A Weird Calcification Causing Rotablation Burr Stuck & Stent Uncrossable Lesion

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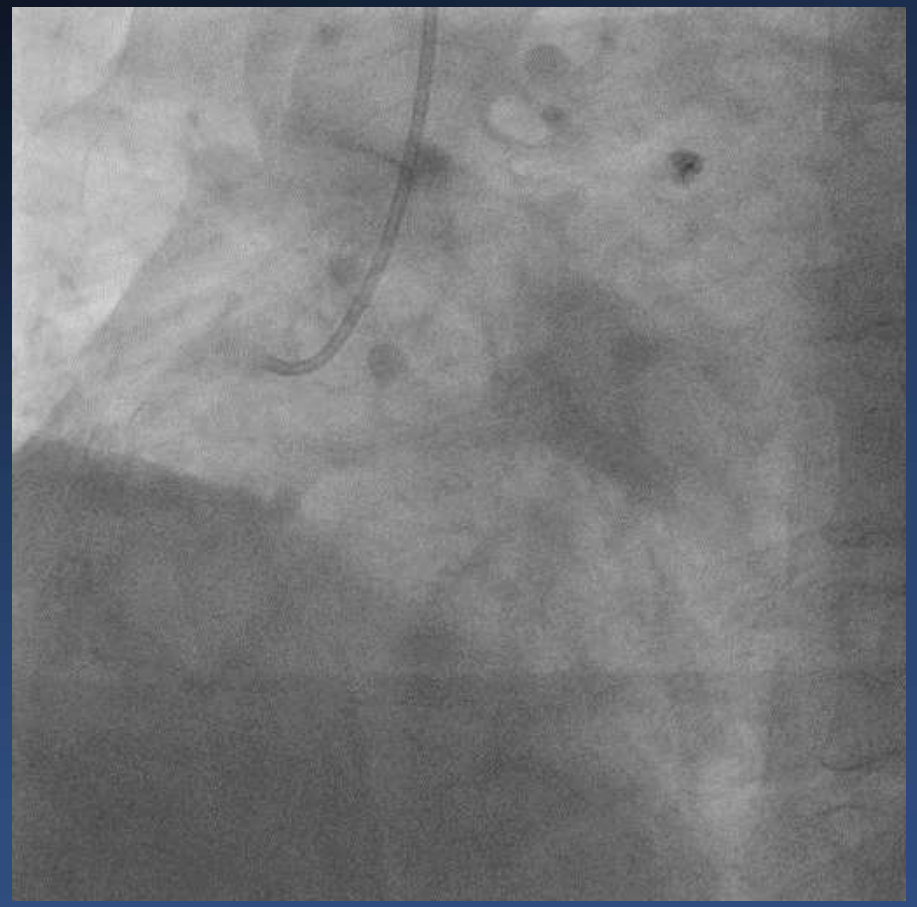
Patient Details

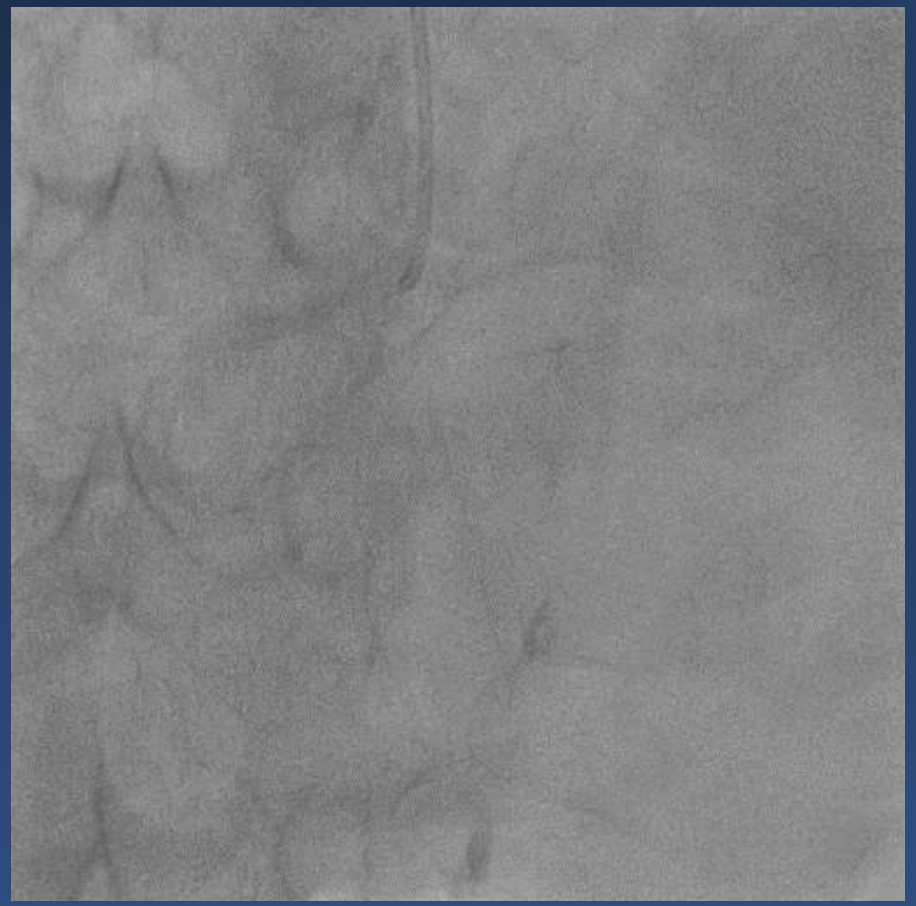
- The 65 y/o male is a case of
  - Type 2 DM
  - ESRD
  - Coronary artery disease s/p PCI
- The patient suffered from recurrent chest tightness in recent weeks.
- CABG was suggested by other hospital because of failed stenting. He came to our hospital for PCI.

Patient Details

- PCI history
  - BMS for LCx & RCA in Jul. 2018
  - POBA for LAD in Sep. 2018
  - Visit our hospital in Nov. 2018
- According to the medical record, stent failed to cross the LAD calcified lesion during the last PCI. The proximal lesion was only dilated with 2.5mm balloon.

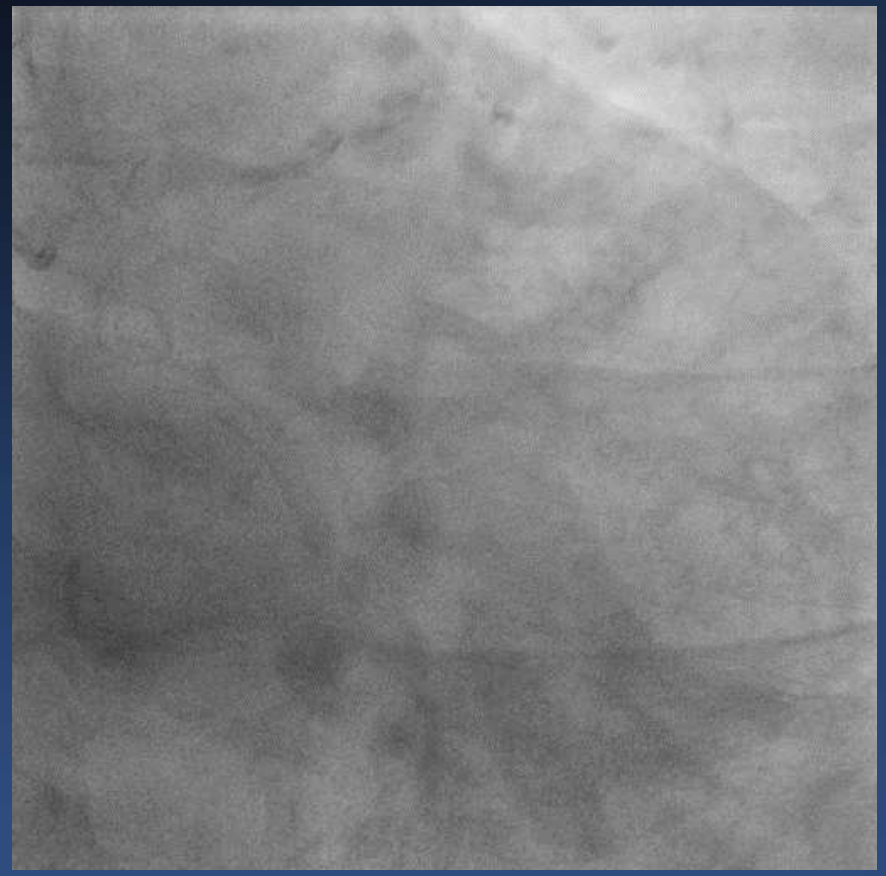
Diagnostic Angiography

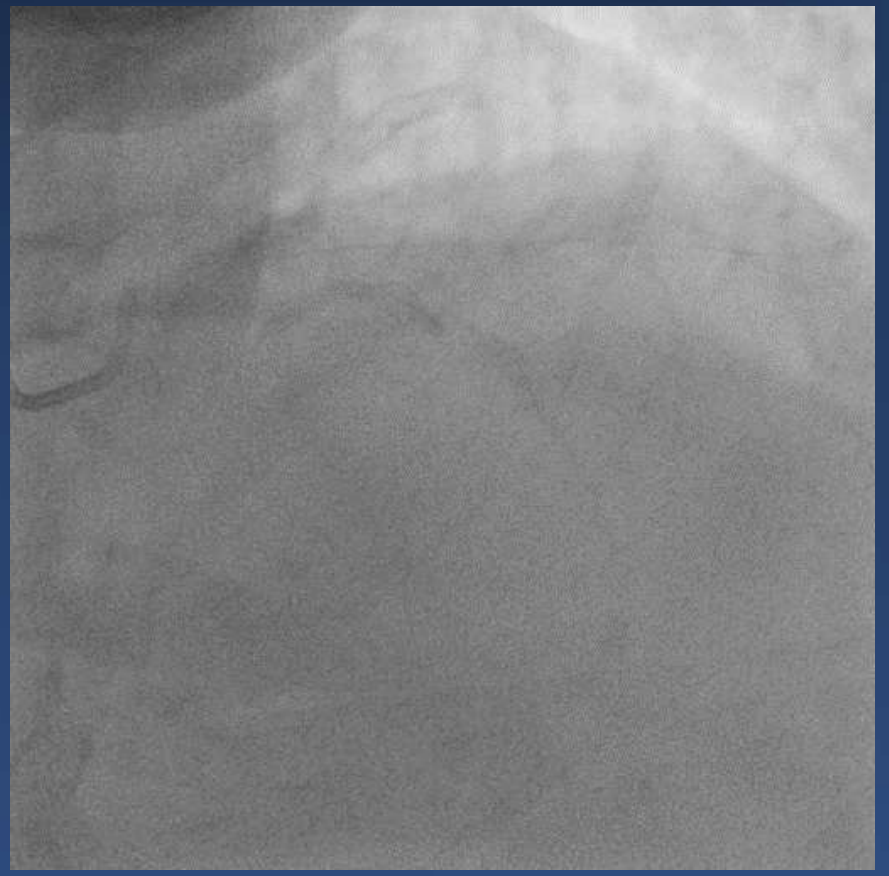




- **RCA: 75% in-stent restenosis of mid-RCA**

Diagnostic Angiography

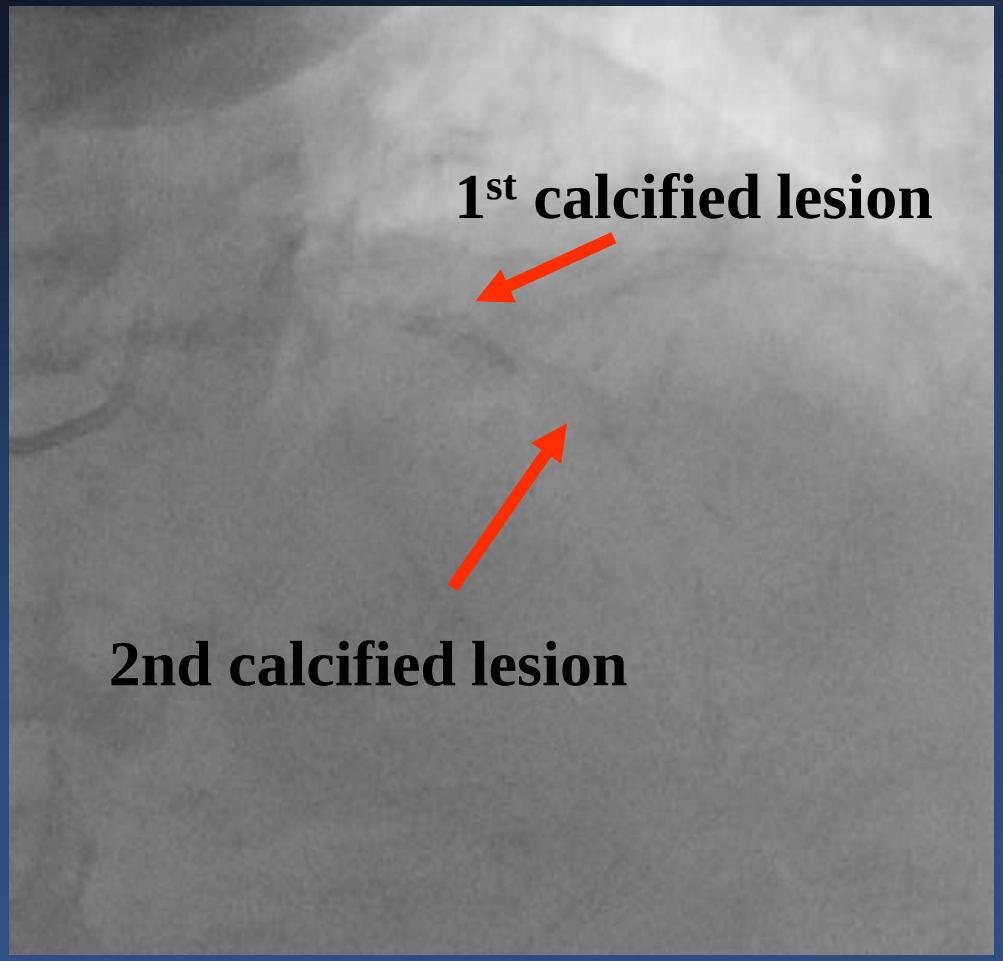


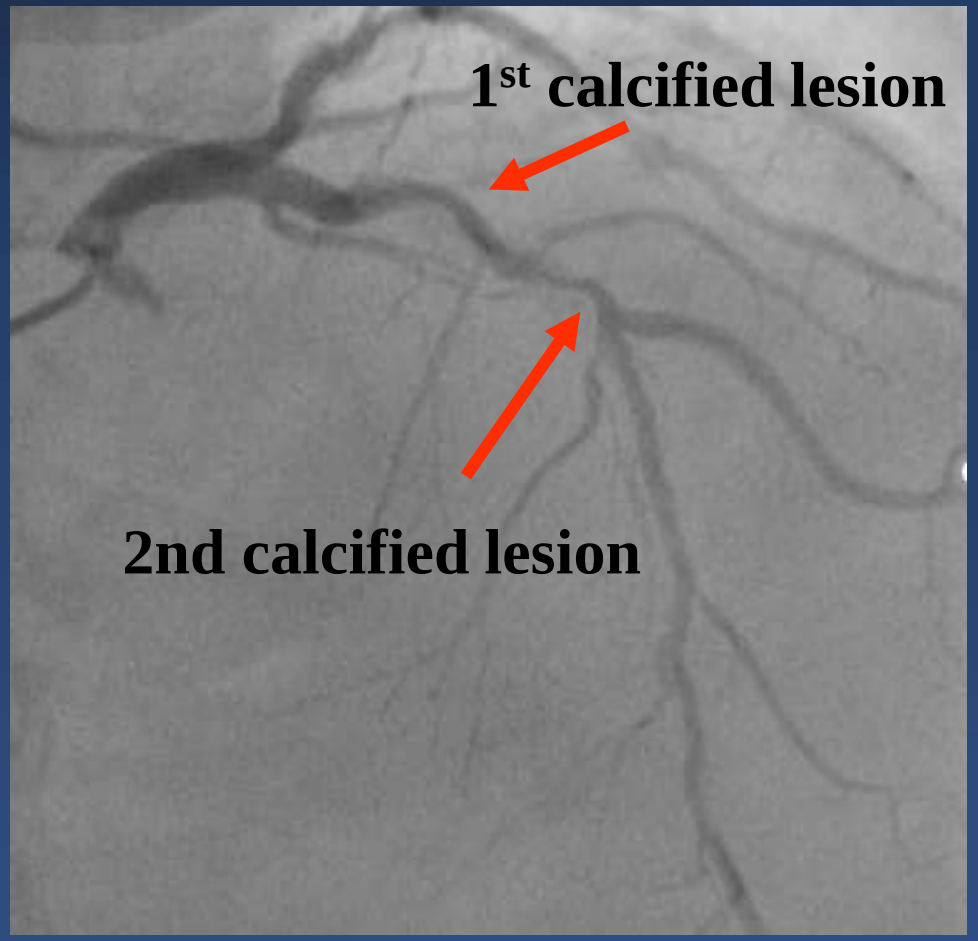


LAD: proximal LAD 60-85% stenosis with heavy calcification

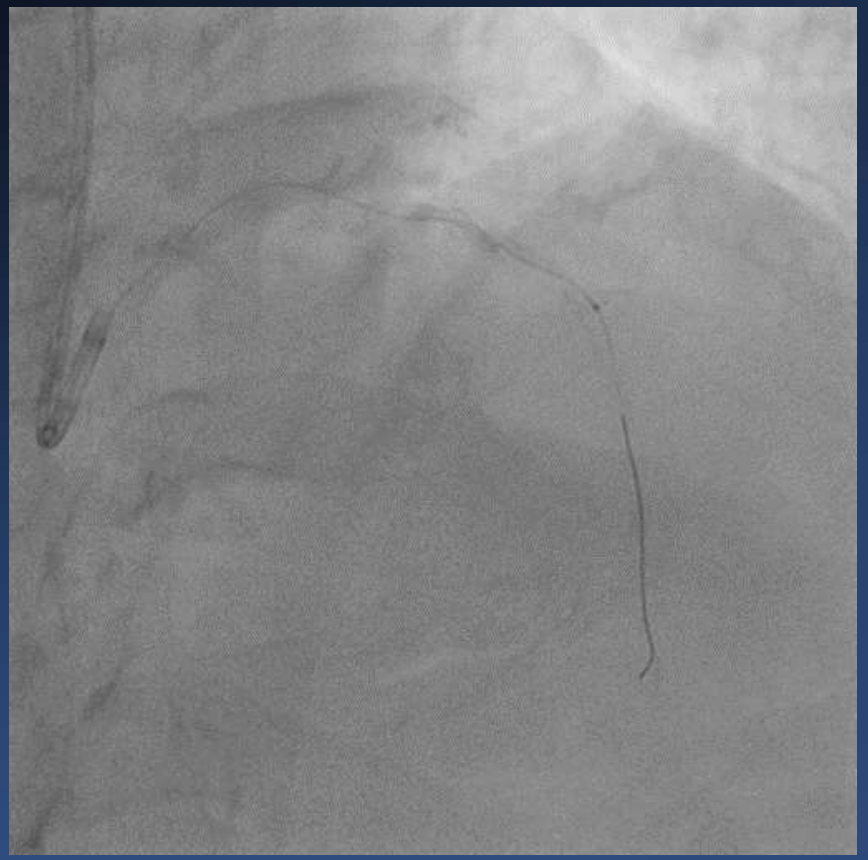
LCx: ostium 50% stenosis, middle LCx 50% ISR,
85% stenosis at ostium of OM

The 2 critical LAD lesions



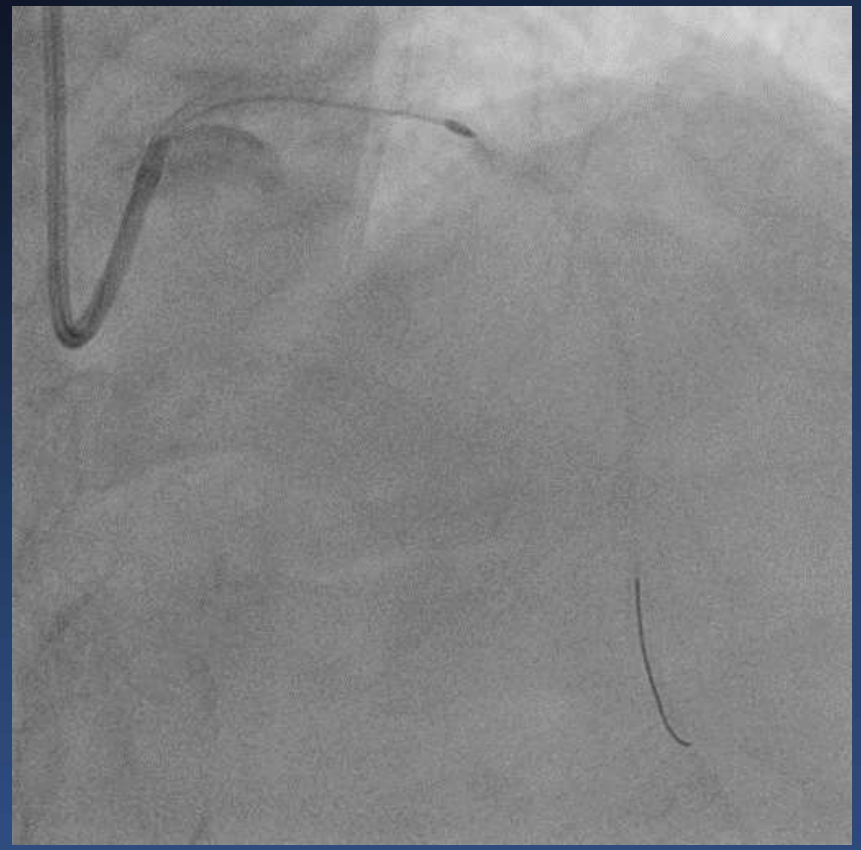


Prepare rotablation, guiding: EBU 3.5 7Fr



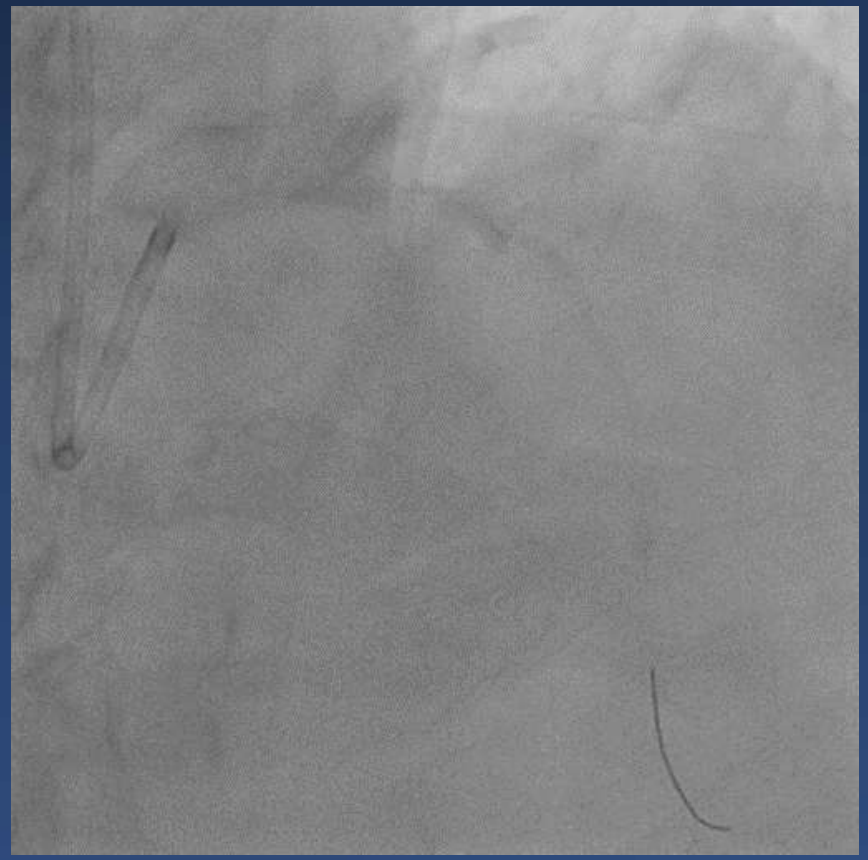
- Finecross microcatheter could only reach to mid-LAD.
- Changed wire to rotafloppy wire

Rota burr stuck



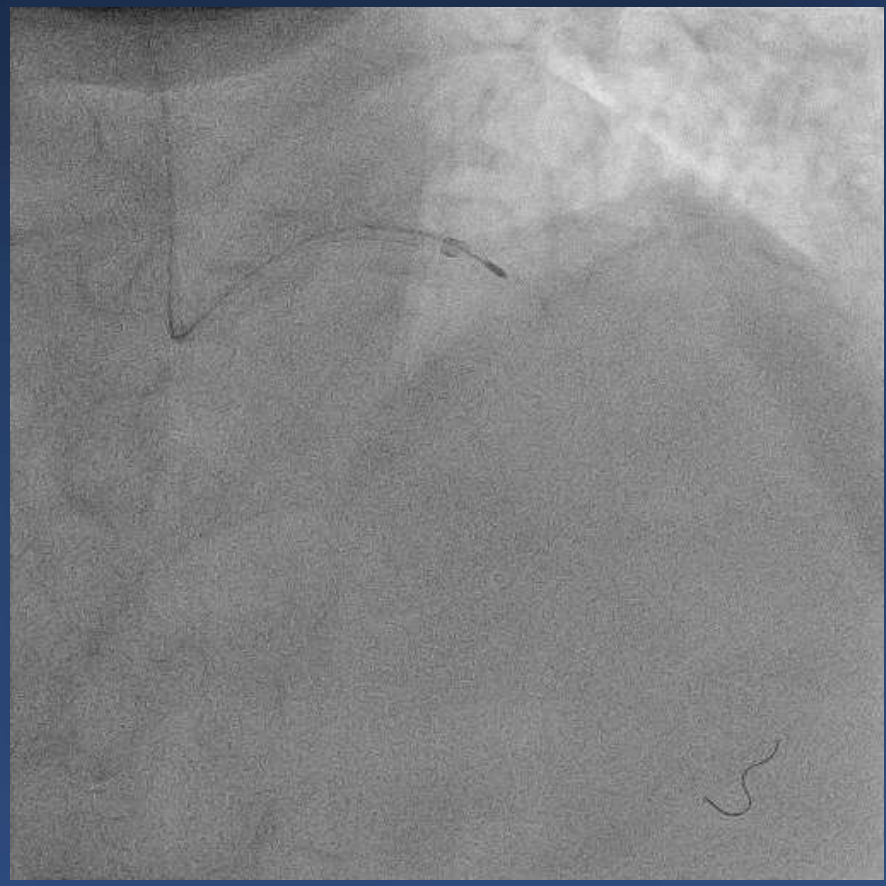
- 1.25-mm Rota burr cross the 1st lesion, but got stuck at the 1st lesion.
- The burr could be easily removed by pulling the whole system.

2nd time rotablation



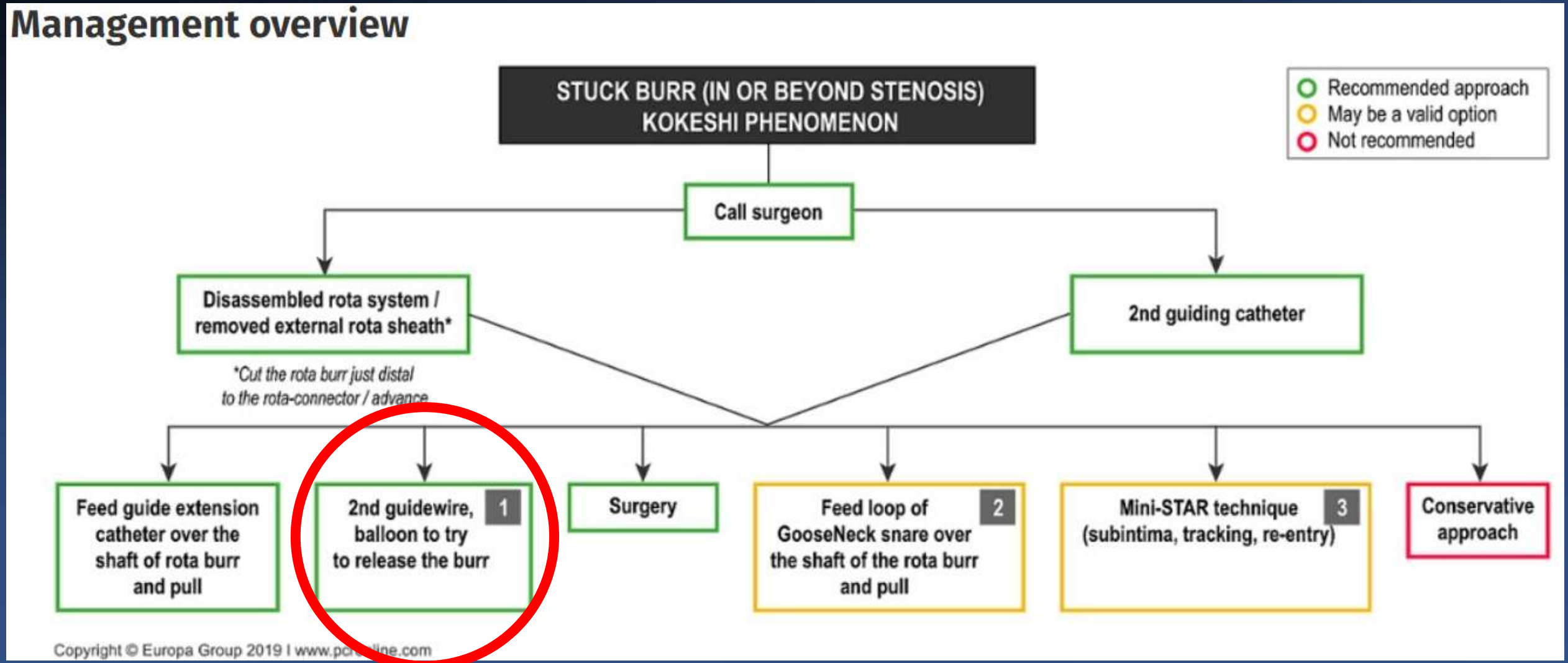
- Used a Guidezilla catheter 7F for better support.
- Perform several times of rotablation (18000 ~ 20000 rpm), but the burr could not cross the 2nd lesion

Rota burr stuck again

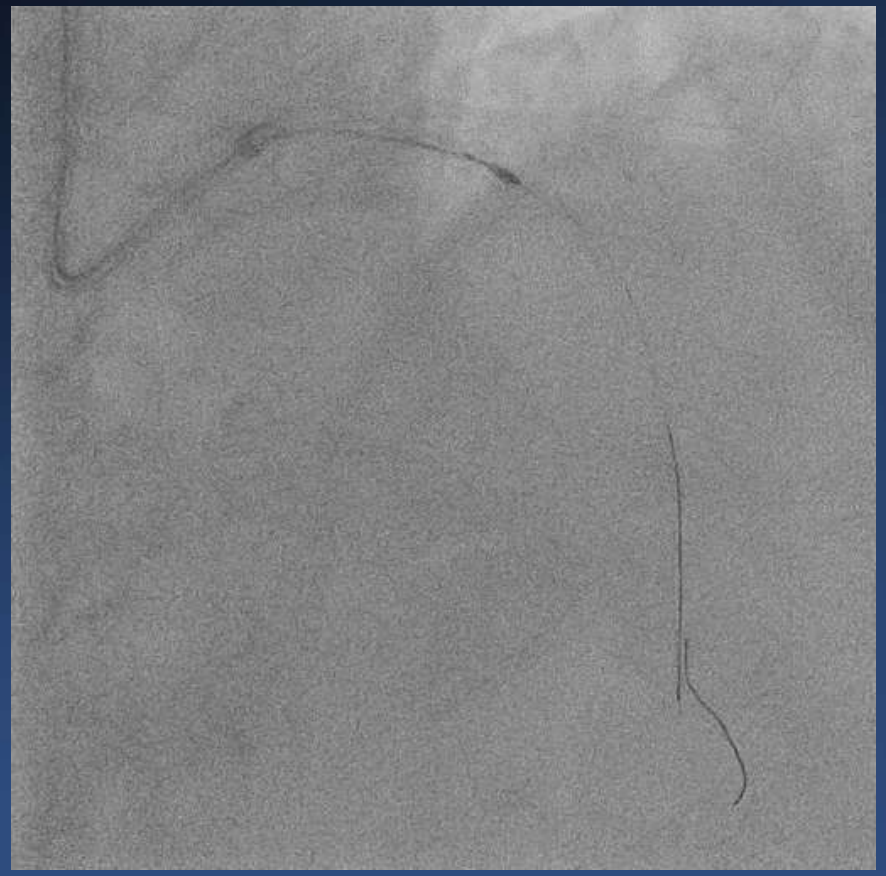


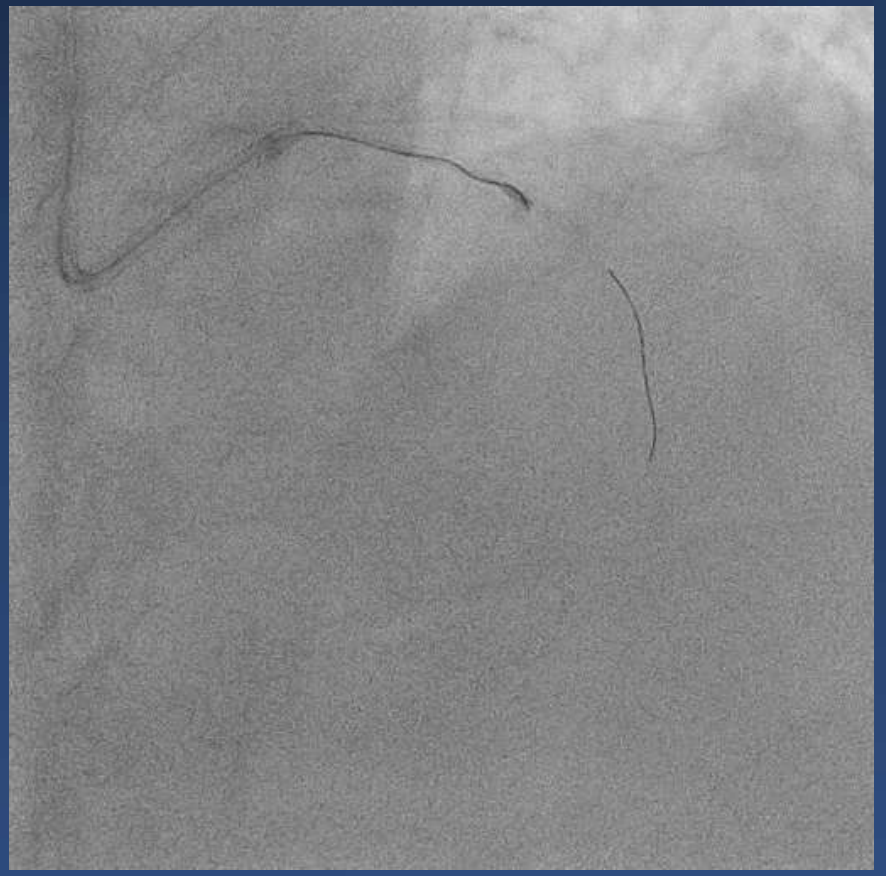
- Finally a new 1.25-mm burr could cross the 2nd lesion.
- The burr got stuck again at the 1st lesion.
- The burr could not be removed easily this time.

Stuck burr strategy



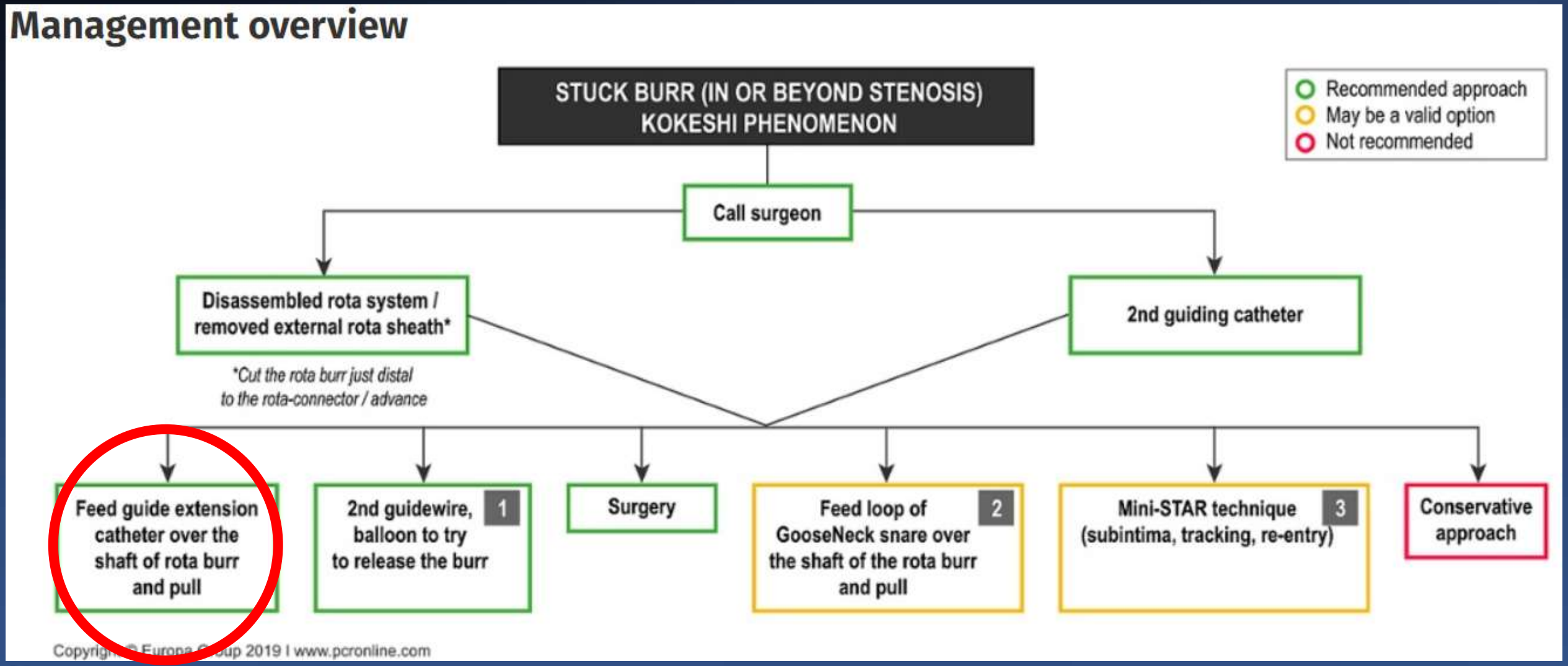
2nd guidewire & balloon



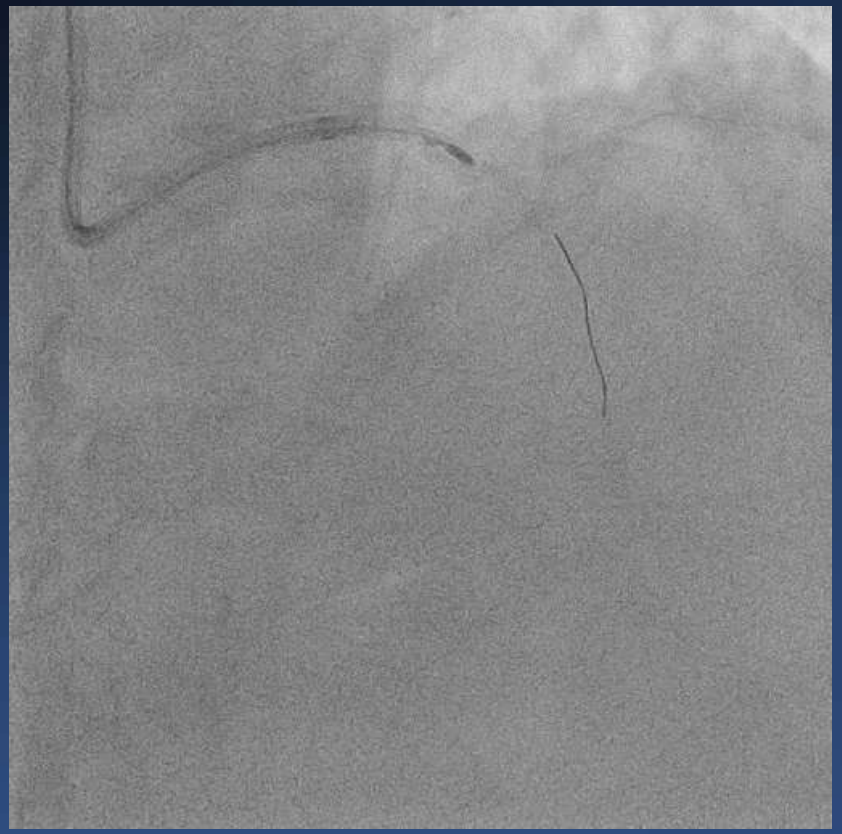


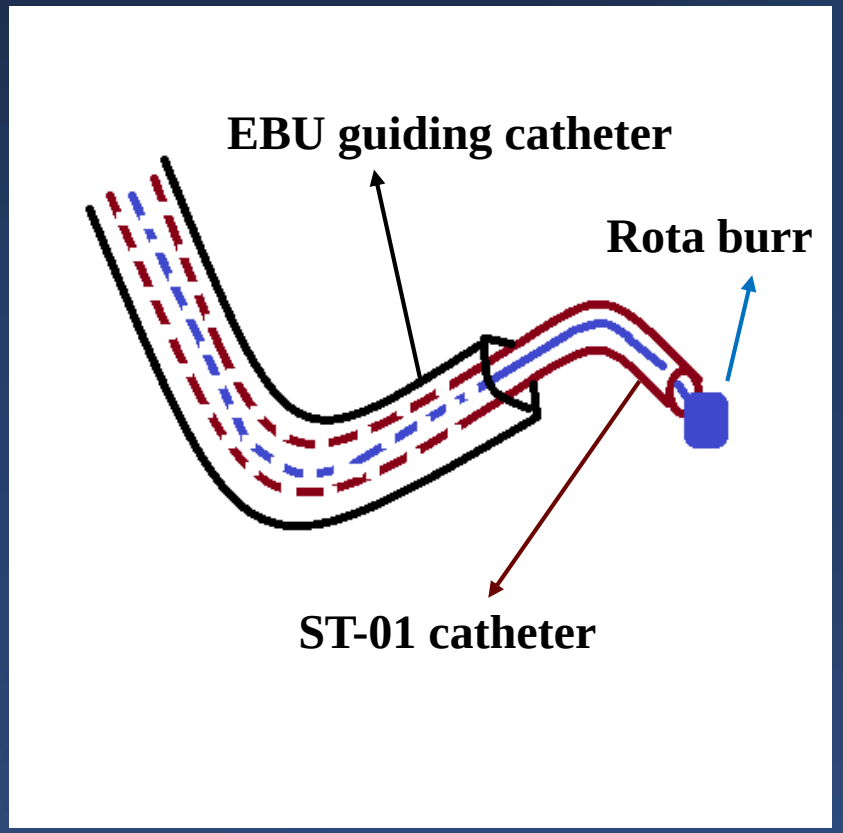
- Another Pilot 50 wire advance to distal LAD
- However a 1.2 x 12 mm balloon failed to cross the burr

Stuck burr strategy



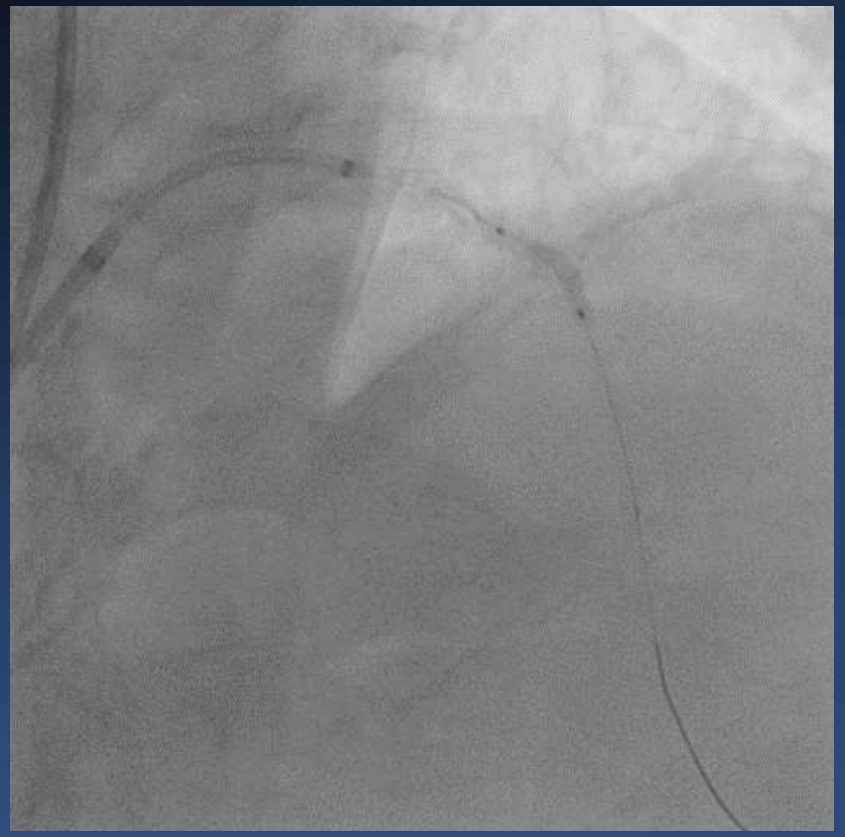
Extension guide catheter

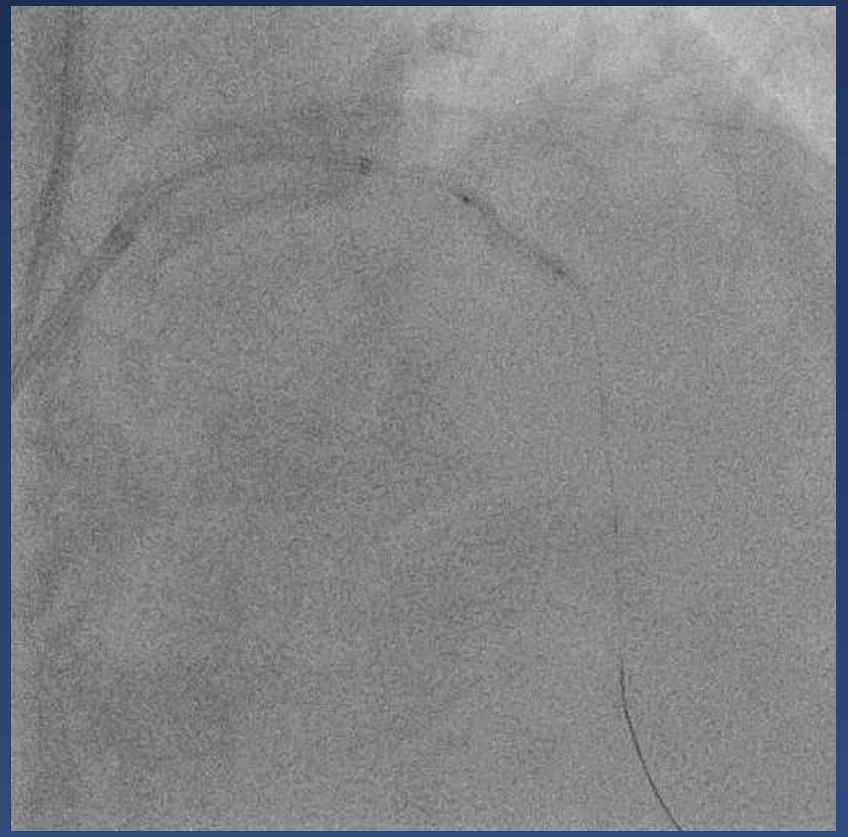




- Cut off the shaft & sheath of rota, remove the outer sheath
- Inserted a ST01 catheter to cover the burr, pull the burr.
- Removed it successfully.

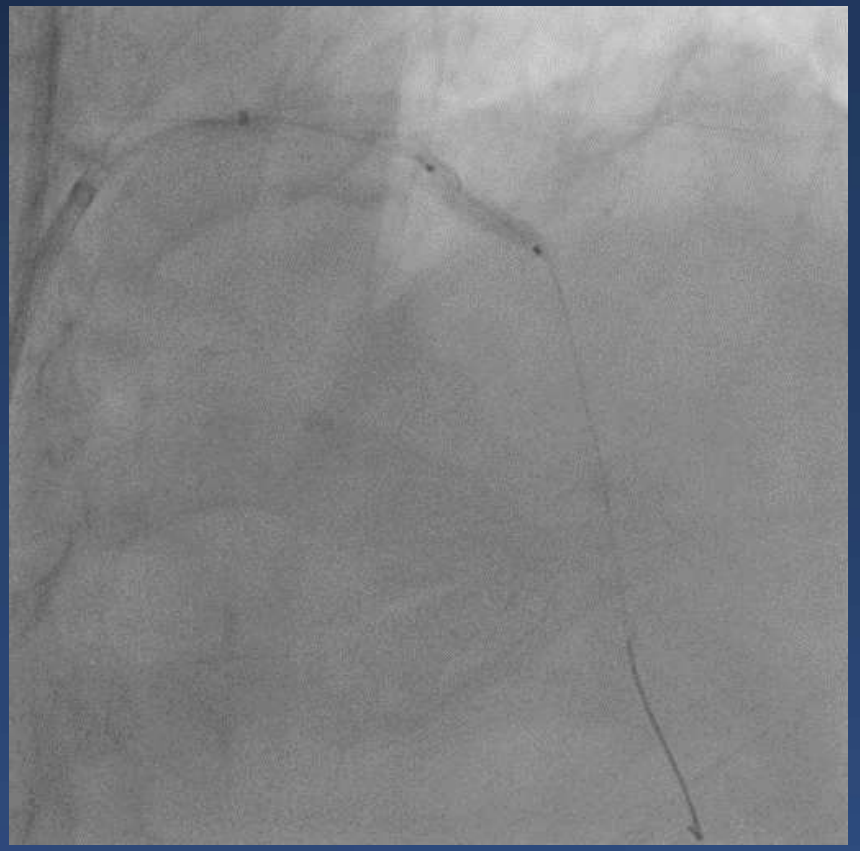
Balloon dilatation





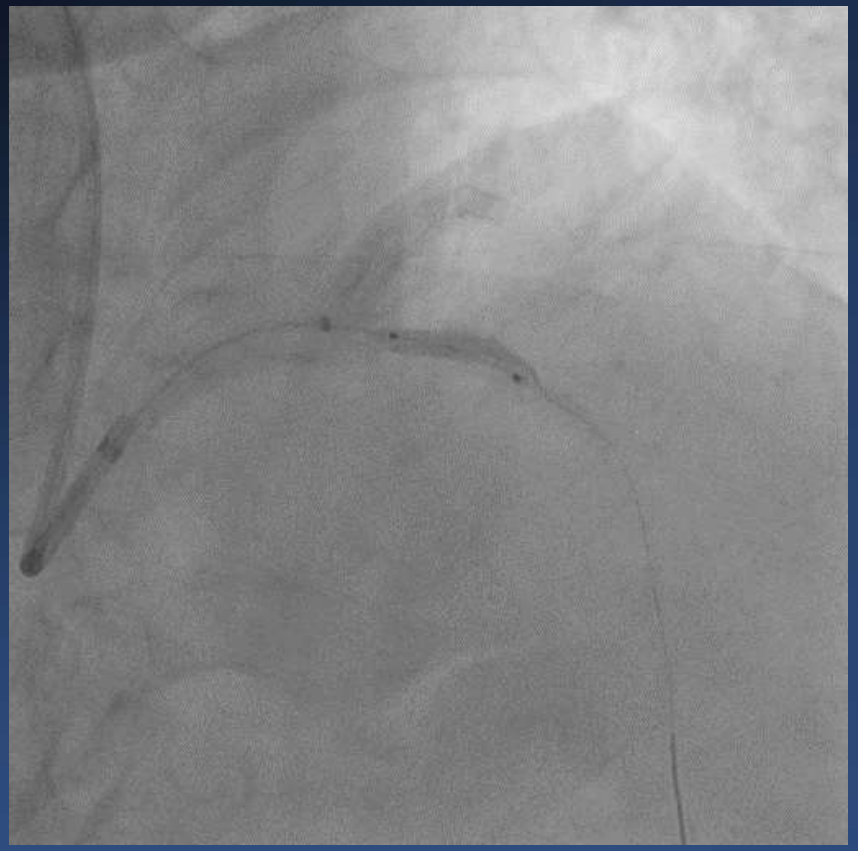
- A 2.5 x 15 mm balloon dilated the lesions.
- Balloon burst at the 1st lesion.
- Dilate the lesion again with a 2.5 x 12 mm NC balloon

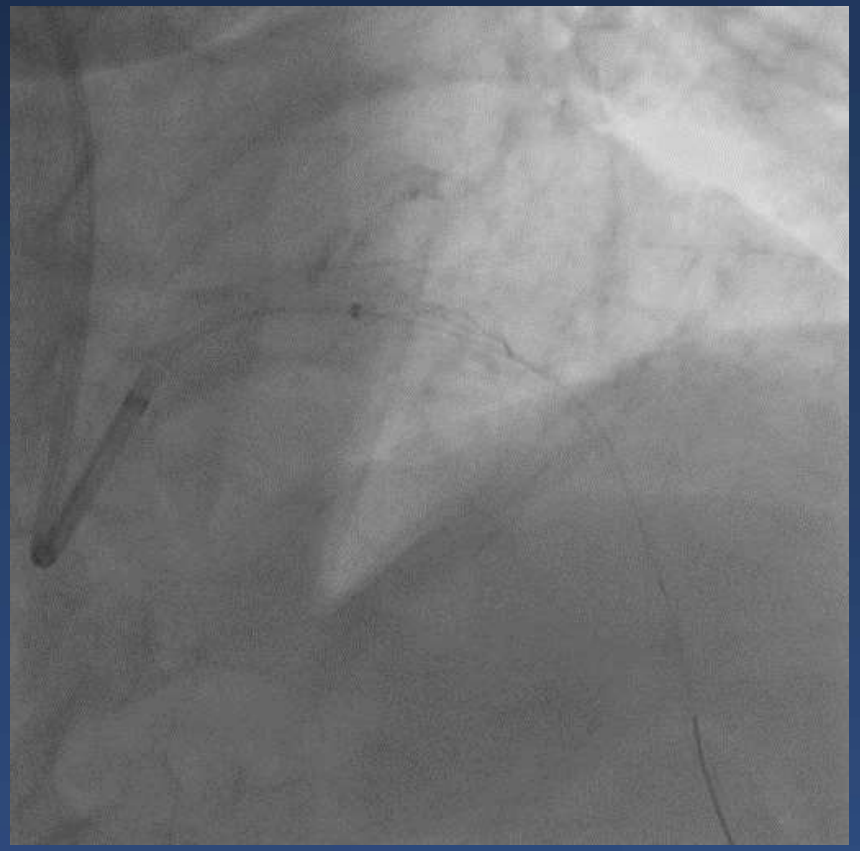
Stenting the 2nd lesion



- A 2.5 x 15 mm DES failed to reach the 2nd lesion with Guidezilla.
- Deployed the stent with support by Guideliner catheter.

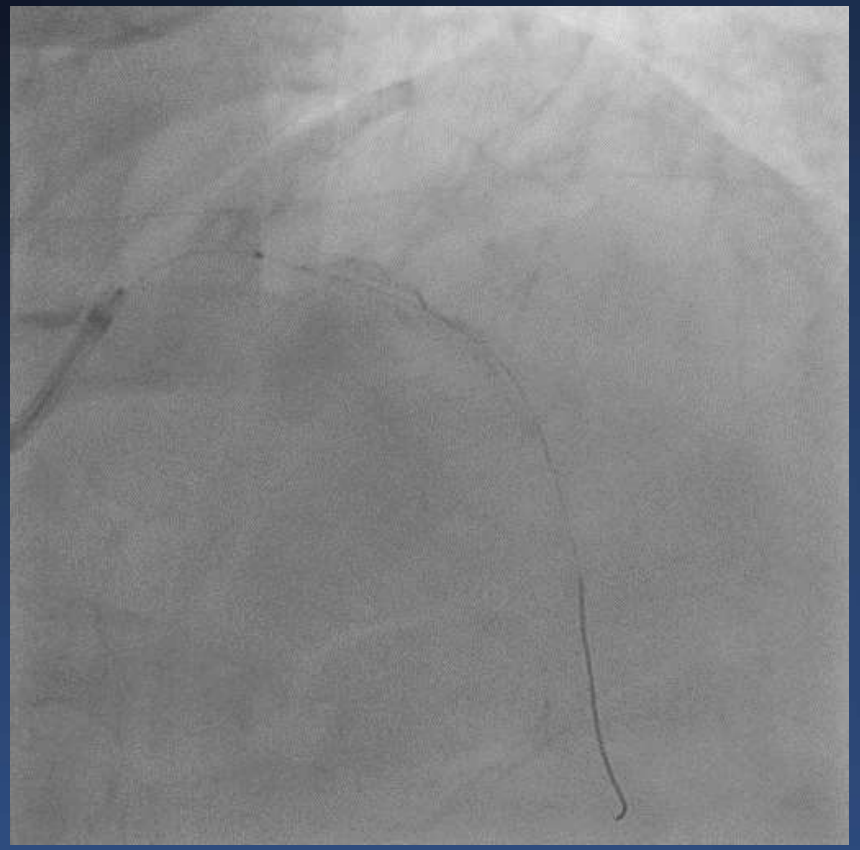
Stenting the 1st lesion

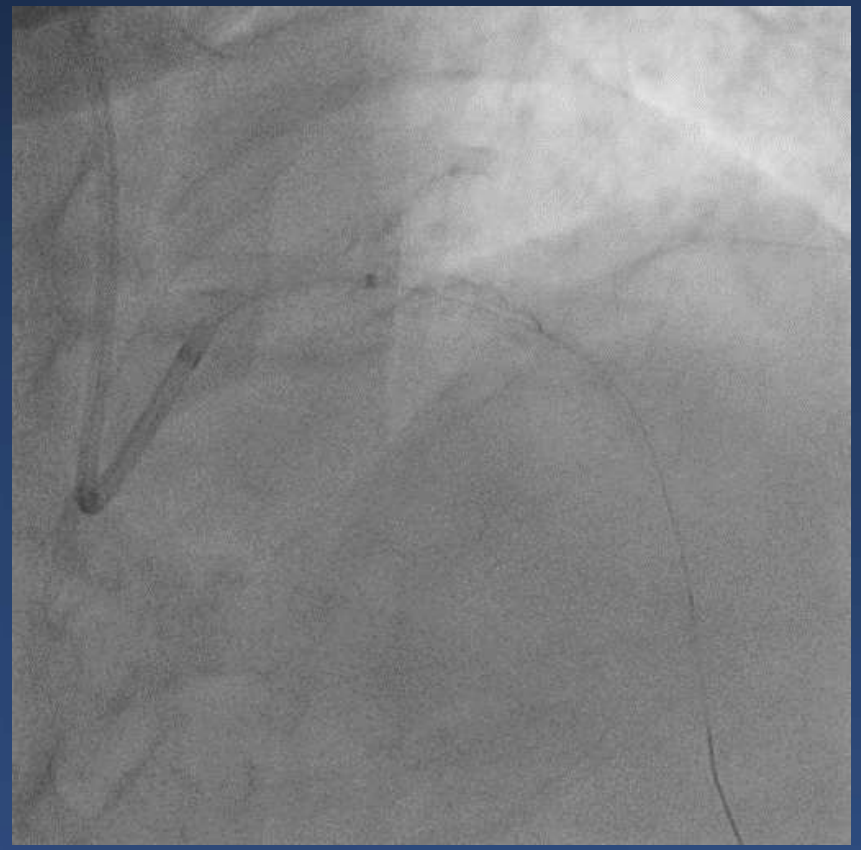




- Deployed another 2.75 x 15 mm DES at the 1st lesion
- Post-dilate with 2.75 x 8 mm NC balloon

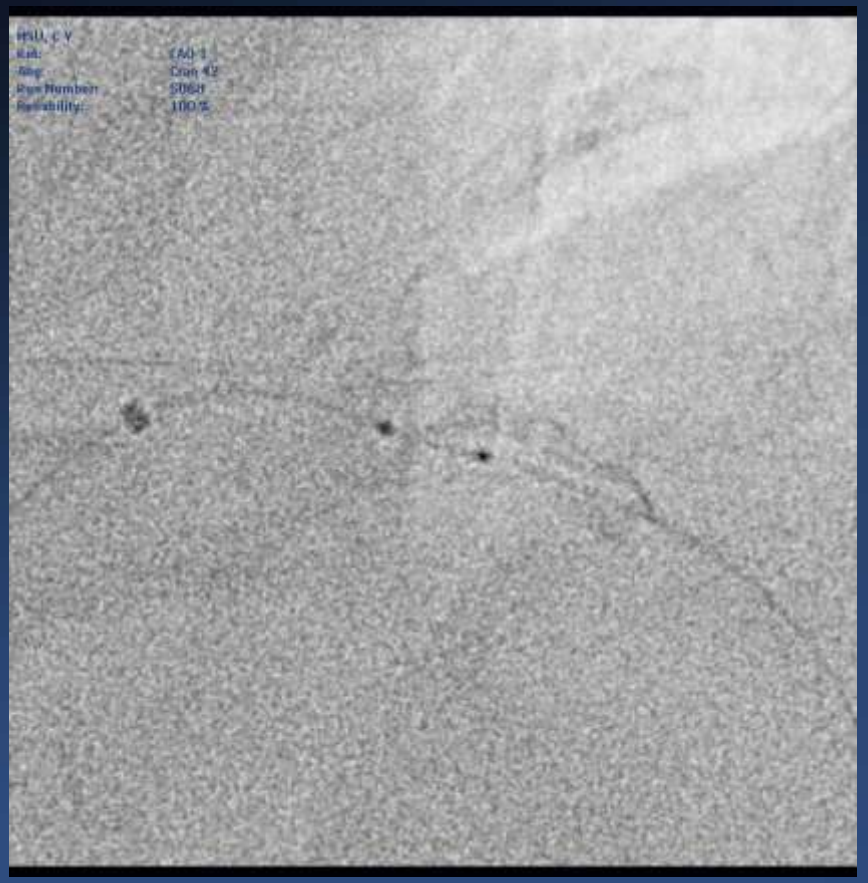
Final result





- **IVUS failed to enter the proximal stent**

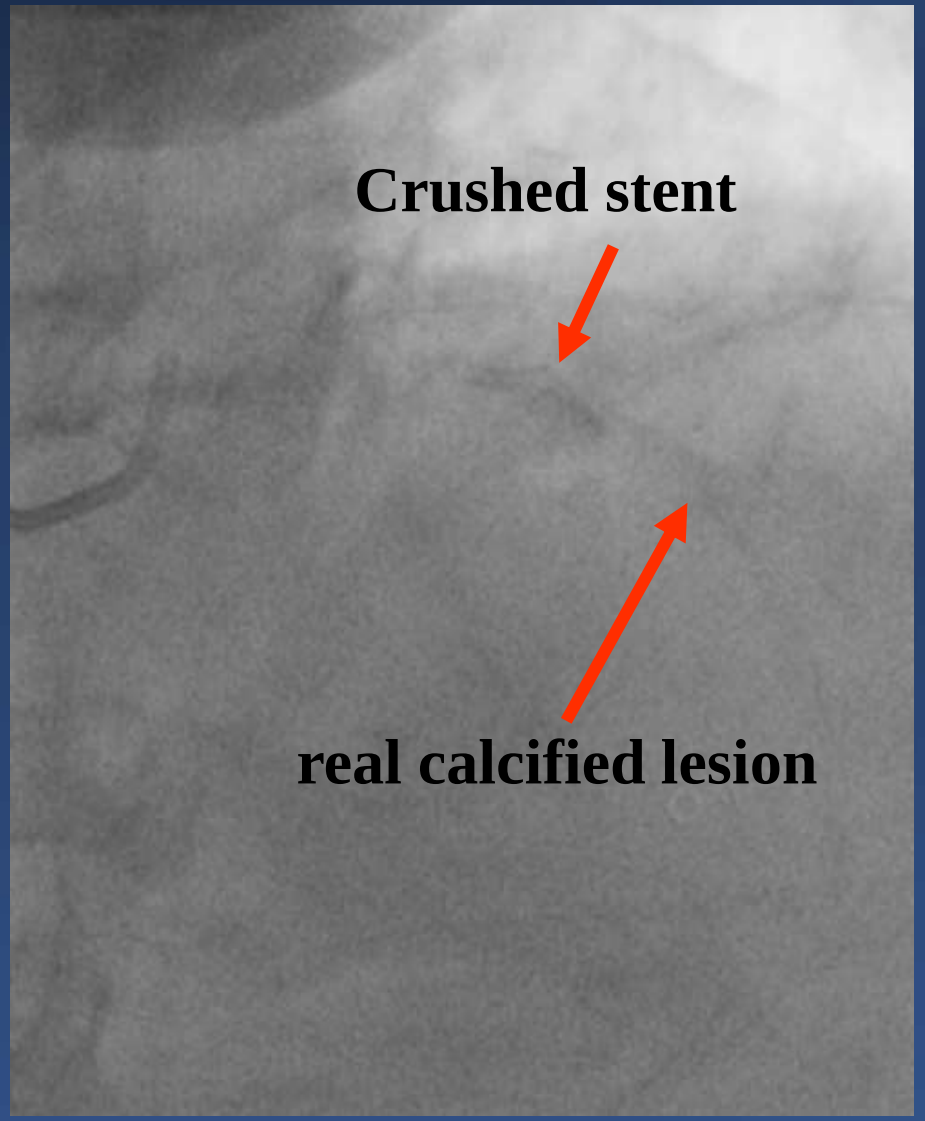
StentBoost Image during PCI



- **The calcification showed similar enhancement as stents under StentBoost image**

After the PCI

- Finally we had brought us the image of previous PCI.
- The 1st calcified lesion we believed before is actually a dislodged and crushed stent !!!
- The stent dislodged due to severe calcification. They chose stent crush technique.



Discussion Points

- What's the strategy for heavy calcified lesion?
  - rotational atherectomy, orbital atherectomy, laser, shockwave
  - The "real" calcified lesion is actually easily dealt with rotational atherectomy.
- The crushed stent led to rota burr stuck & trouble in stent delivery. How to identify the crush stent earlier?
  - Intravascular image might be helpful.
  - Stent boost image

Conclusion/Take-home Message

- Always prepare stuck burr strategy while performing rotational atherectomy.
- A dislodged and crushed stent might mimic a complex calcified lesion.
- Always review images of past PCI before your procedure, especially complex PCI.