IVUS guided Ostial stenting

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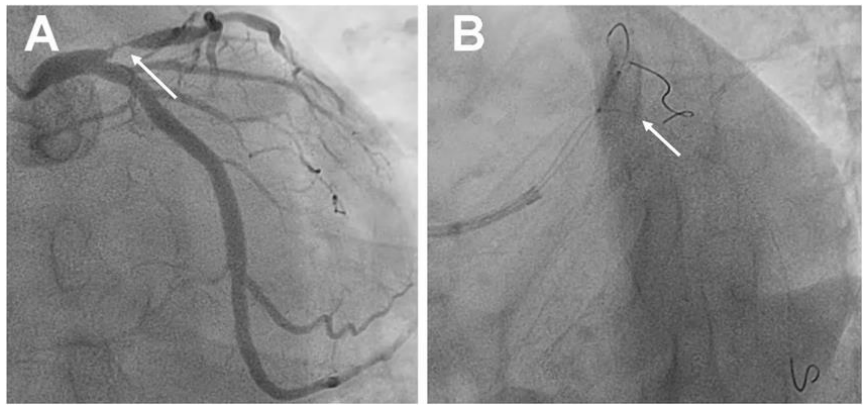
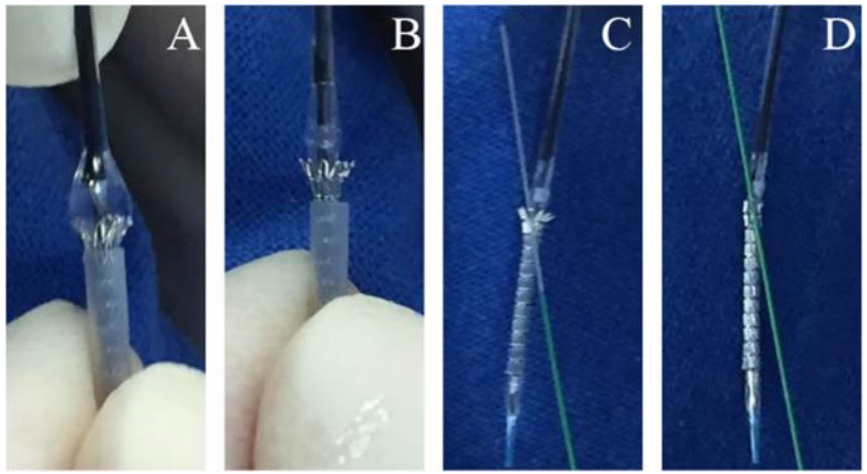
I have nothing disclose

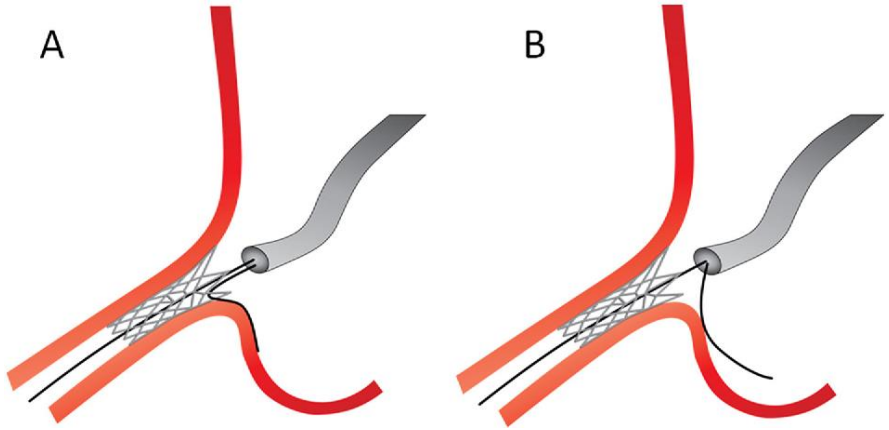
Traditional ostial stenting approach

By angiogram alone





Szabo technique



Floating guidewire

Limitation

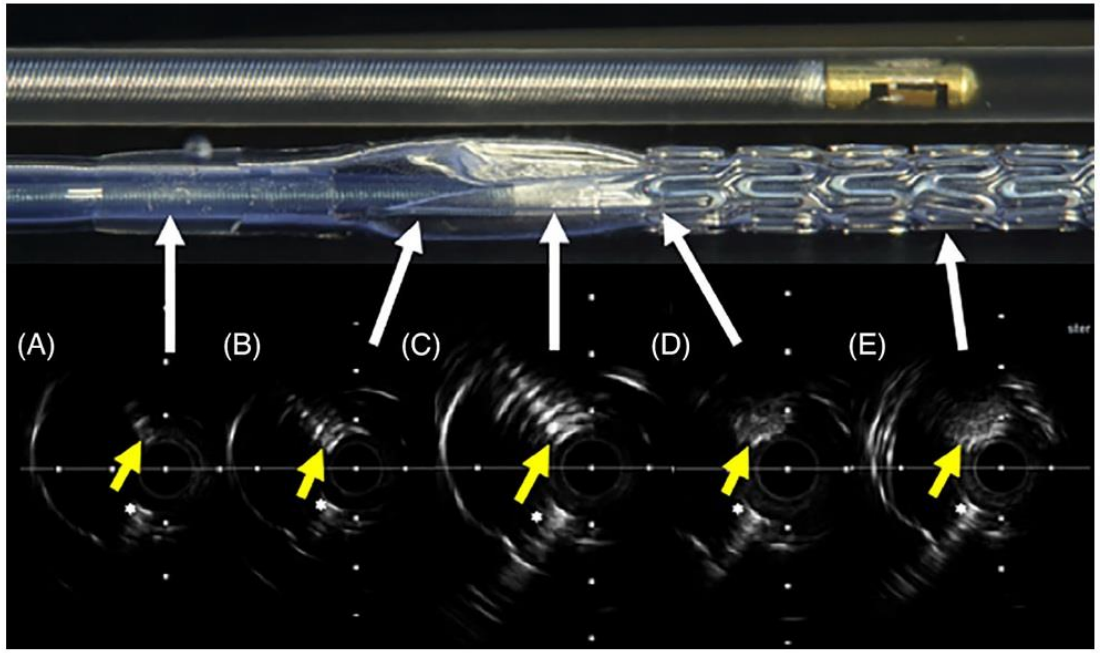
- 1. Unclear about true ostial location
- 2. Too deep may result in geographical miss
- 3. Not deep enough may result in significant metal protrusion into aorta which make future re engagement difficult
- 4. Additional stenting may result in high risk of TLF
- 5. Szabo technique had risk of stent dislodgement

ORIGINAL STUDY

WILEY

Real-time intravascular ultrasound guidance: A novel technique for accurate placement of ostial stents

Scott A. Harding MB ChB[1] | Bruce Webber MHSc[2] | Sarah Fairley MBBChBAO, PhD[1] | John A. Ormiston MBChB[2]



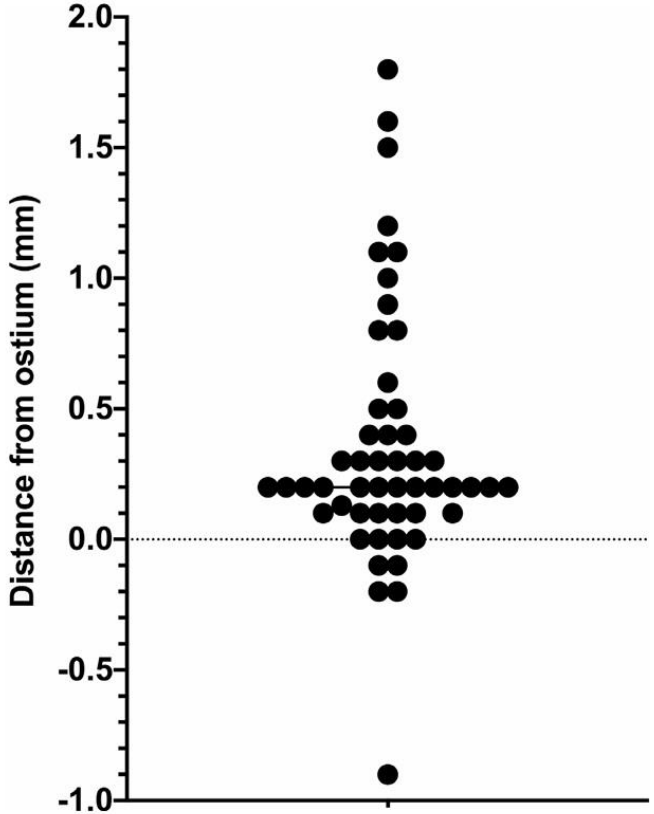


FIGURE 4 Distance from the proximal stent edge to the ostium. Positive values represent protrusion of the proximal stent edge past the ostium while negative values represent location of the proximal stent edge distal to the true ostium. The median protrusion was 0.2 mm (interquartile range 0.1 to 0.5 mm)

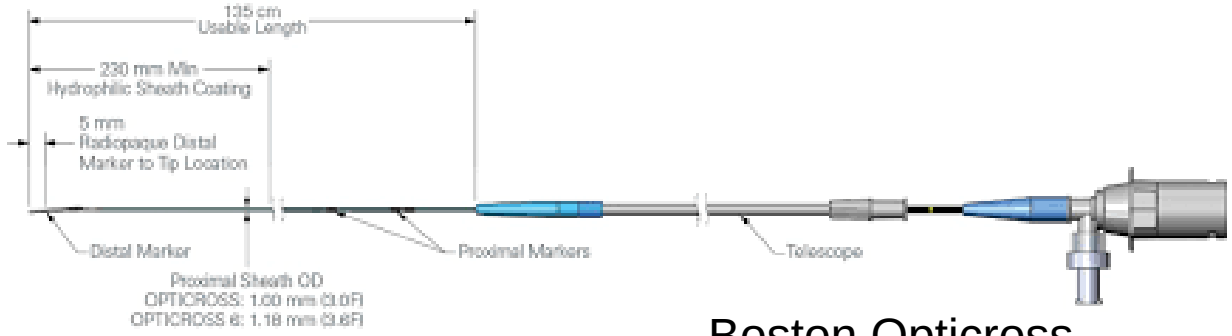
Catheter Cardiovasc Interv. 2021;1–7

Advantage of IVUS guided stenting (Real Time)

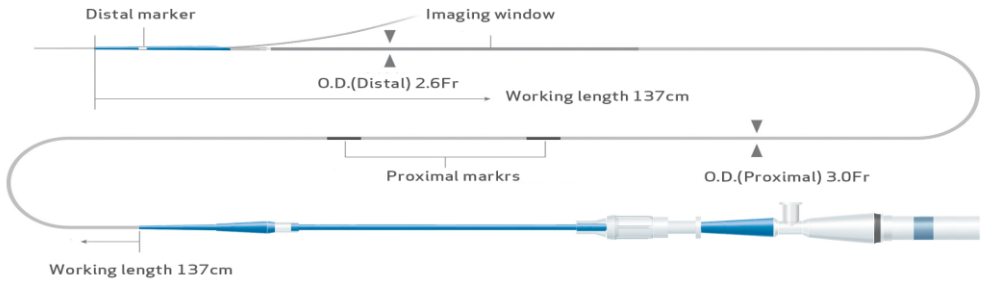
- It provide real time anatomical information
- Studies shown that it can allow precise full ostial coverage and avoiding geographical miss
- It can reduce contrast consumption on repeat testing before final deployment

You need to understand the IVUS system In your lab

	Boston opticross HD	Acist Hdi	Volcano Eagle eye	Terumo AltaView	Terumo Navifocus	TrueVision
Frequency	60 MHZ	40/60MHZ	20MHZ	60MHZ	40MHZ	60MHZ
Profile at imaging window	2.6Fr	2.5Fr	3.5Fr	2.6Fr	2.6Fr	3.15Fr
Crossing Profile	3.1Fr	3.4Fr	3.5Fr	3Fr	3.2Fr	3.5Fr
Tip to transducer distance	20mm	20mm	Short Tip 10.5/2mm	22mm	Short Tip 9mm	20mm
Pull back system	+	+	-	+	-	+



Boston Opticross



Terumo Alta View

Common setting

- Wire both branches (aorta incase of aorto-ostial lesion)
- Insert stent first
- Follow by IVUS catheter
- Real time stenting deployment
- Remove stent balloon first before IVUS

- Boston IVUS
  - 8Fr :no resistance
  - 7Fr : feasible but with some resistance

- Terumo Altaview IVUS
  - 7Fr compatible

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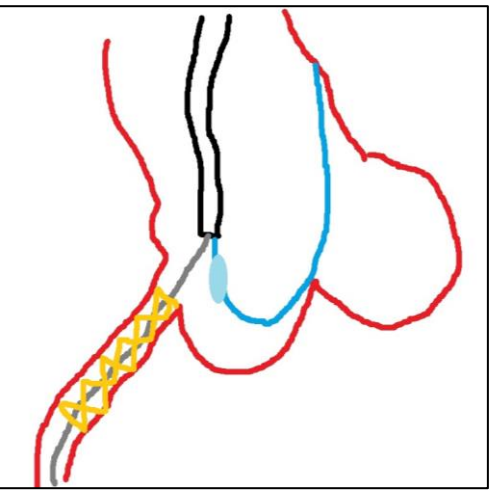
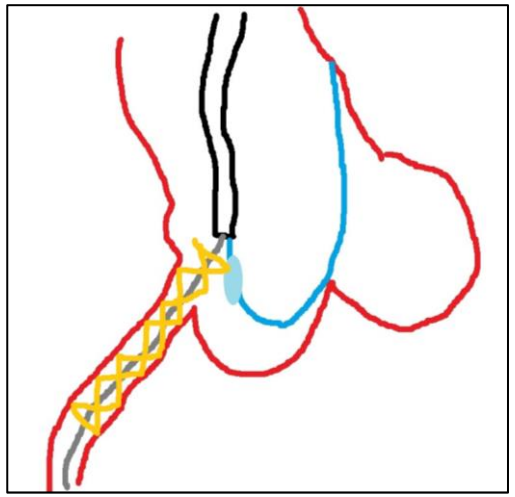
IMAGES IN INTERVENTION

Floating IVUS Technique for Accurate Placement of Aorto-Ostial Stent

Calvin Leung, MBChB, Cheuk Bong Ho, MBBS, Ivan Man Ho Wong, MBBS, Jake Yin Kei Yeung, MBChB, Alan Ka Chun Chan, MBBS, Michael Kang Yin Lee, MBBS





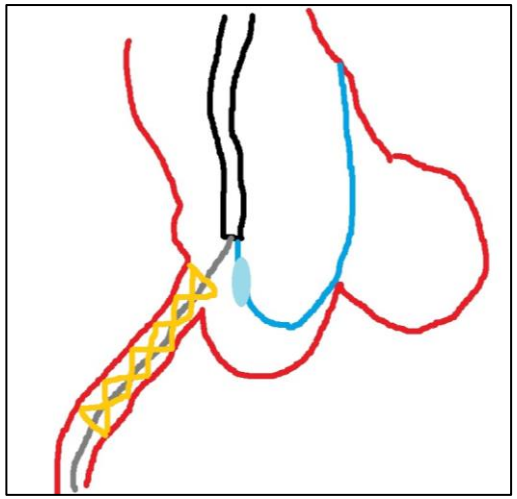
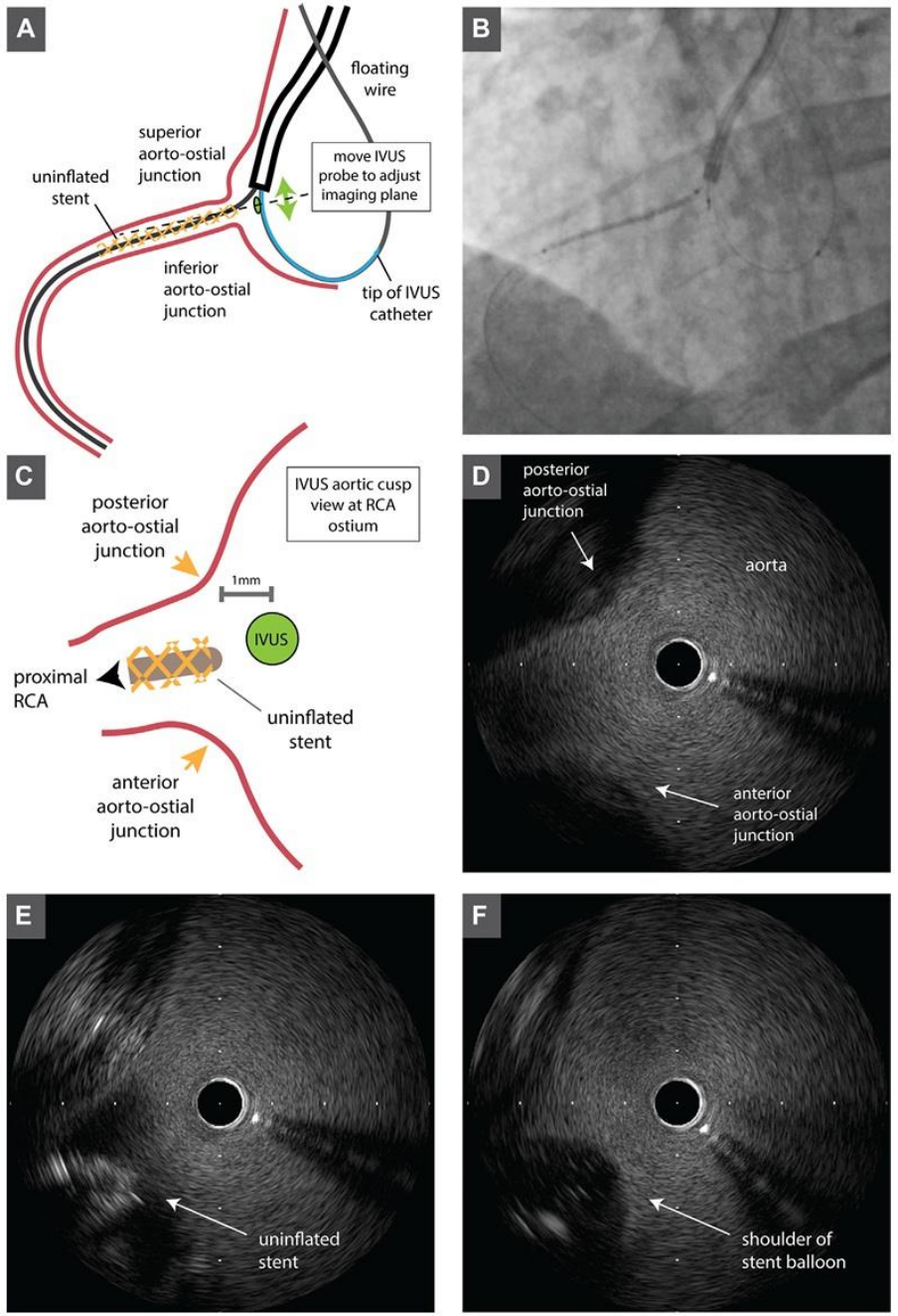
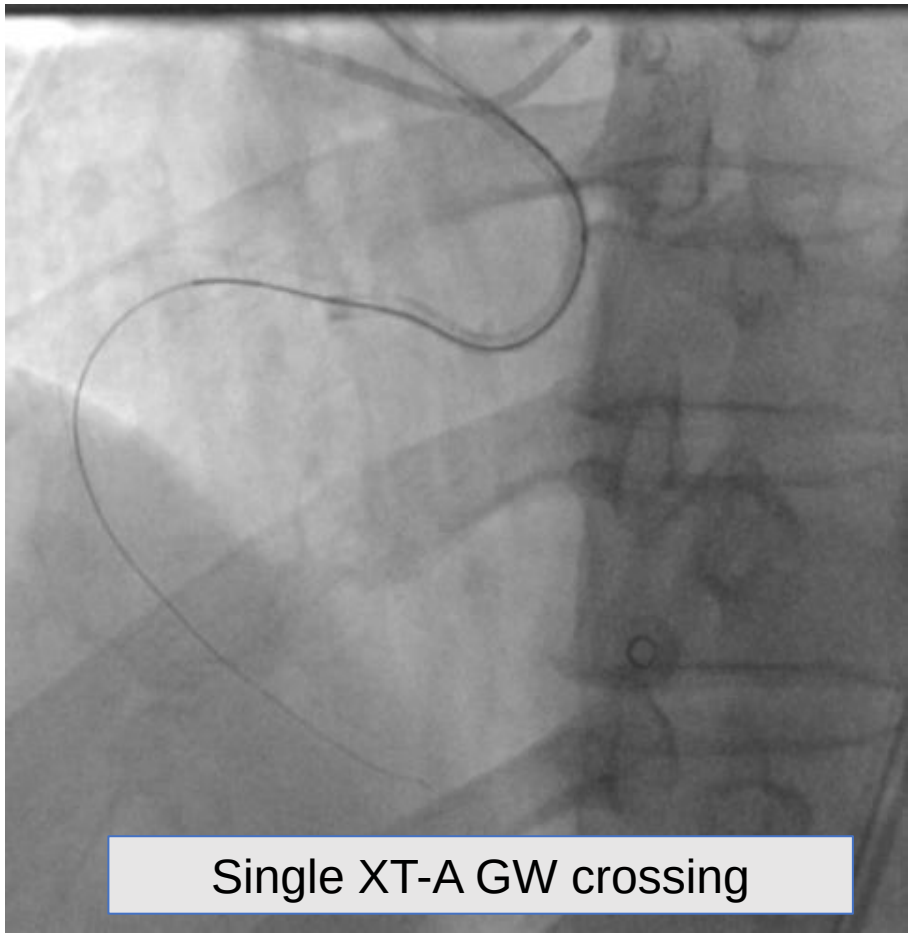


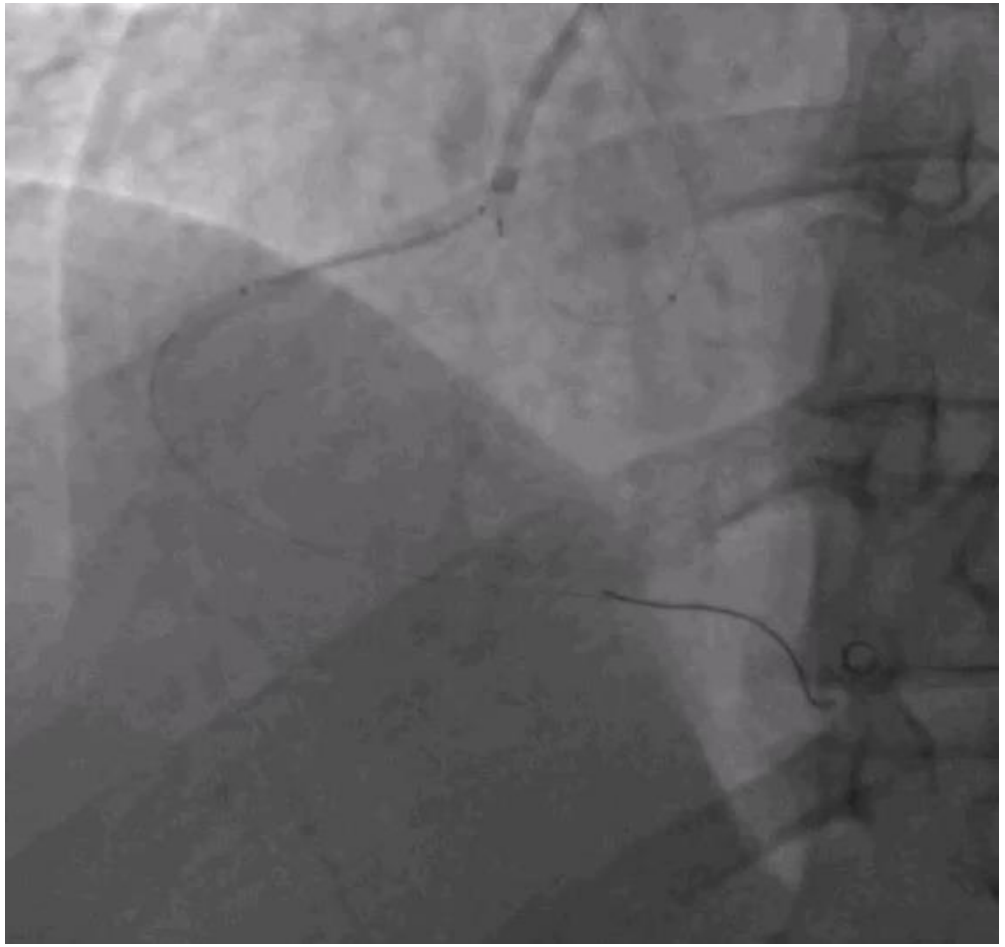
FIGURE 1 Floating IVUS Technique for Aorto-Ostial Stenting

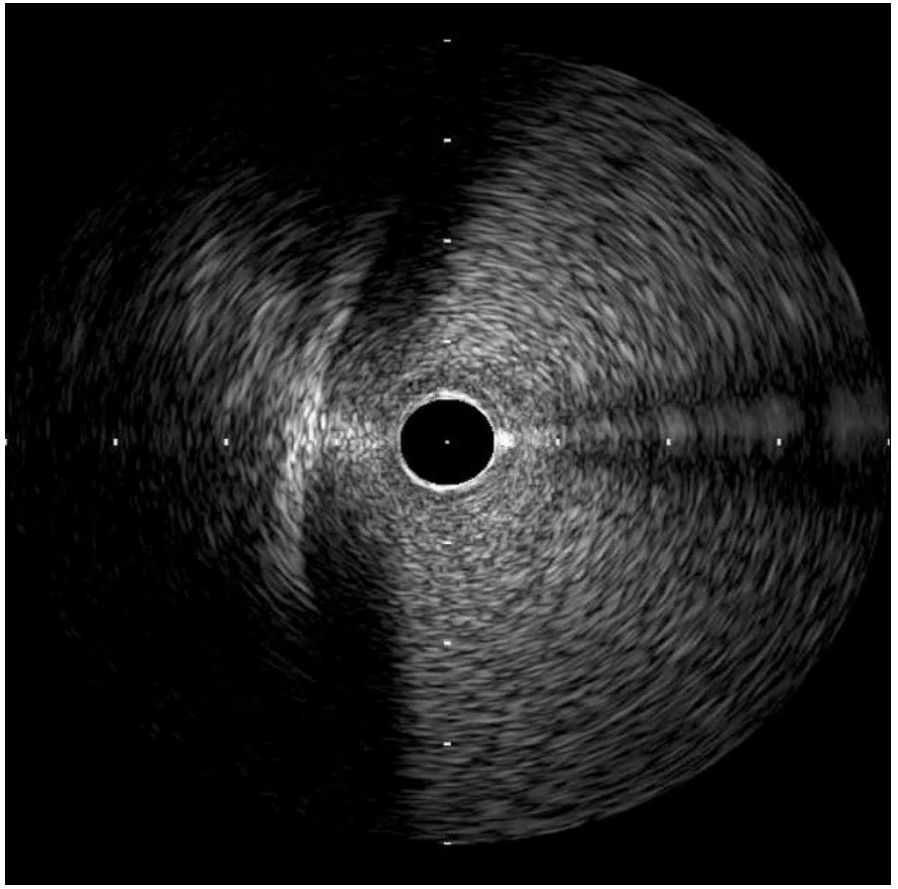


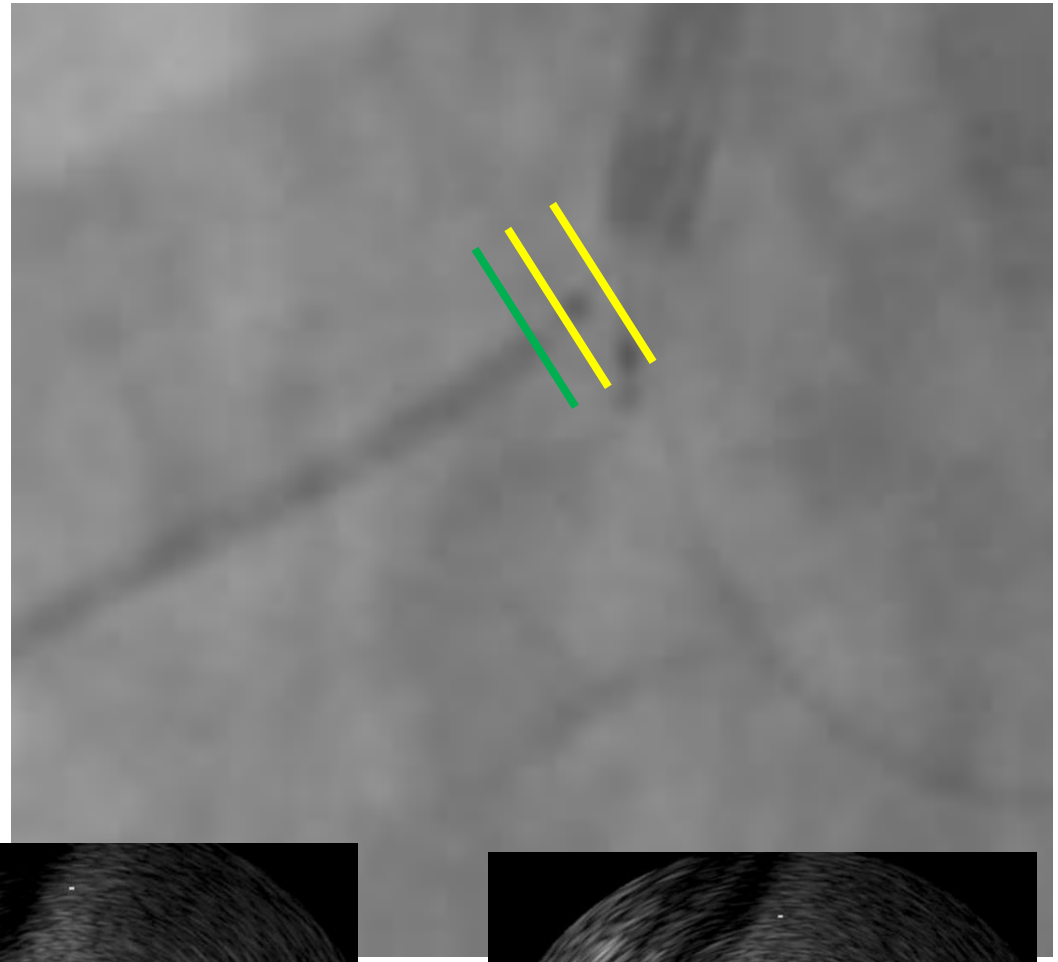
Case 1 RCA CTO

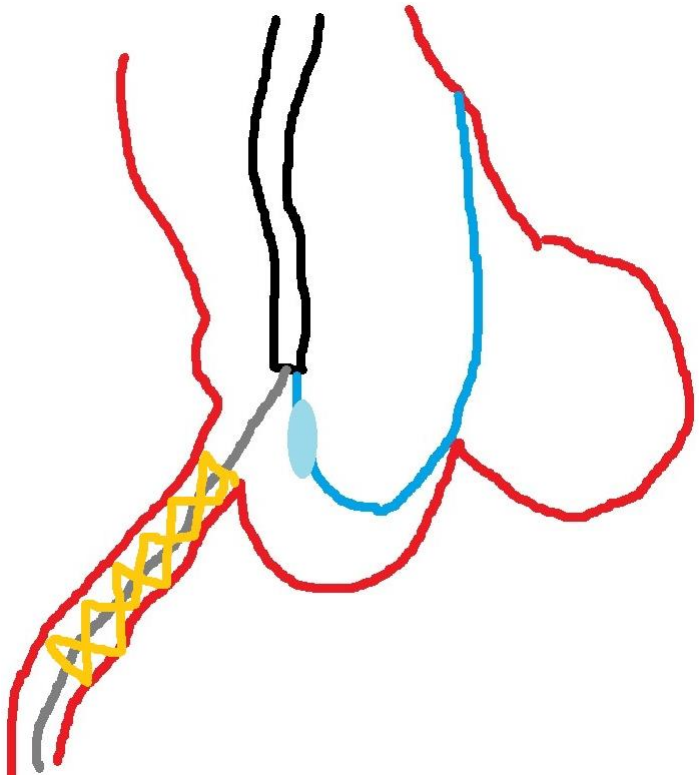


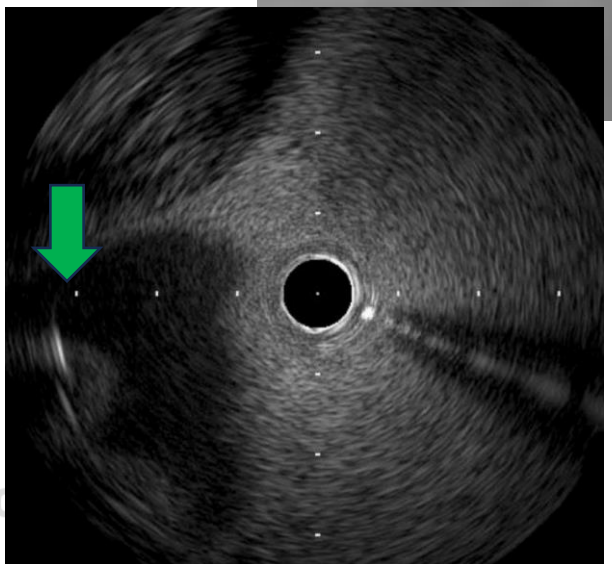
Stent was not ostial enough

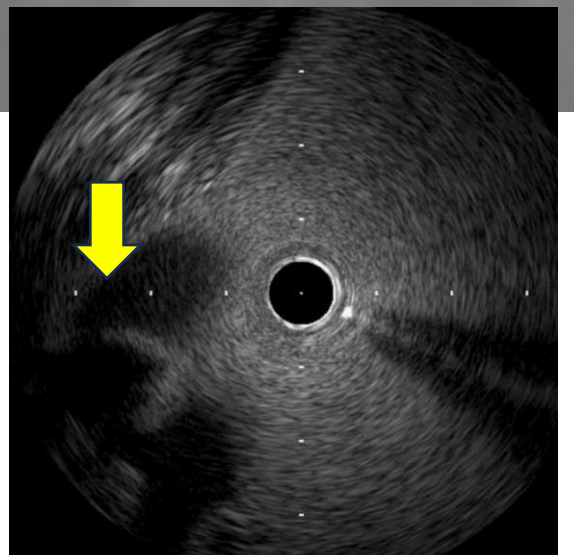


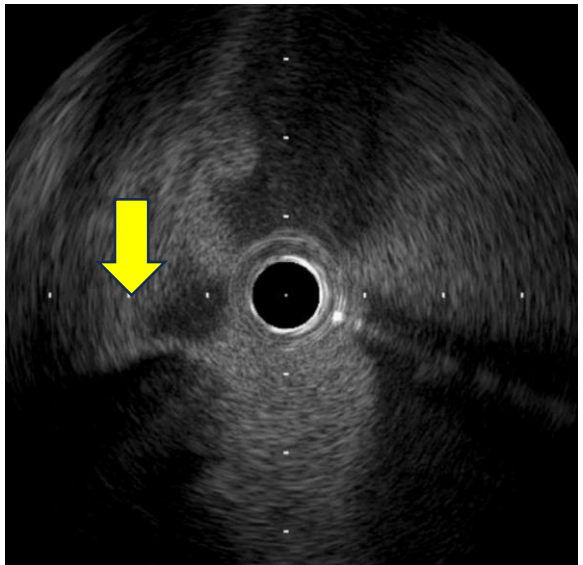




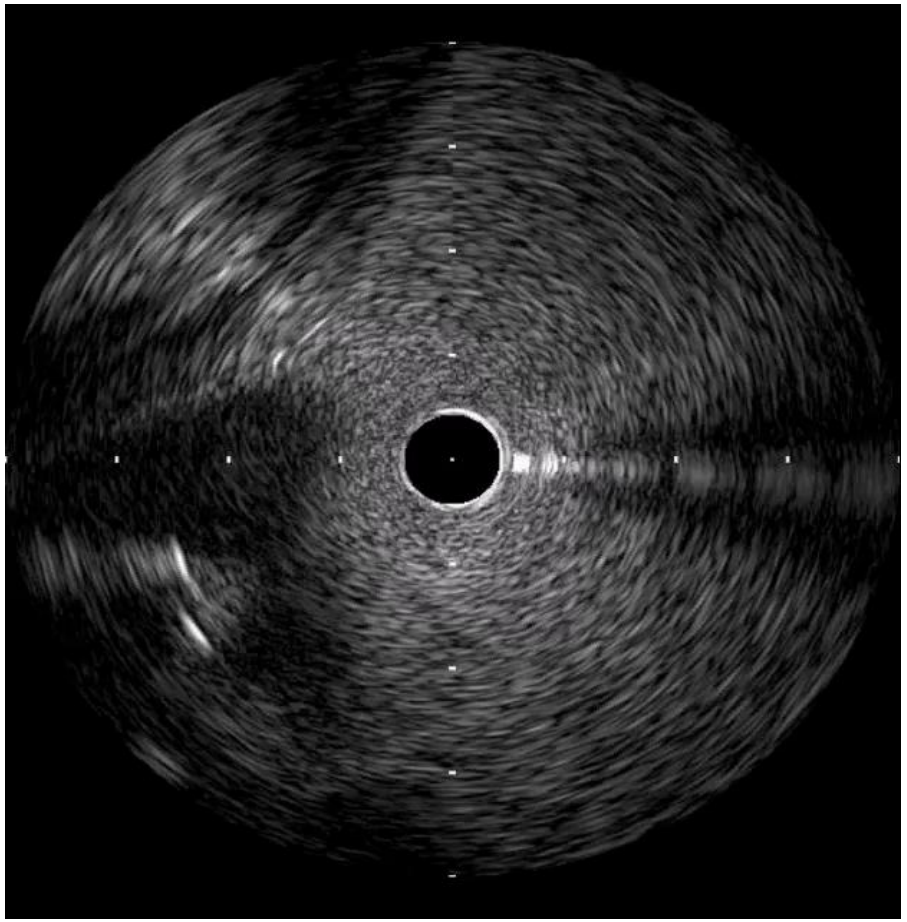


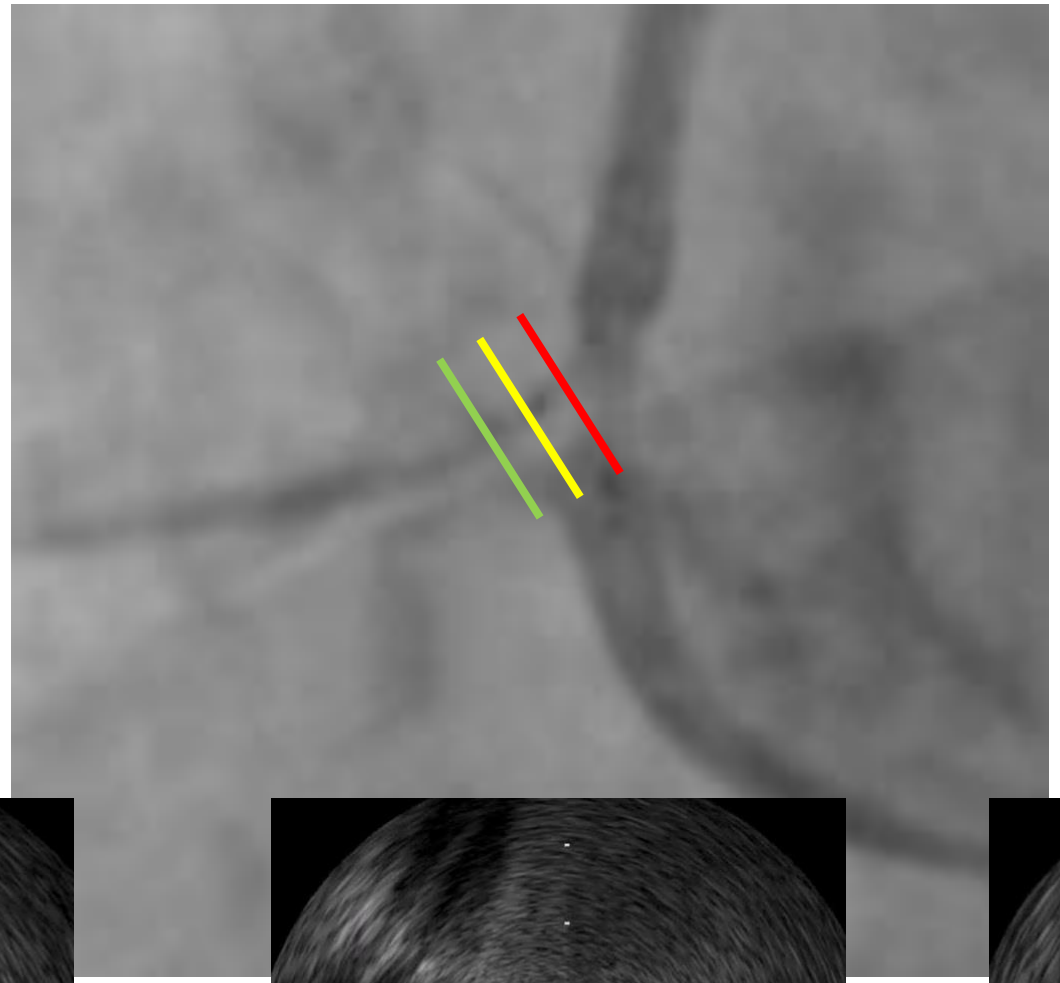


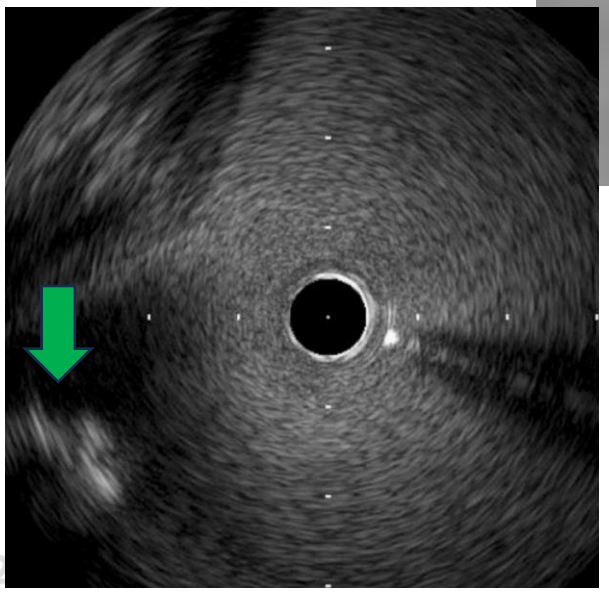


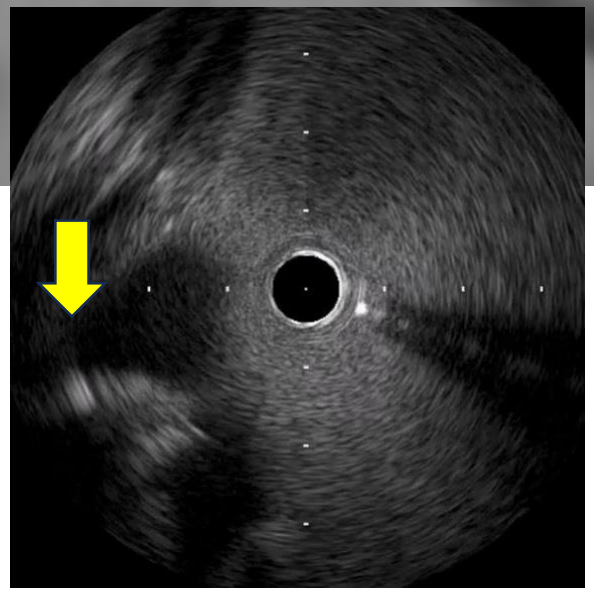


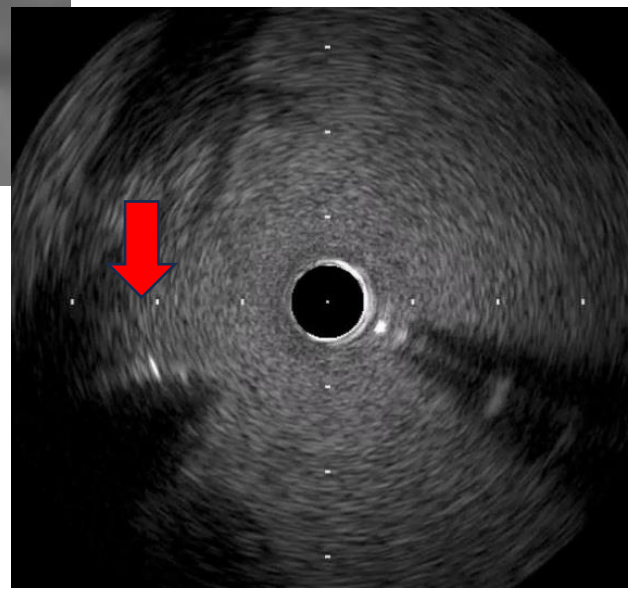
Stent pulling back

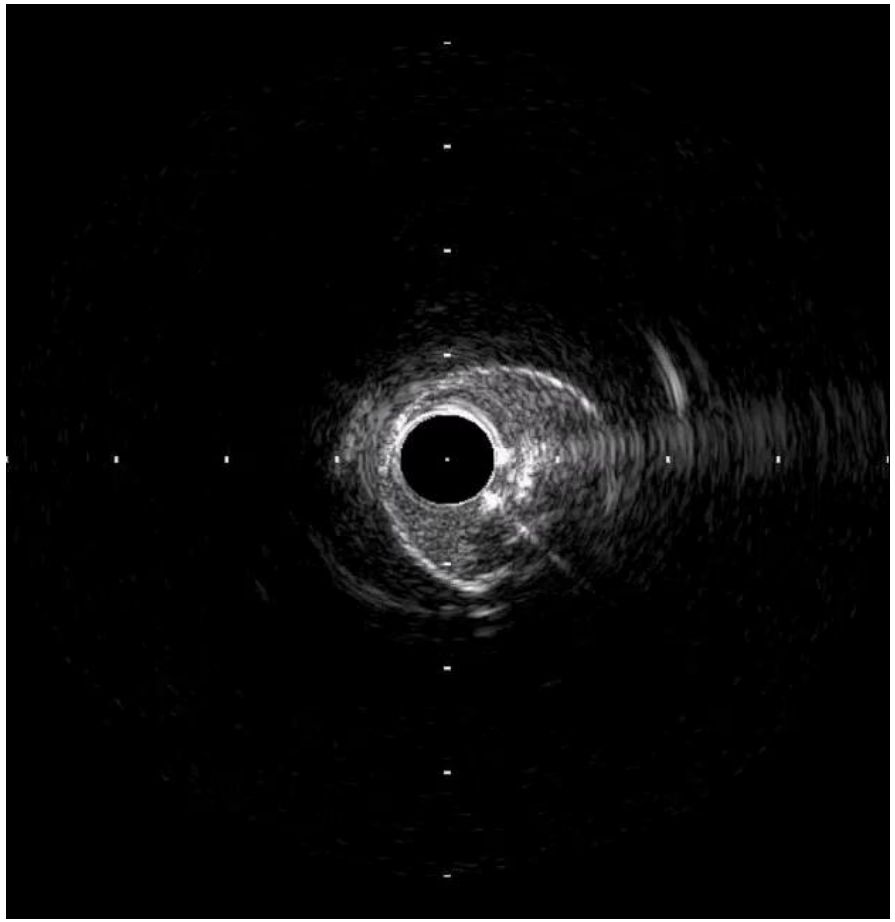




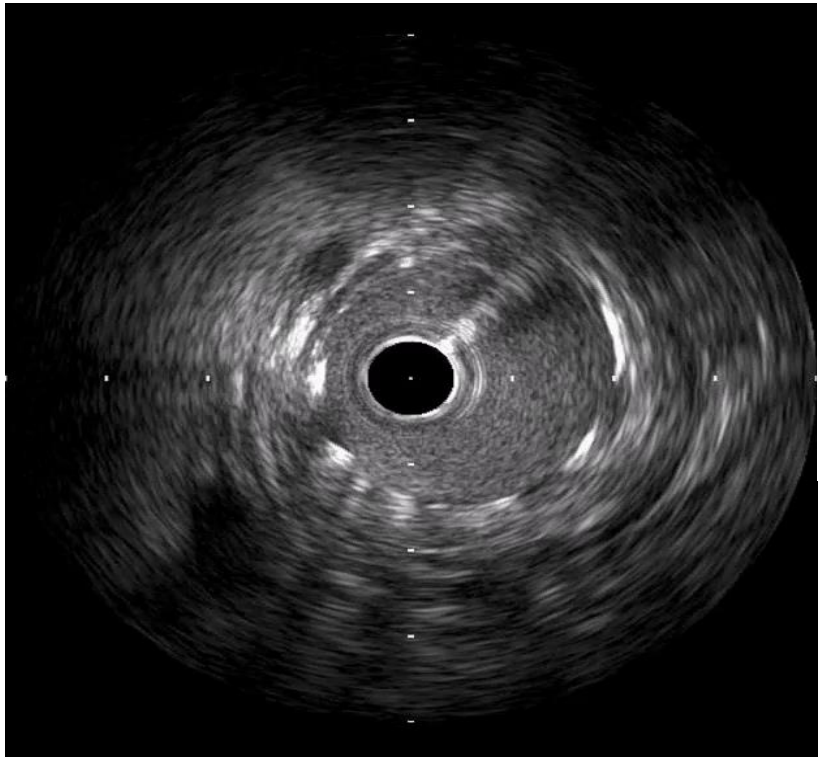


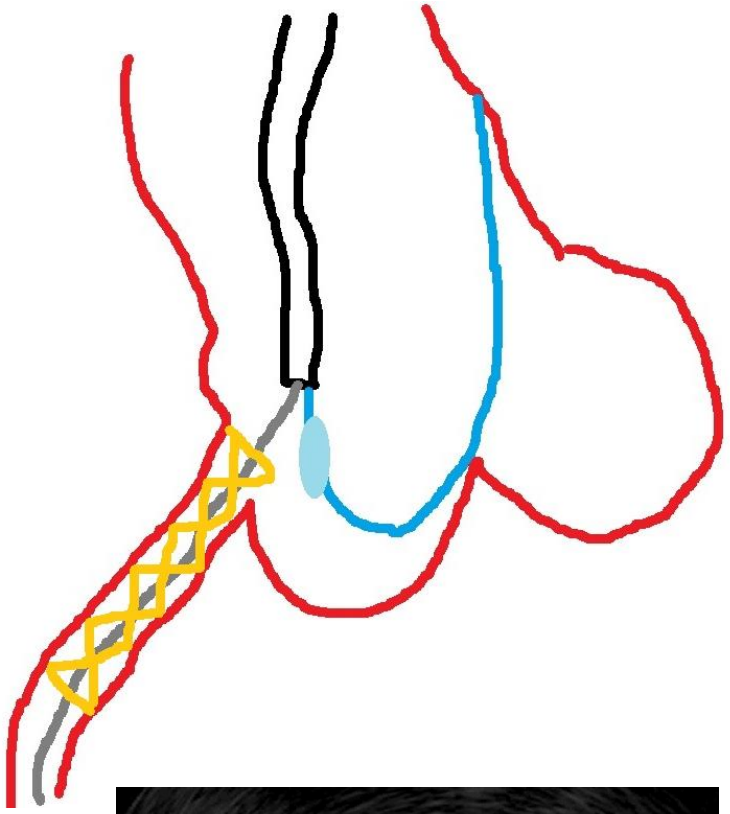


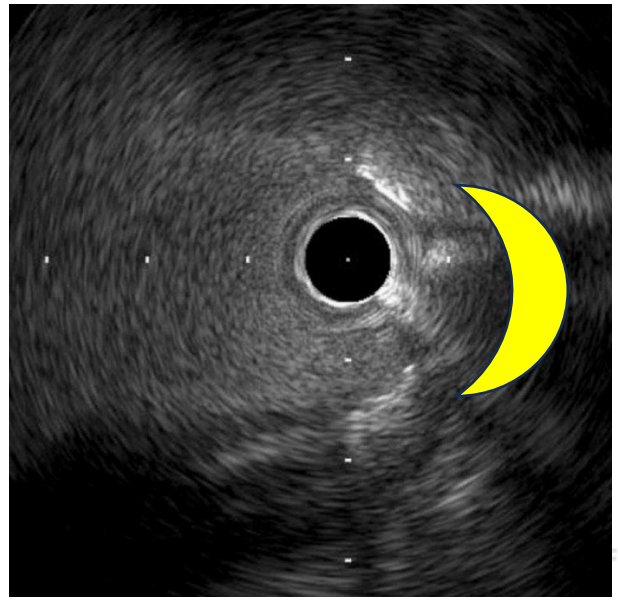




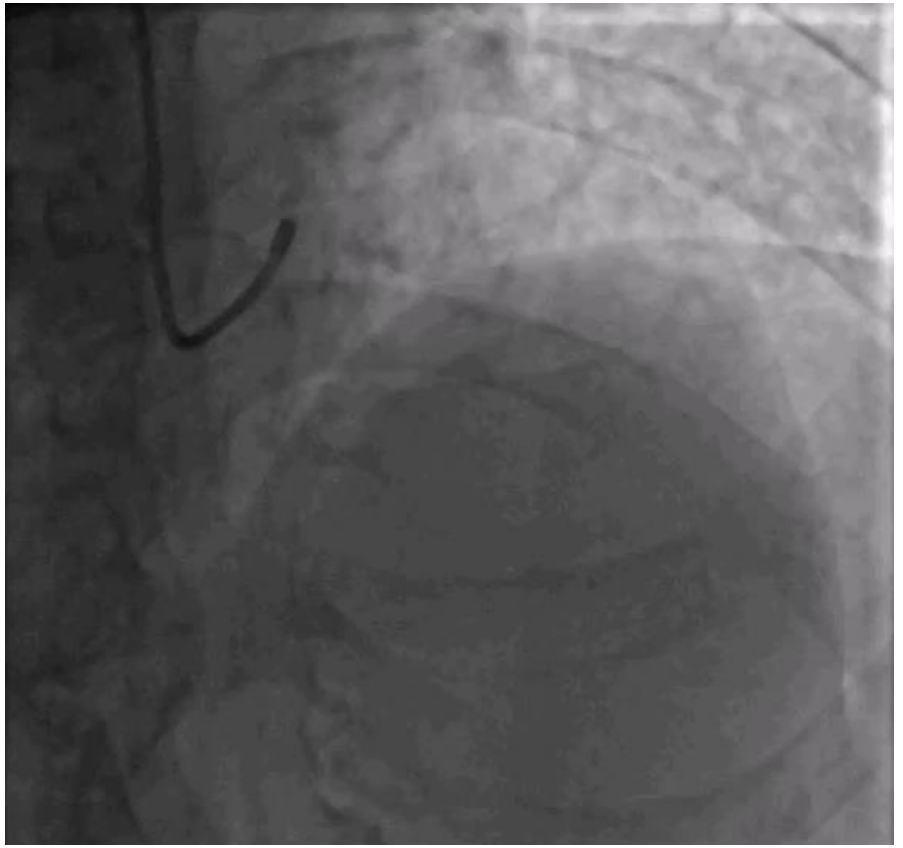
Half Moon Sign from IVUS



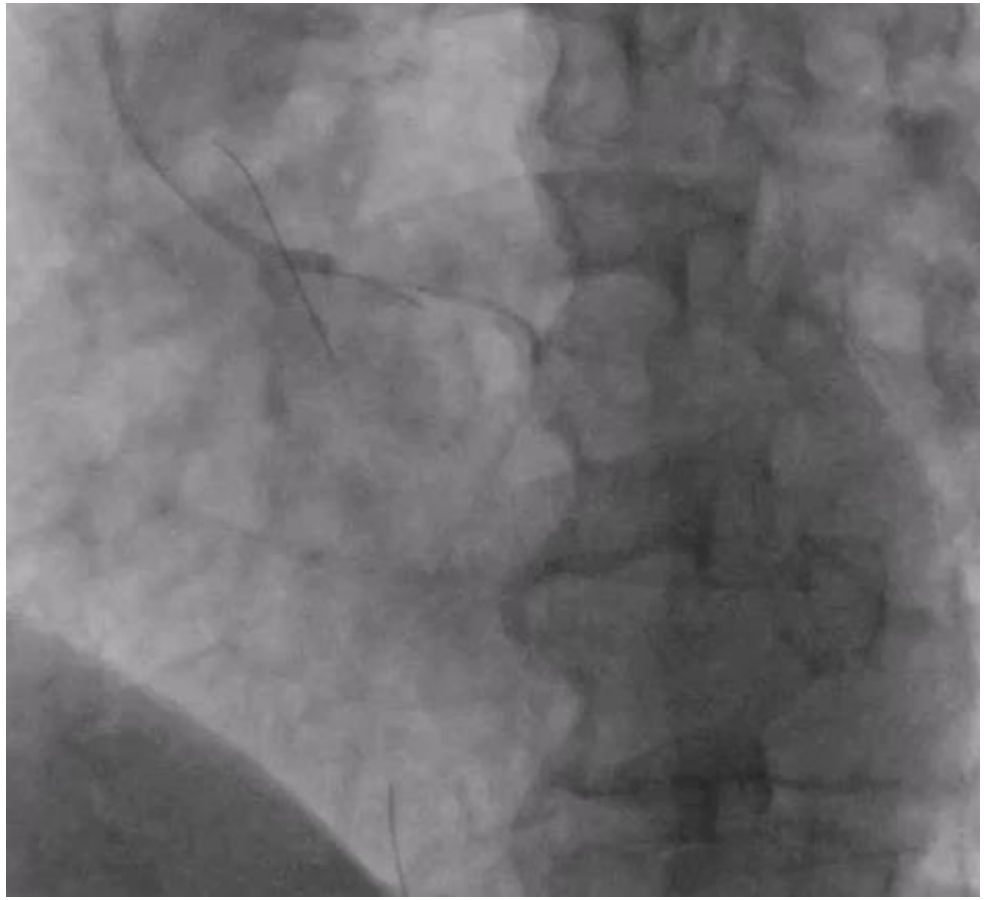


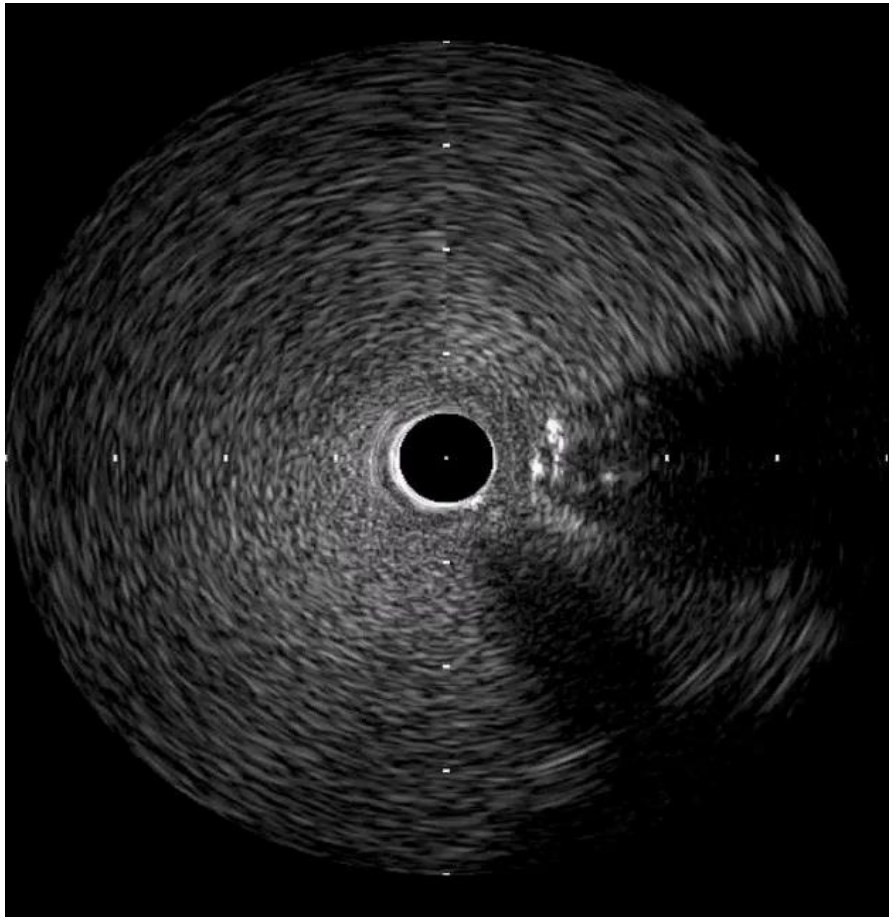


Case 2 ostial LMN disease

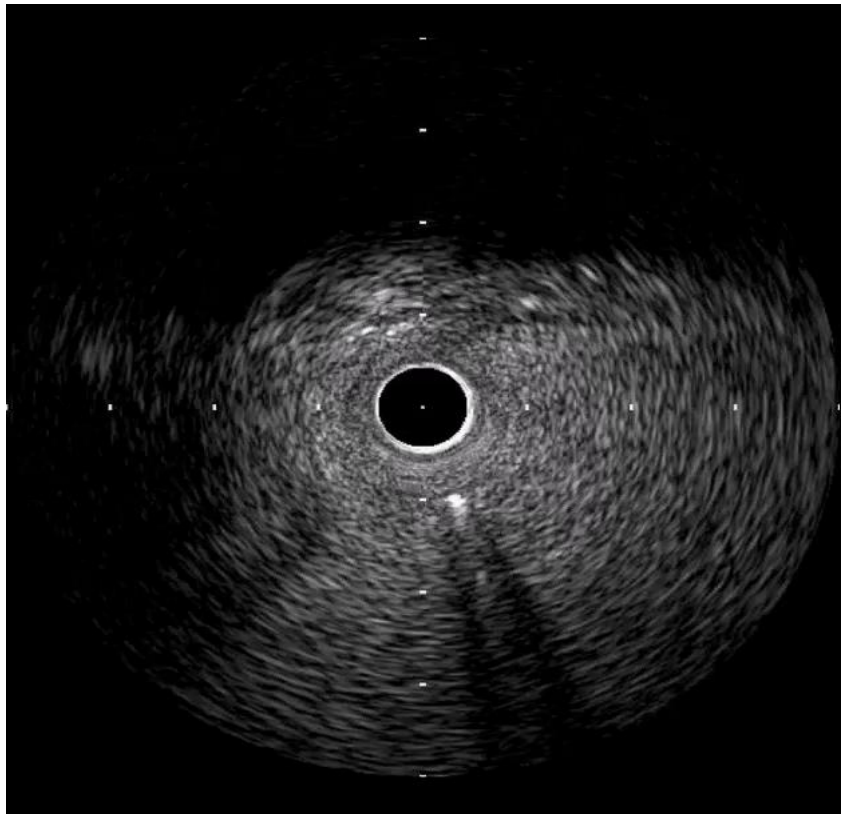


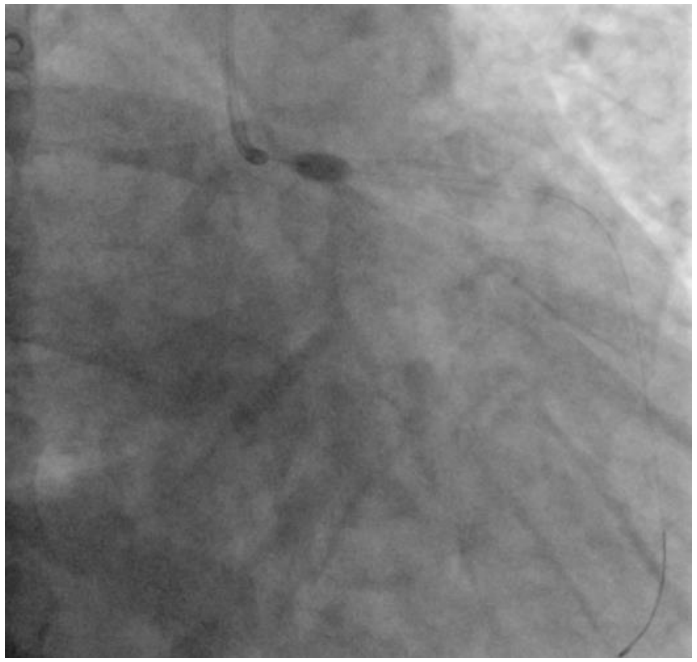
7Fr Guiding, simultaneous IVUS guided ostial stenting

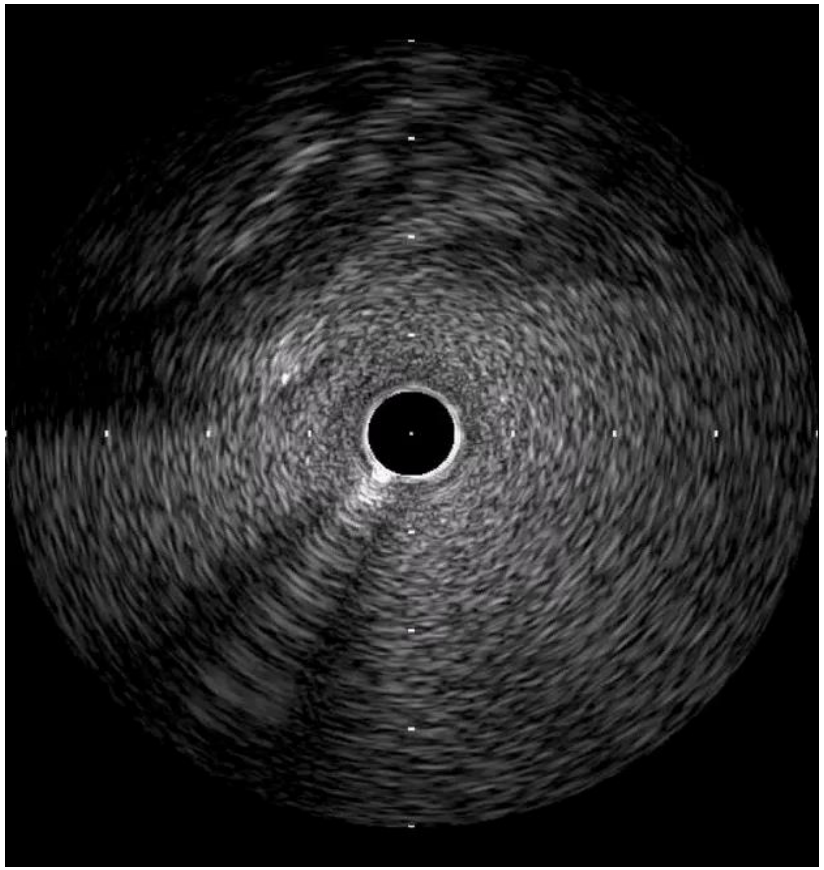




IVUS to confirm true ostium placement before POT

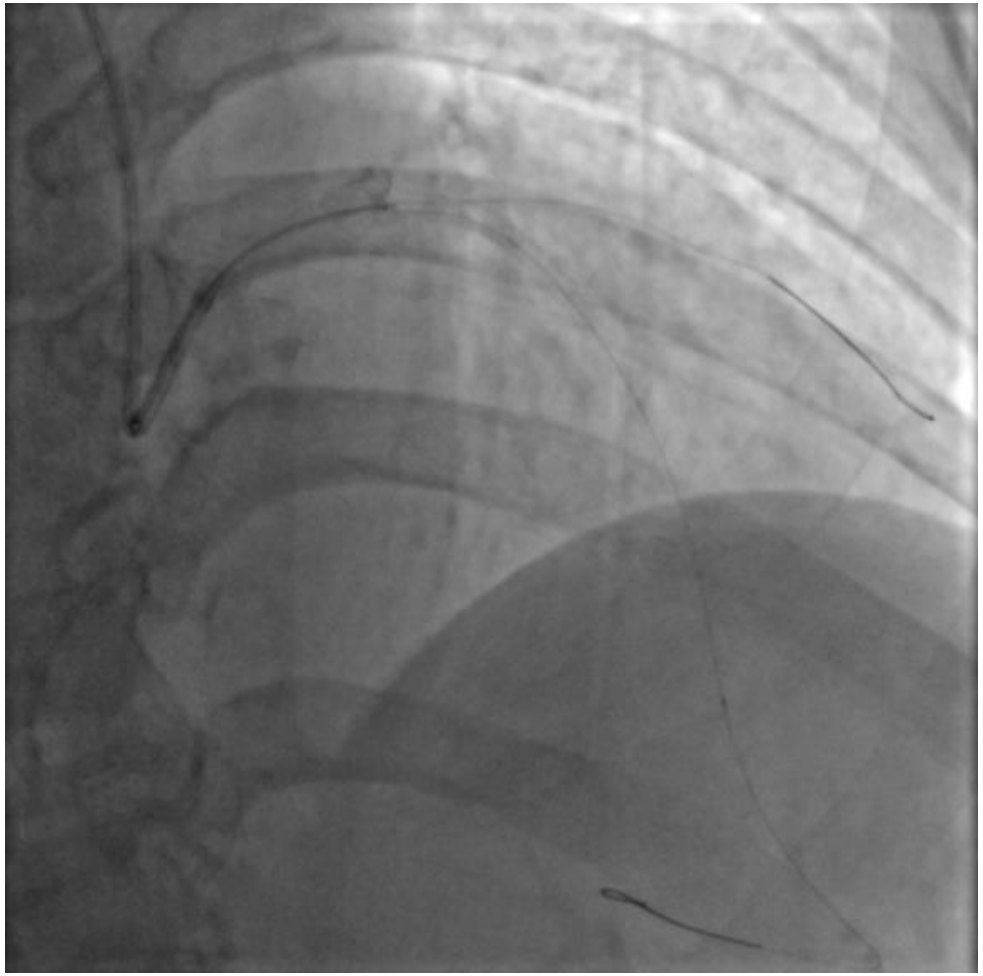


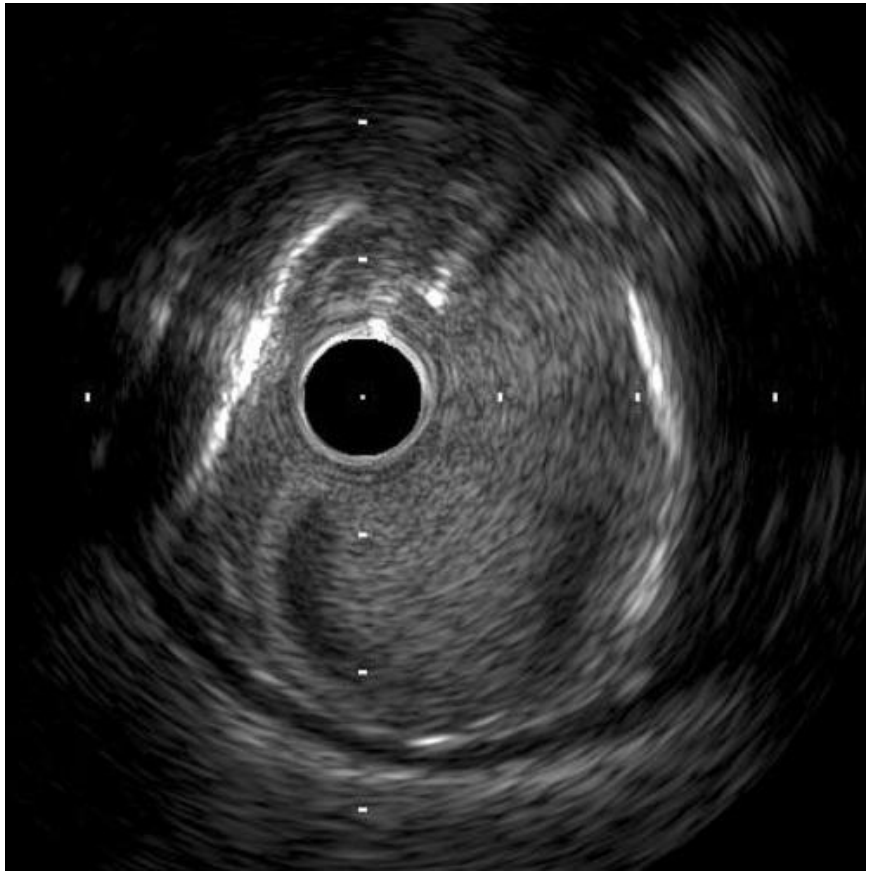




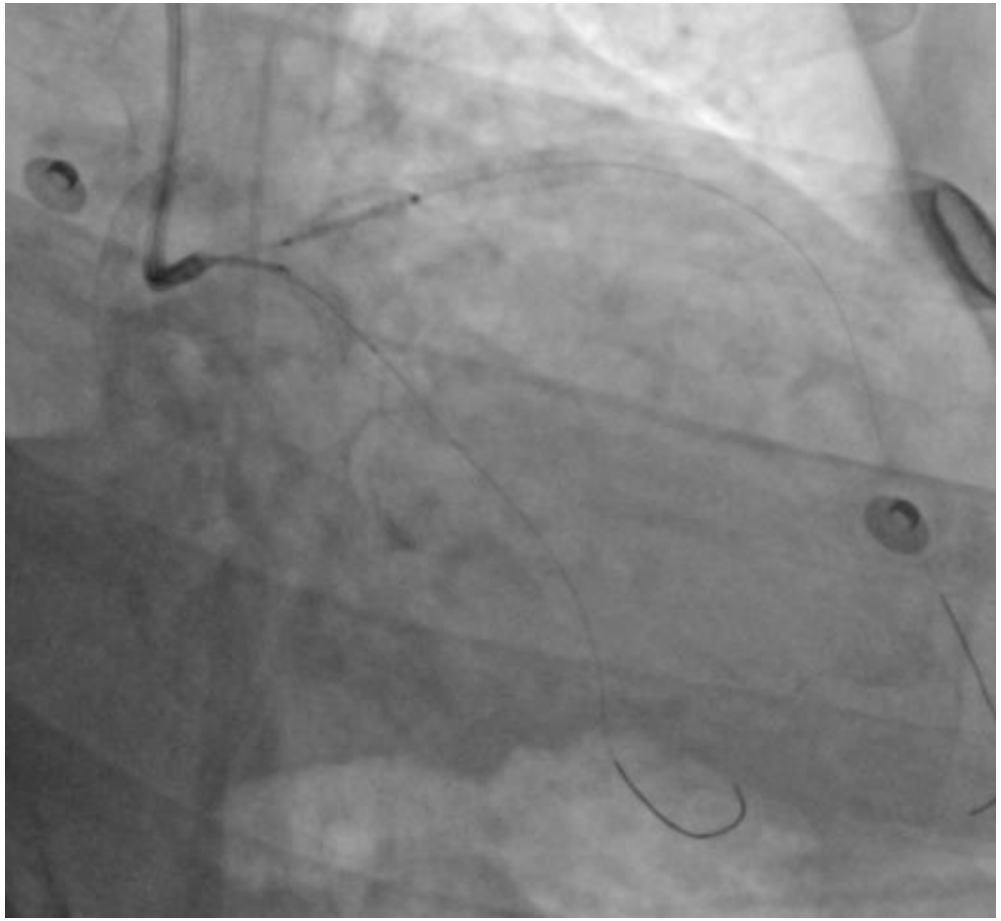
Case 3 ostial LAD lesion

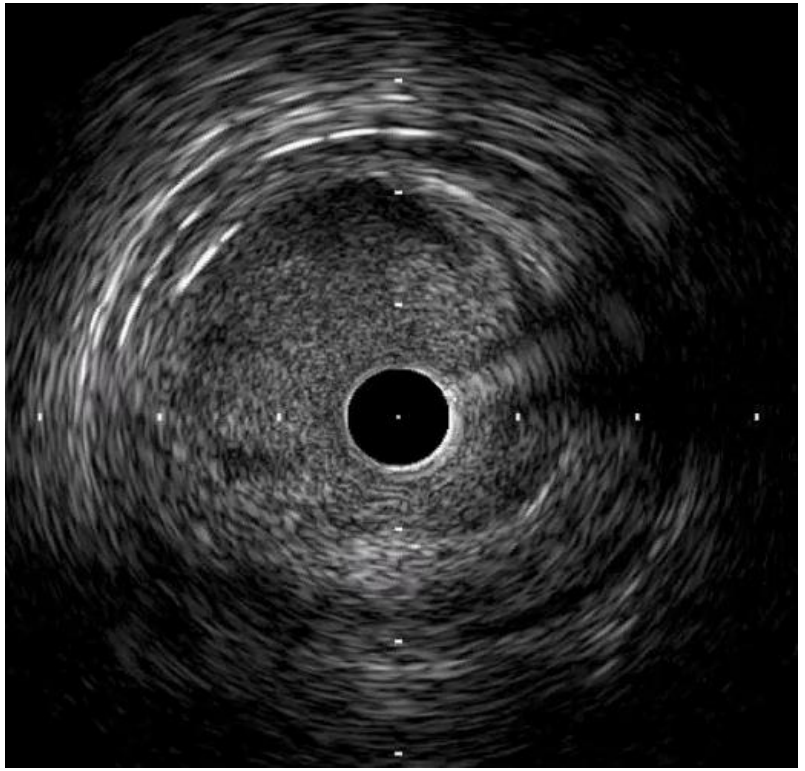
After wiring and POBA



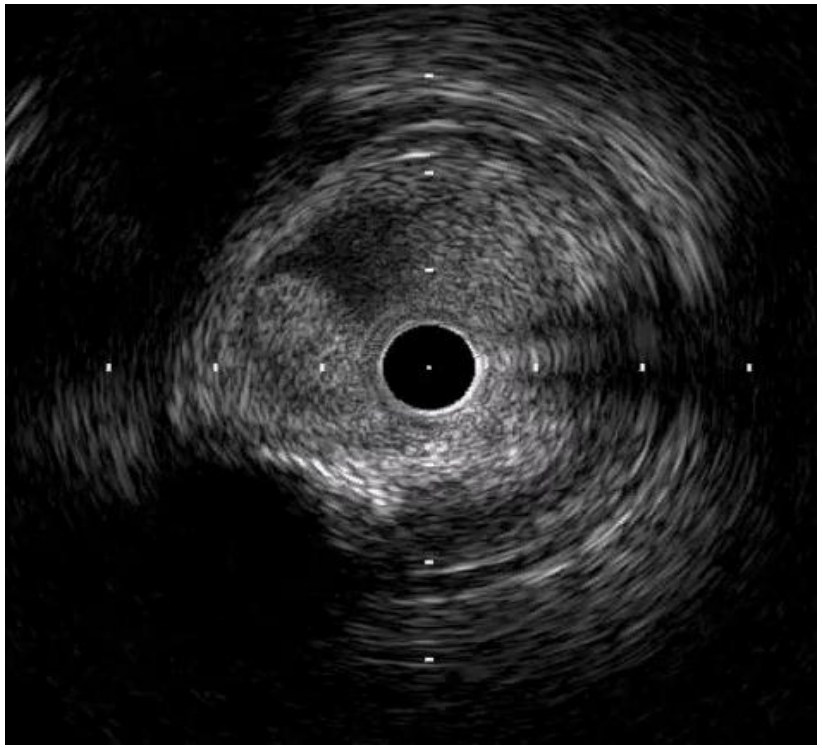


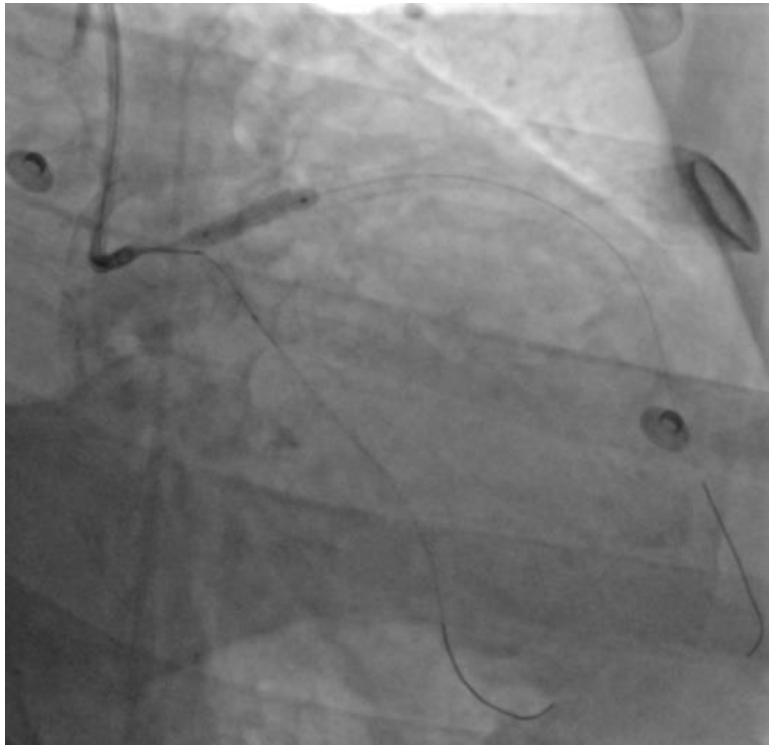
Ostial LAD disease



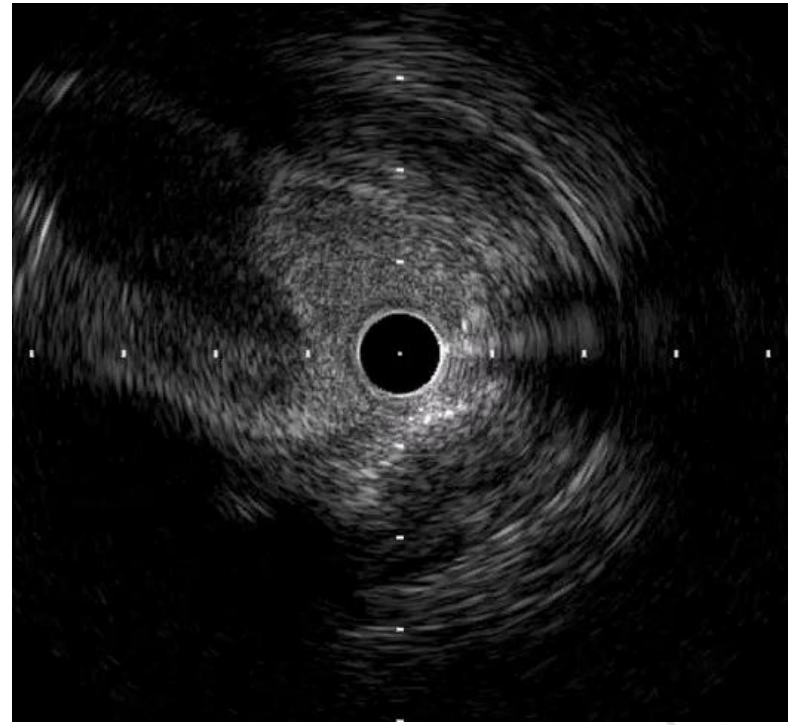


Stent too far out



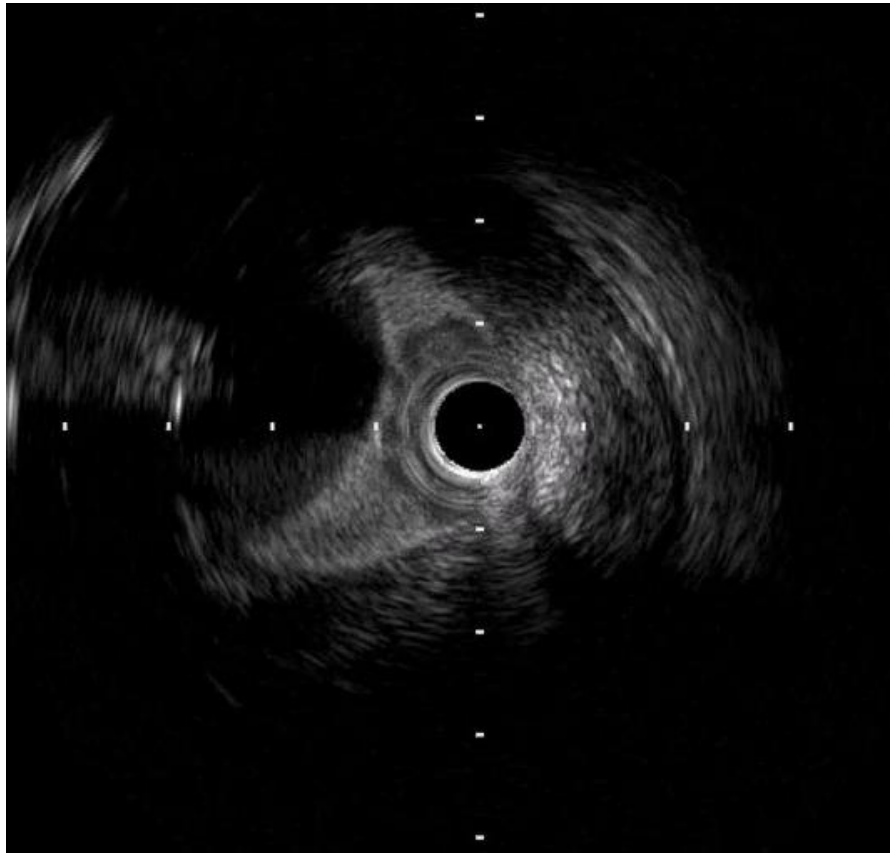


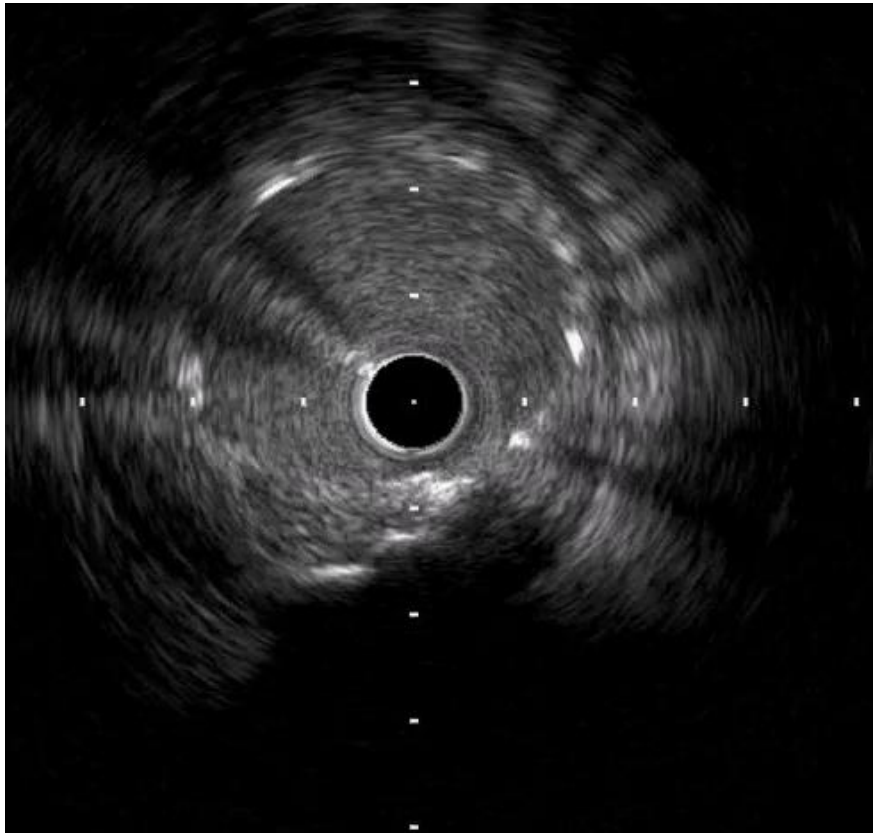
Stent deployment



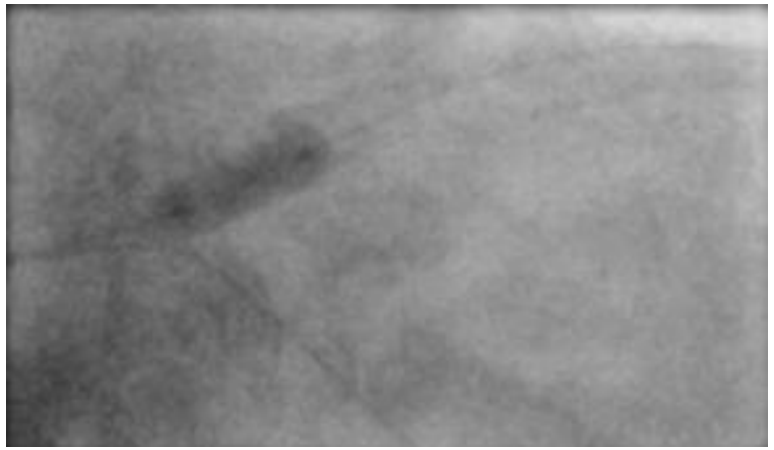
Stent right position

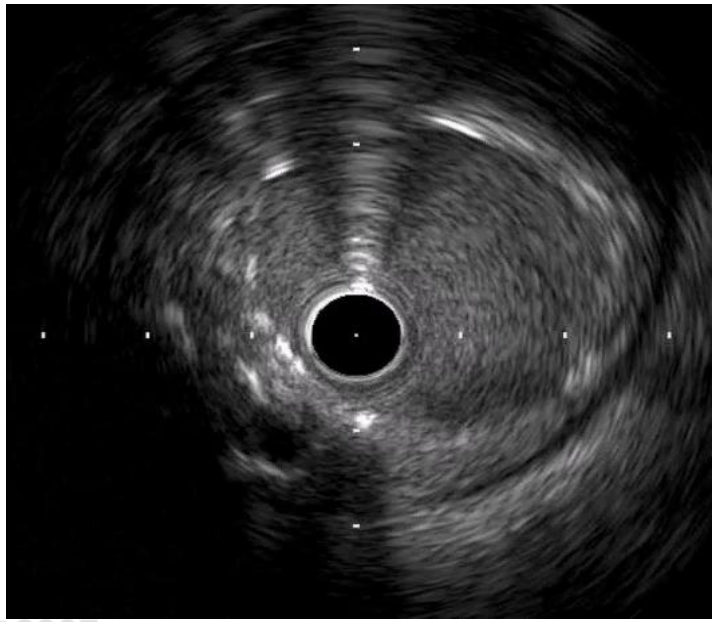
Stent at the right position without covering lCX ostia

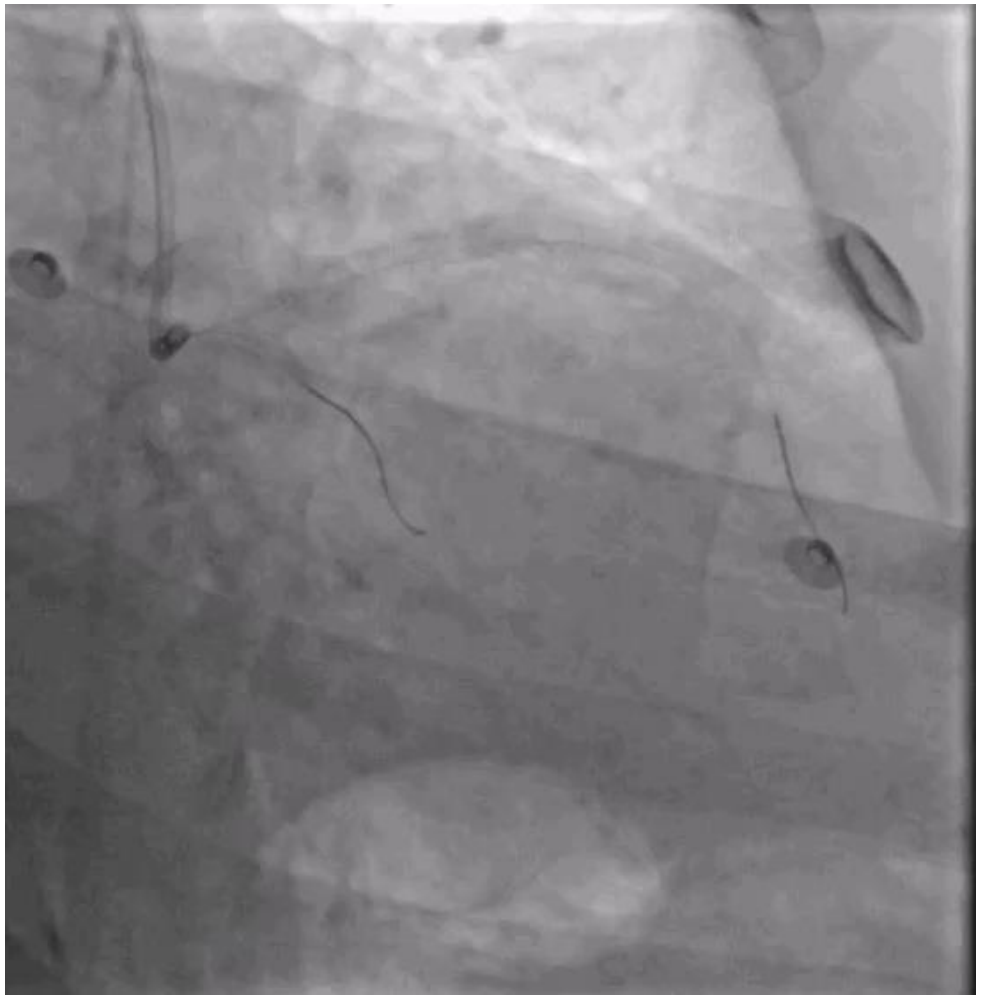


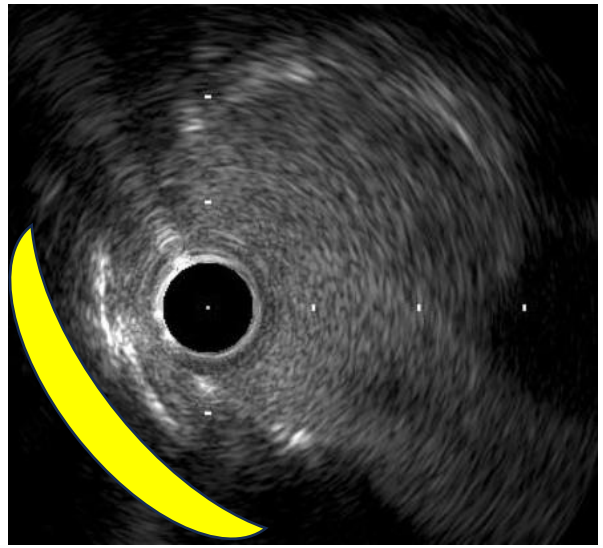


After POT and final result









Conclusion

- Ostial stenting remain challenging by using angiogram alone
- Real Time IVUS guided stenting is feasible, reproducible and accurate
- It help to reduce contrast by doing angio guided alone
- Know your IVUS and compatibility
- Practice, practice and more practice !!


THANK YOU
Queen Elizabeth Hospital
伊利沙伯醫院