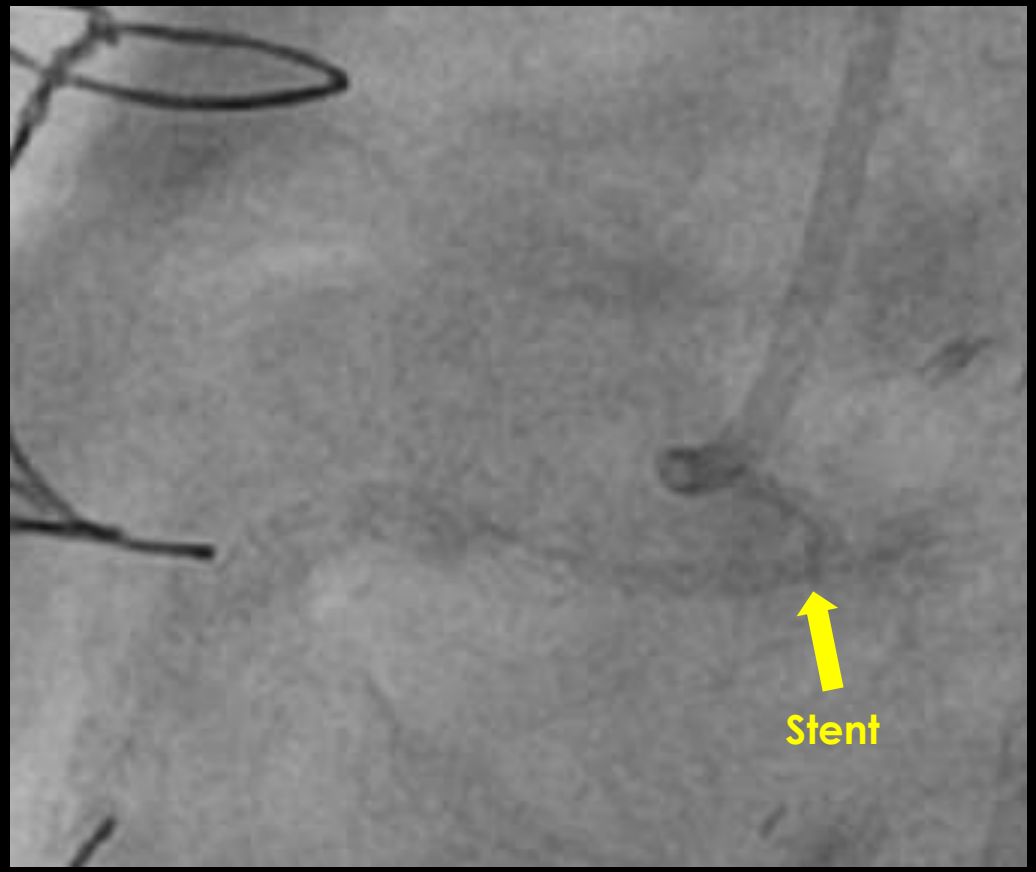
Double-wire



Loop snare



OUR CASE



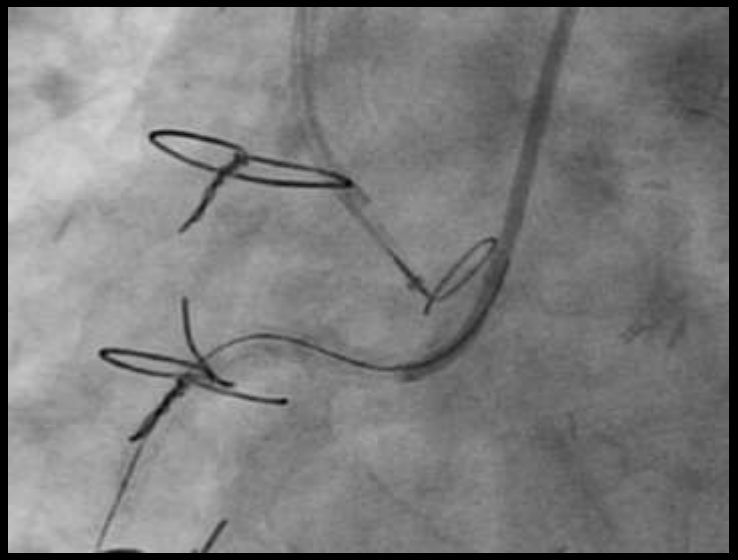
- Difficulty
  - No wire
  - Half the stent in the aorta
- Not suitable for
  - Direct retrieval
    - Risk of embolization
  - Crushing/deployment

Our approach

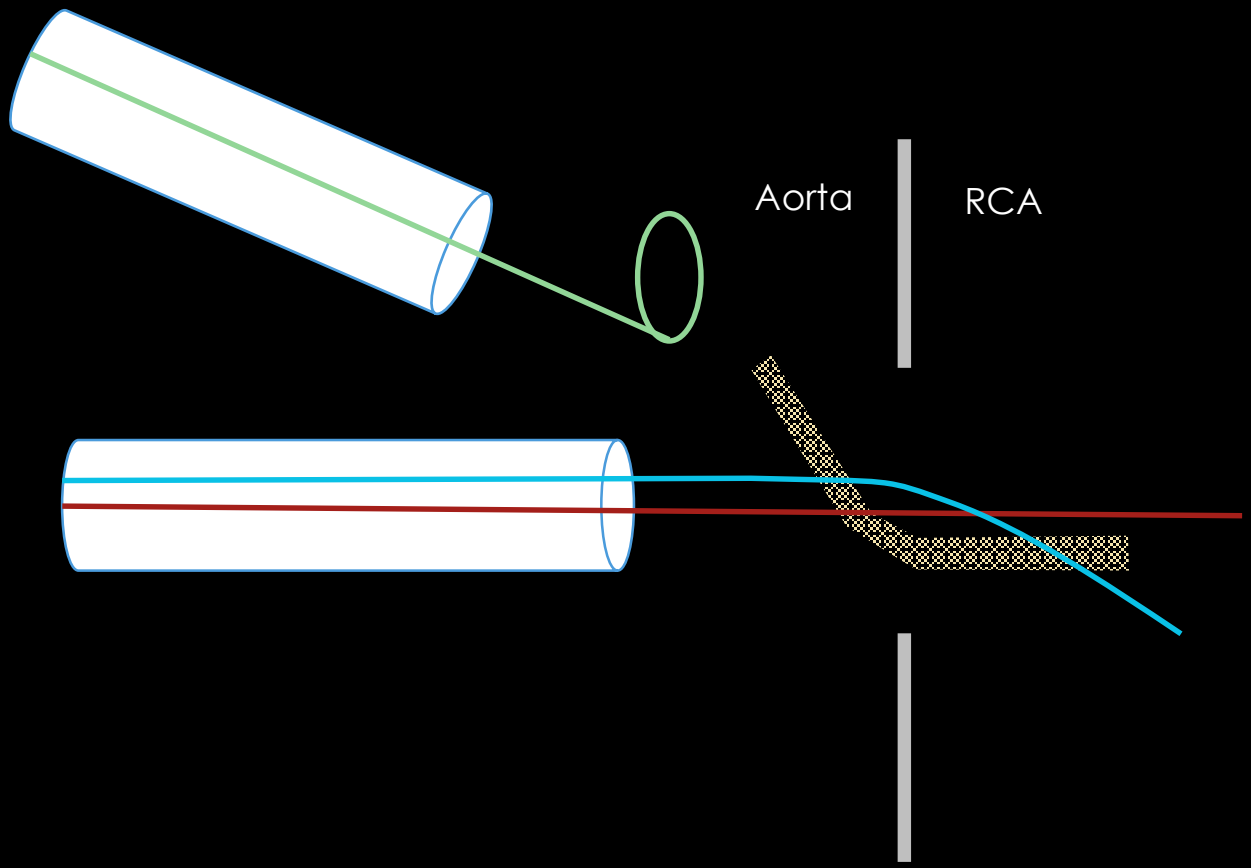
- Two-step, two-guiding catheter loop snare retrieval

- First step – rewire
  - Reduces risk of embolization

- Second step – second guiding for snaring
  - Increase manoeuvrability

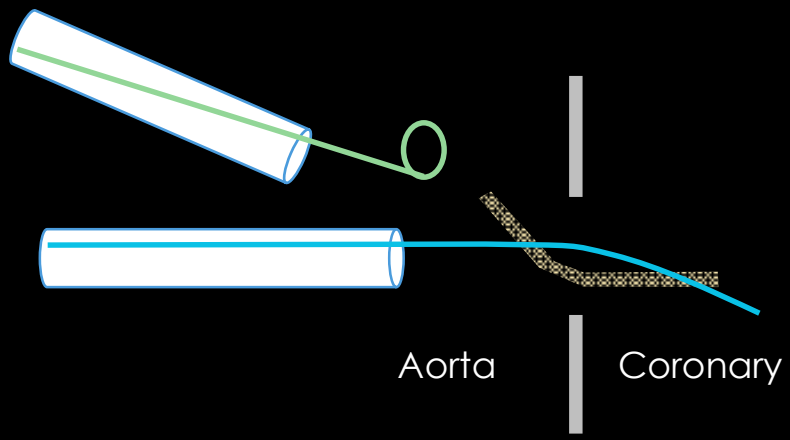


2-STEP, 2-GC



Conclusion

- Avoid stent dislodgement by good preparation of lesion and avoidance of forceful manoeuvre
- In the unfortunate scenario of "Half a worm in the apple", we recommend a two-step, two guiding catheter loop snare approach for safe retrieval



After snaring

THE END