

2022 TTT - TCTAP

The use of IVUS in complex CTO PCI

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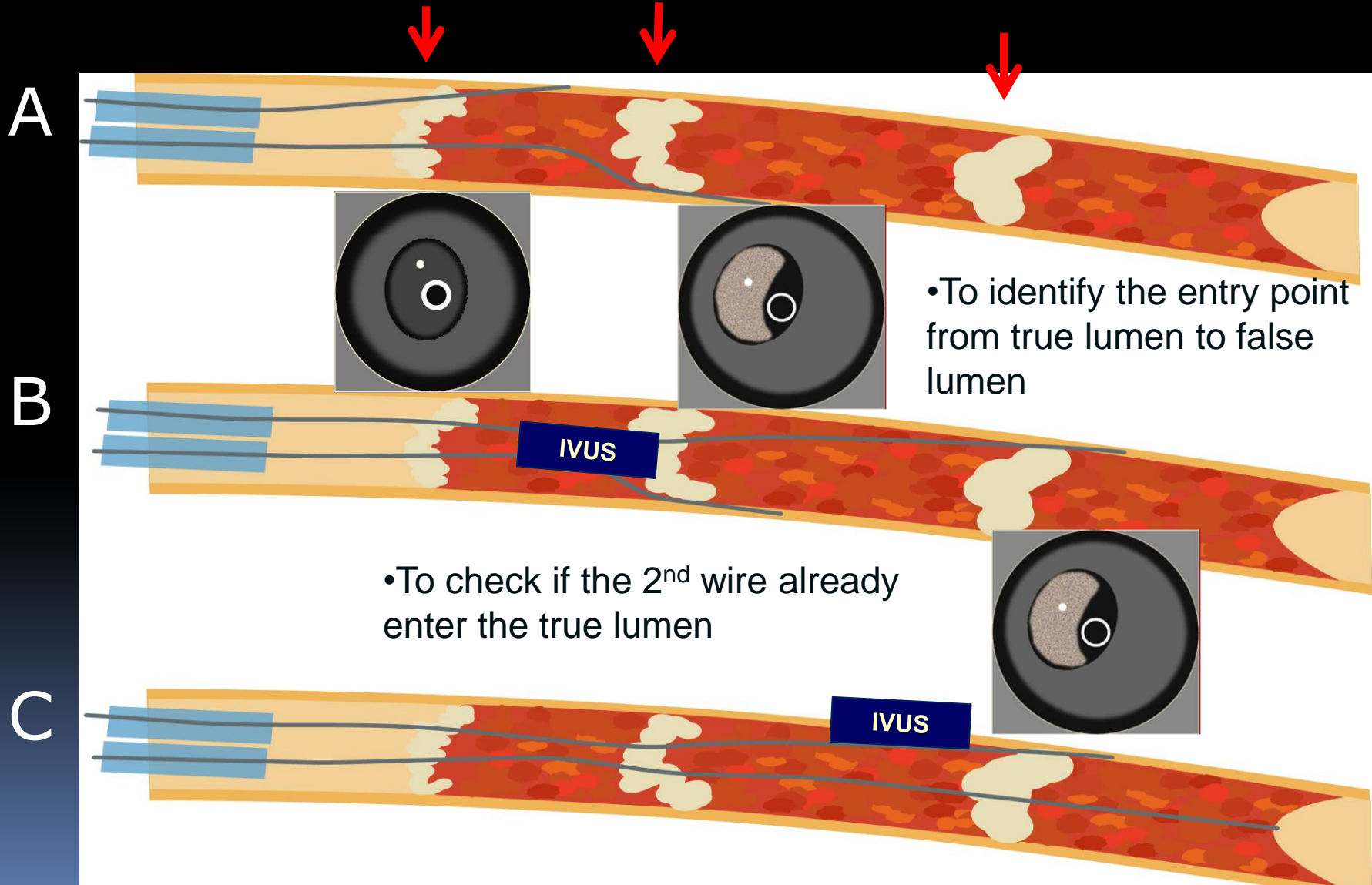
School of Medicine

National Yang-Ming University

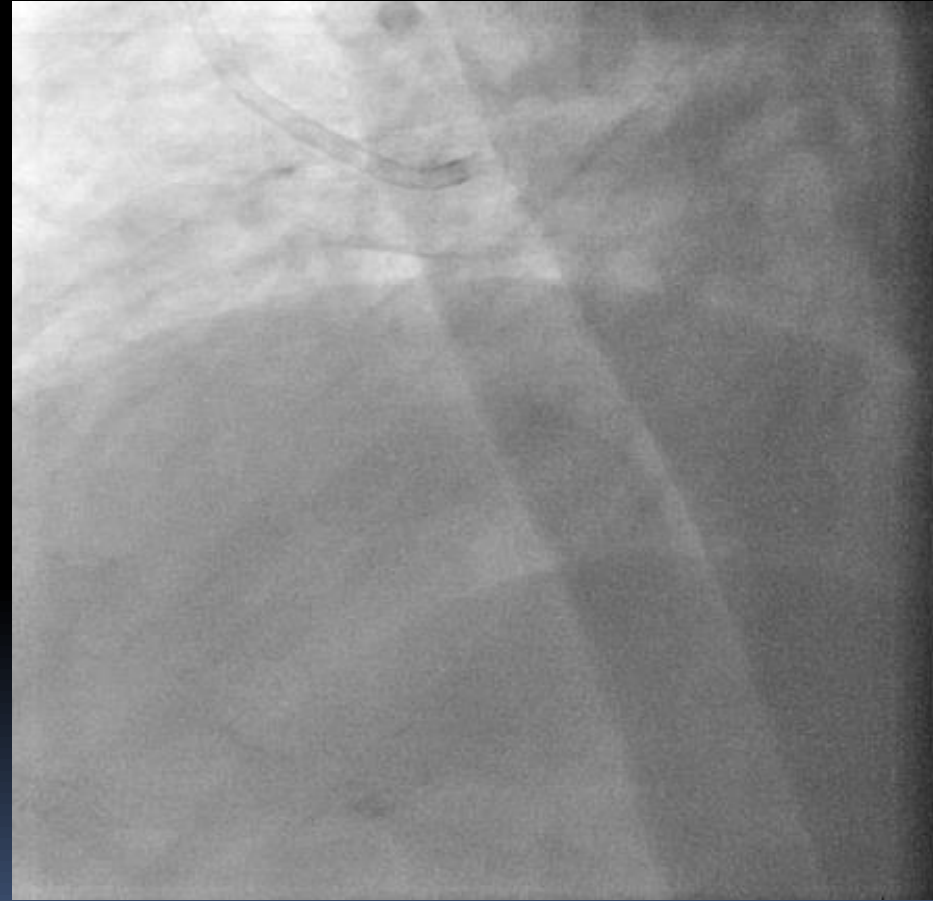


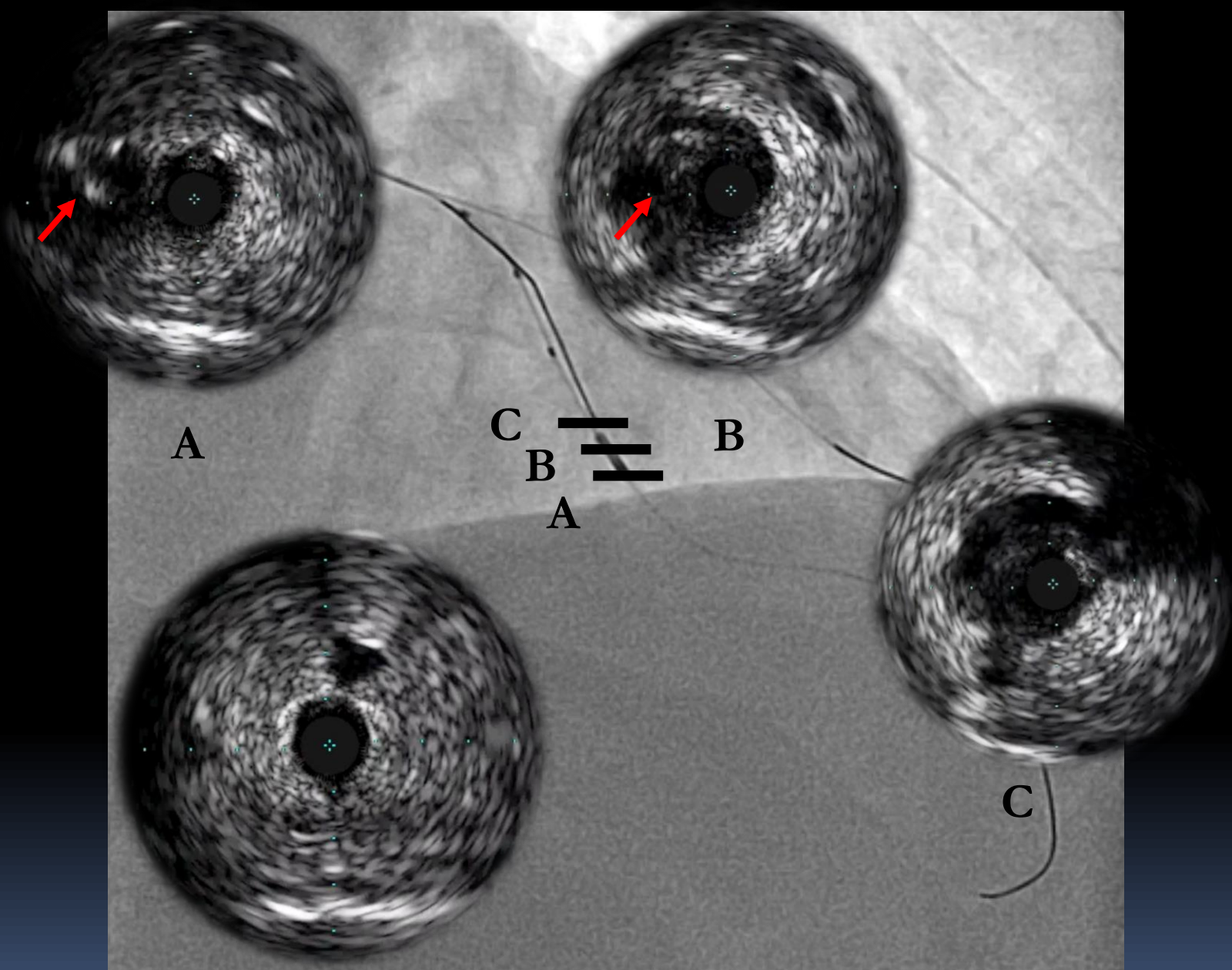
Using IVUS in complex CTO PCI

- To check where the IVUS/wire is
- To search where the true lumen is



51 Y/O M, 3rd attempt of LAD CTO
No suitable retrograde collaterals



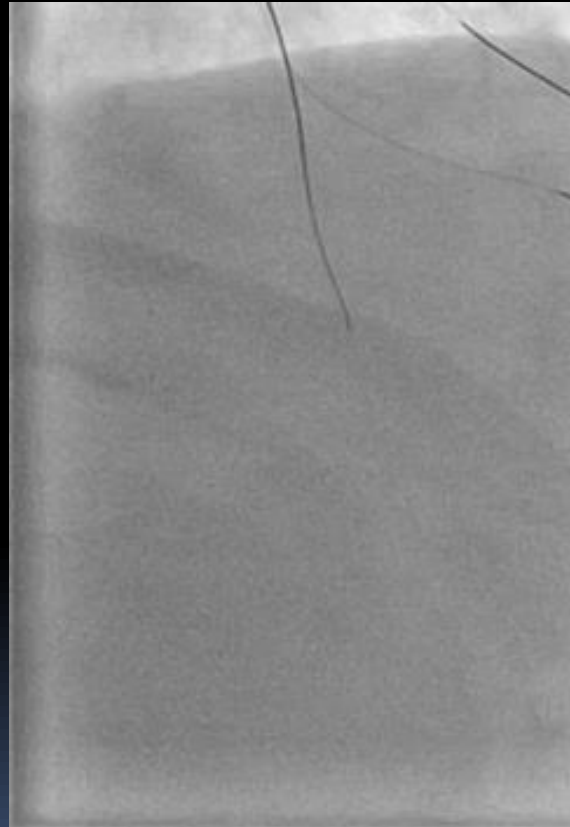
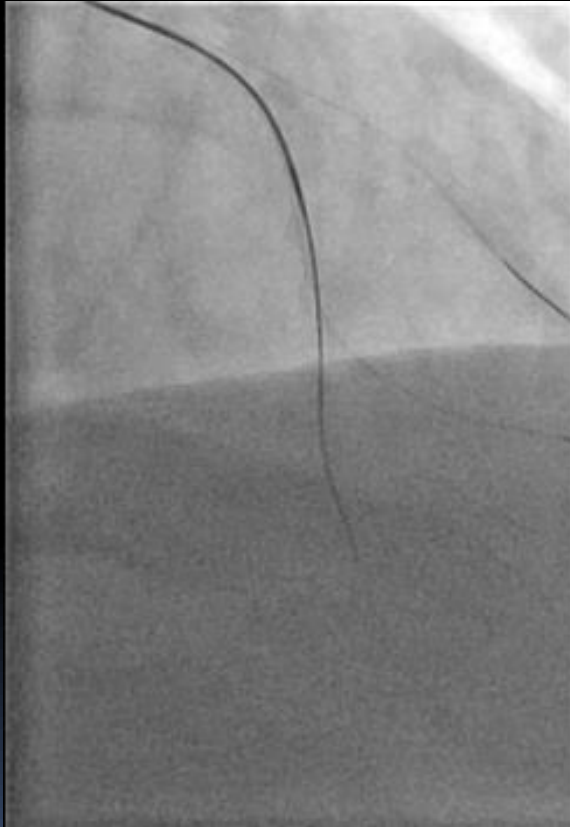


CP-12 enter the D2 branch
Searching distal LAD true lumen by IVUS

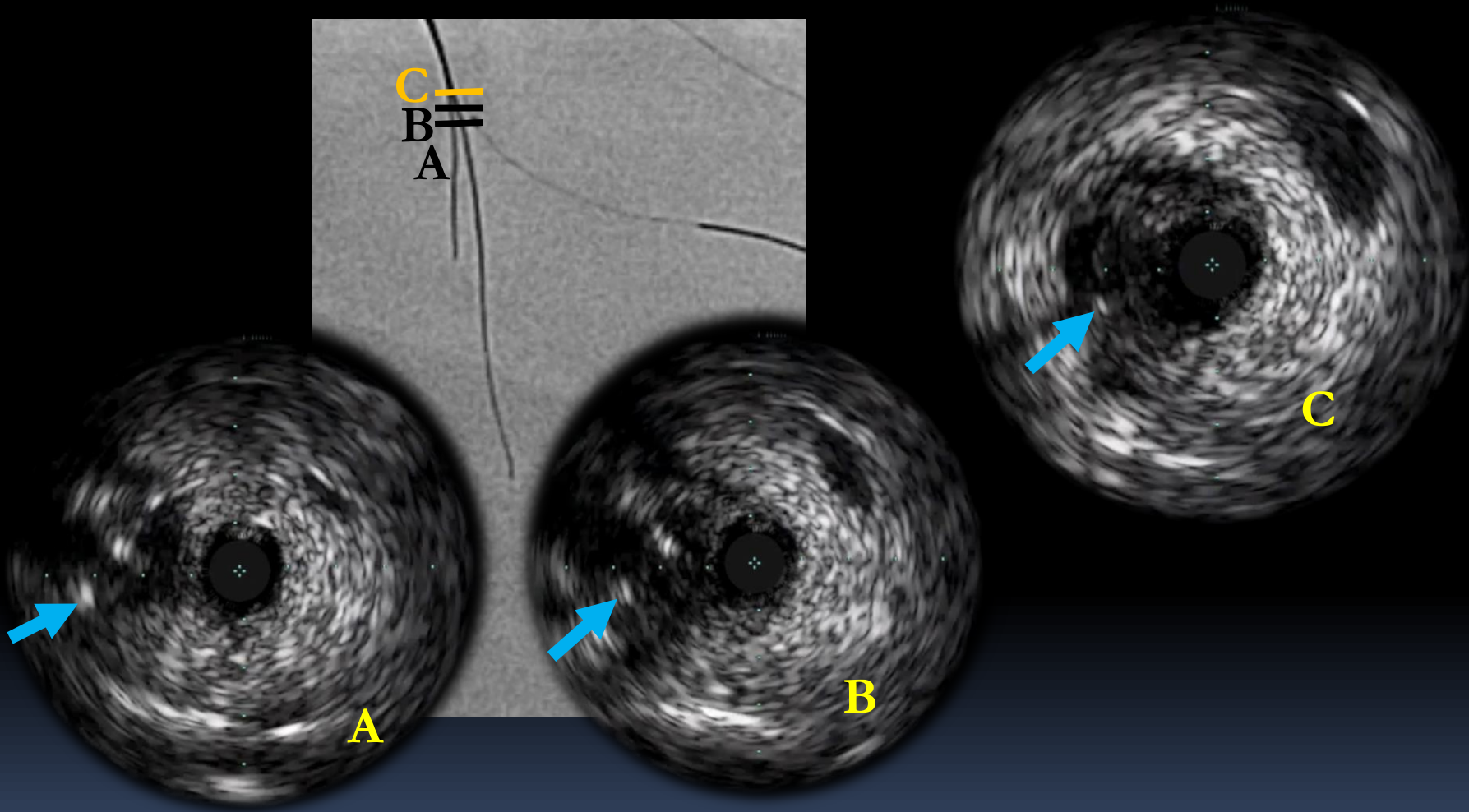


IVUS guide re-entry

2nd attempt – try for 1 hour, but still failed

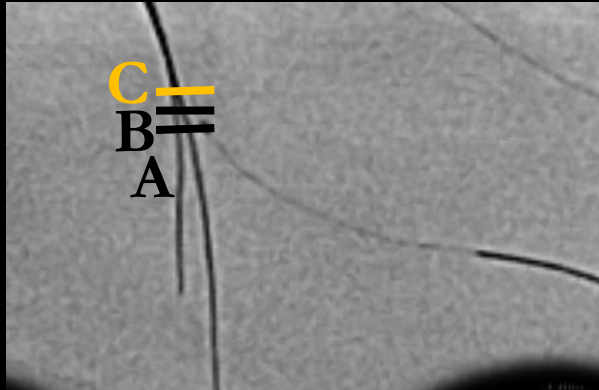


Check IVUS from D2 again

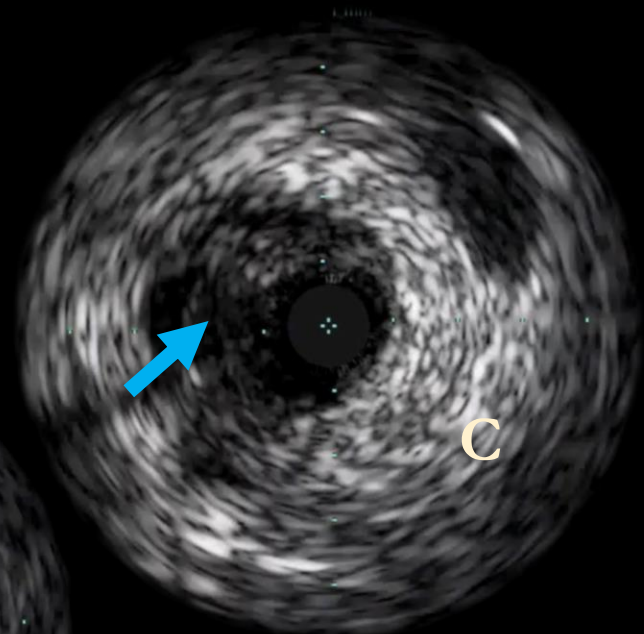
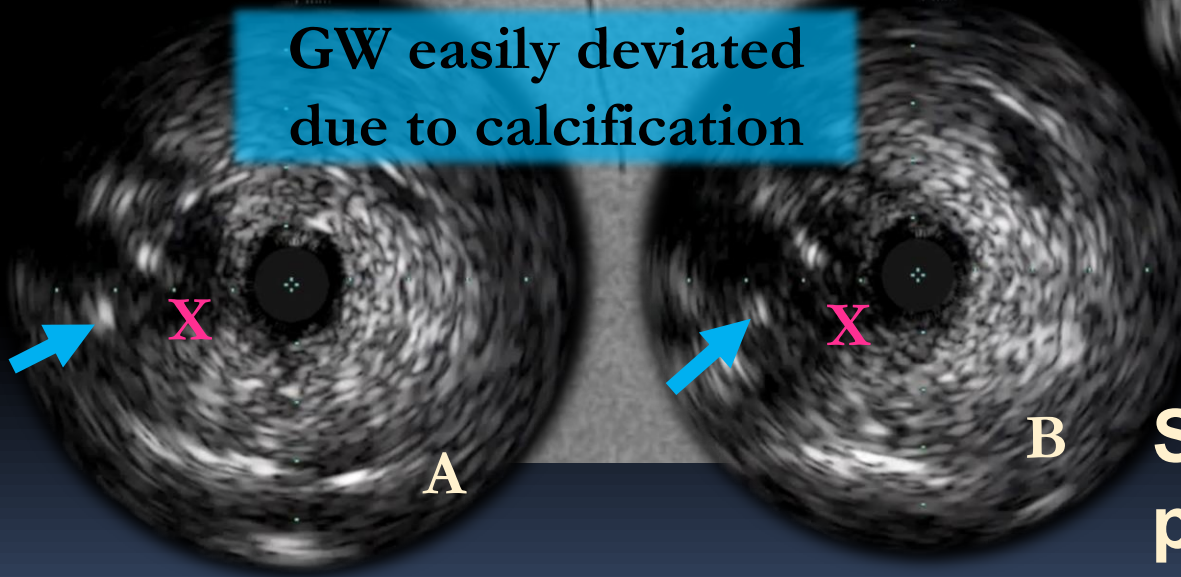


Check IVUS from D2 again

Less calcification
at higher level

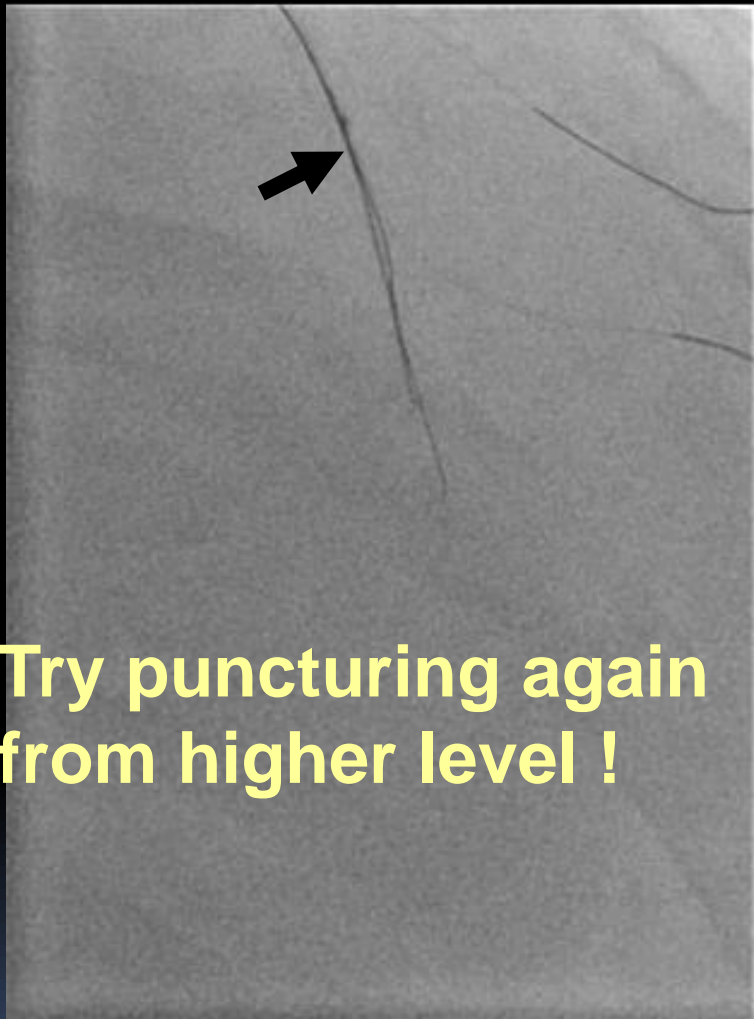


GW easily deviated
due to calcification



So we try to re-
puncture
at higher level !!!





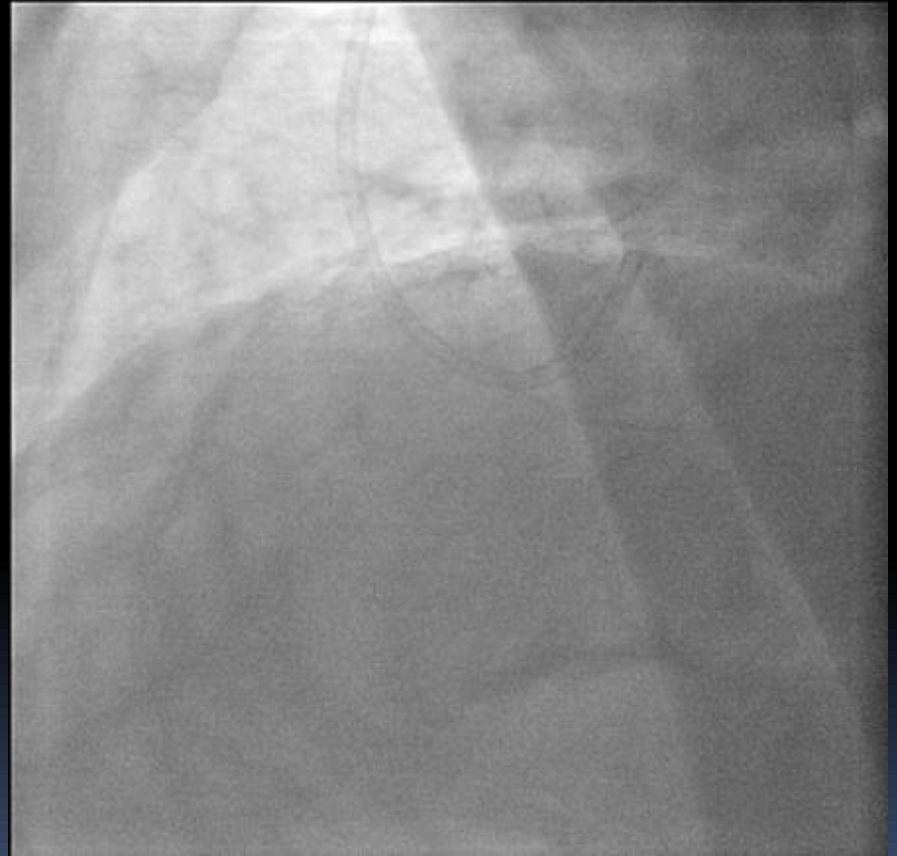
**Try puncturing again
from higher level !**



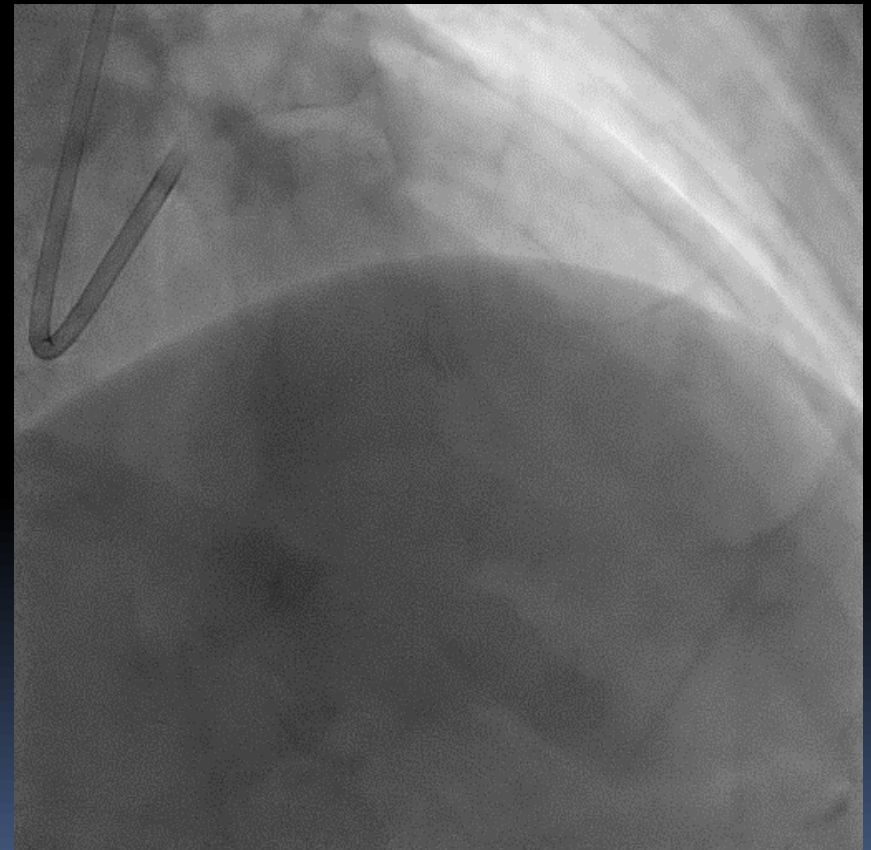
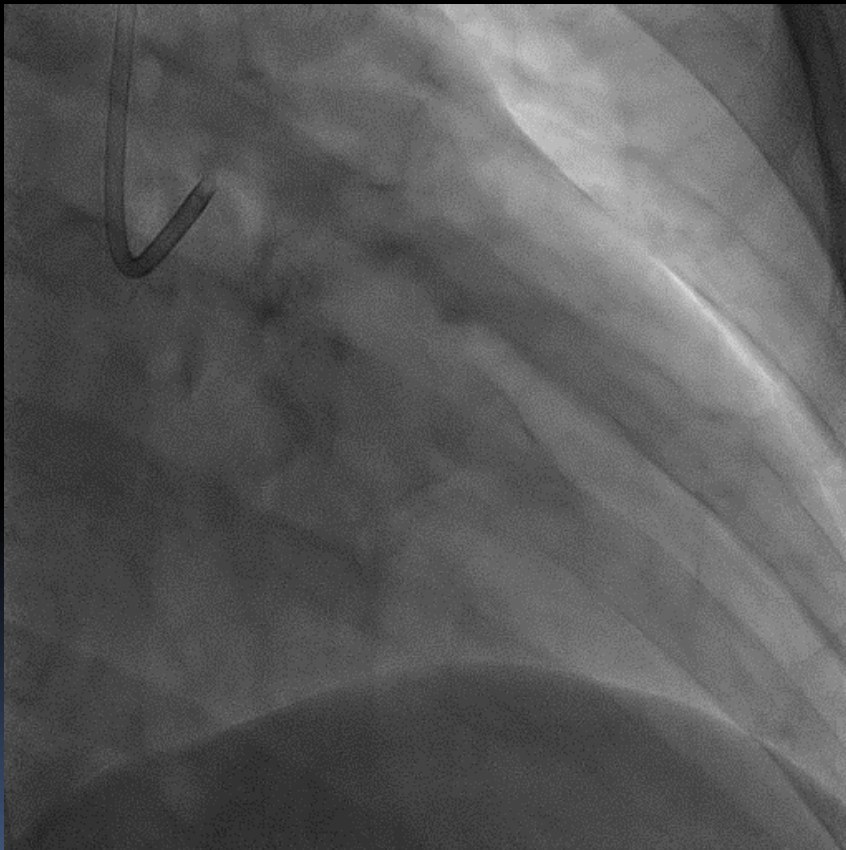
Confirm in true !

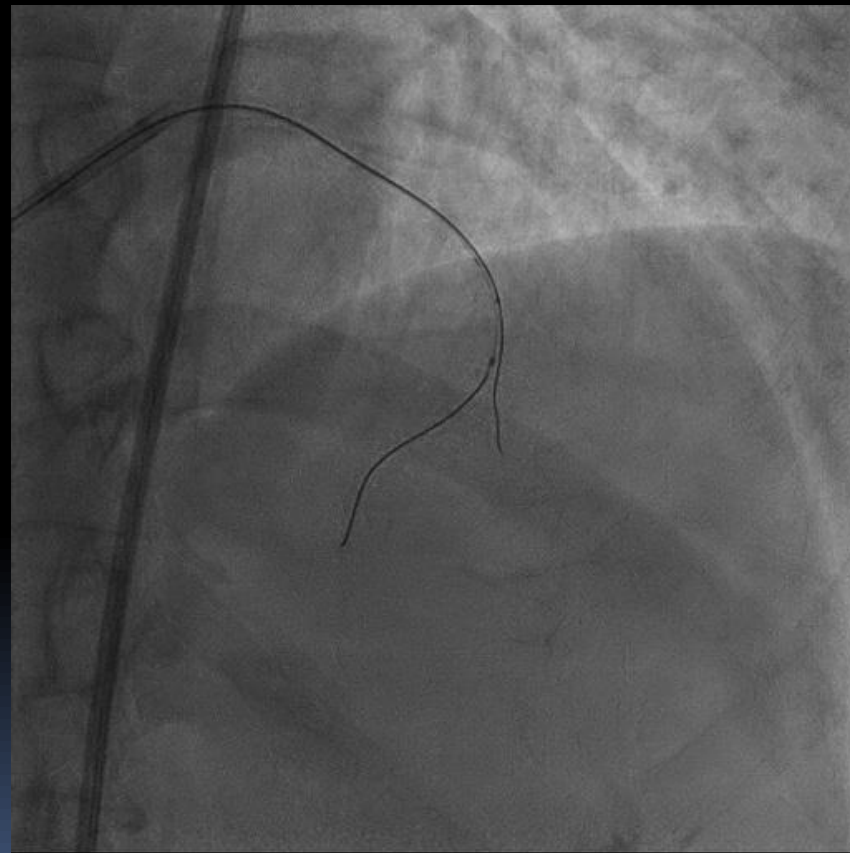
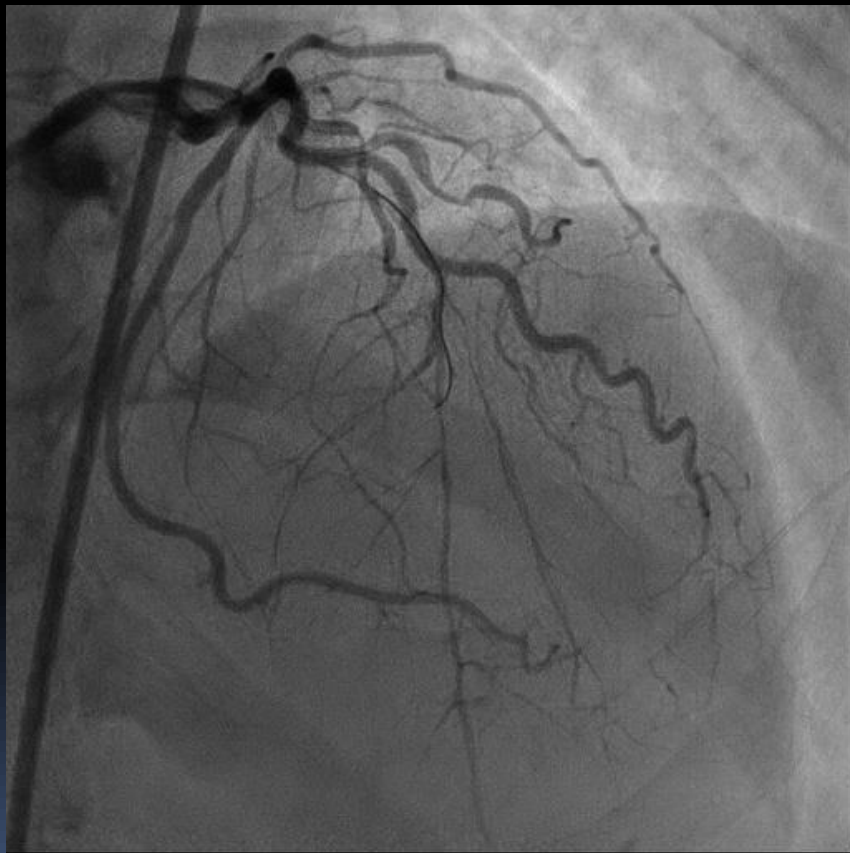


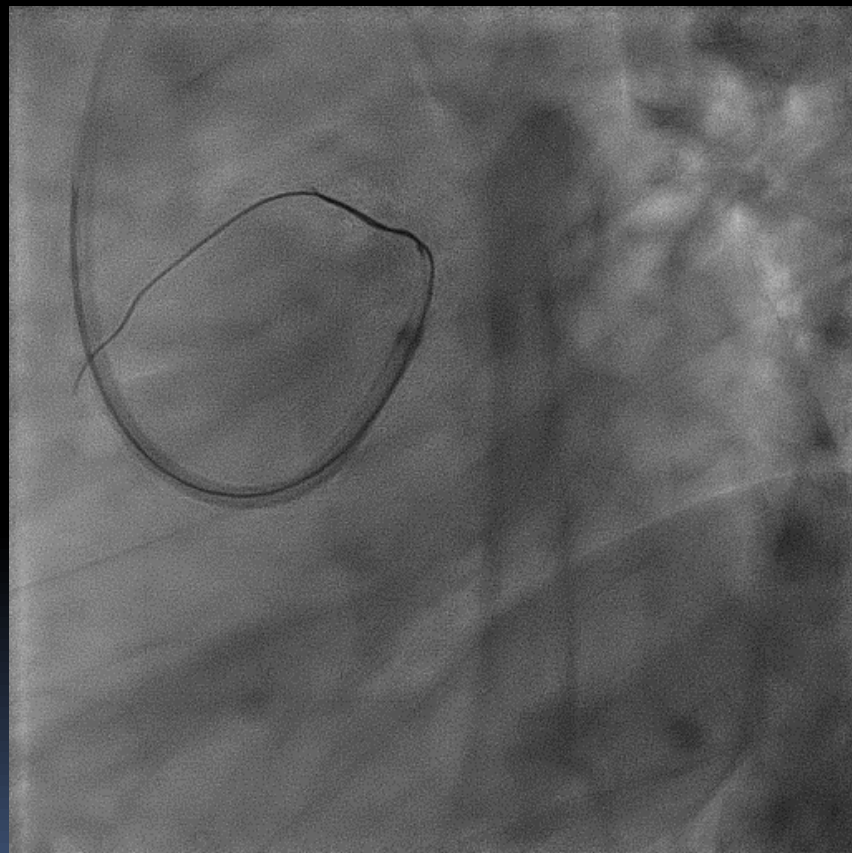
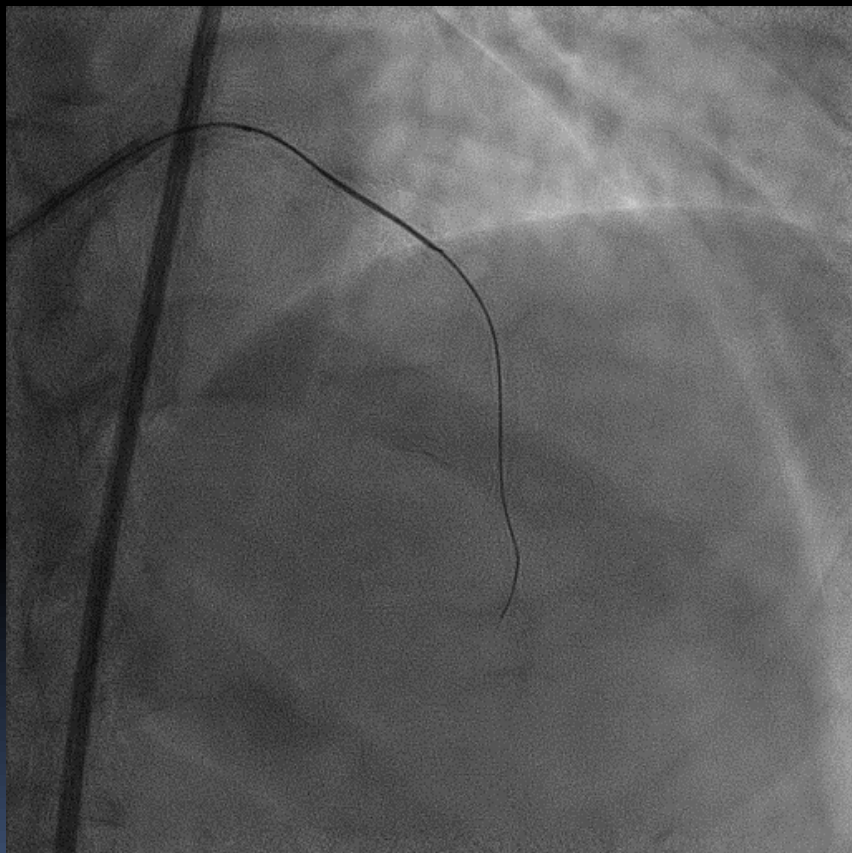
Final angiogram -- procedure time: 313mins
Contrast medium: 340 ml



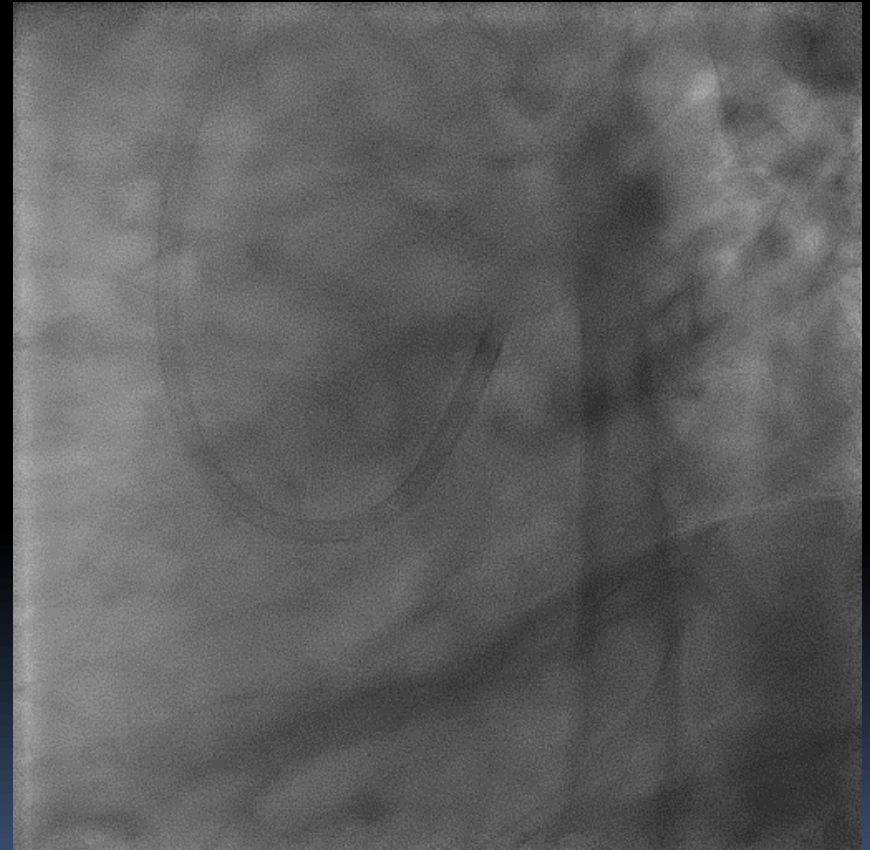
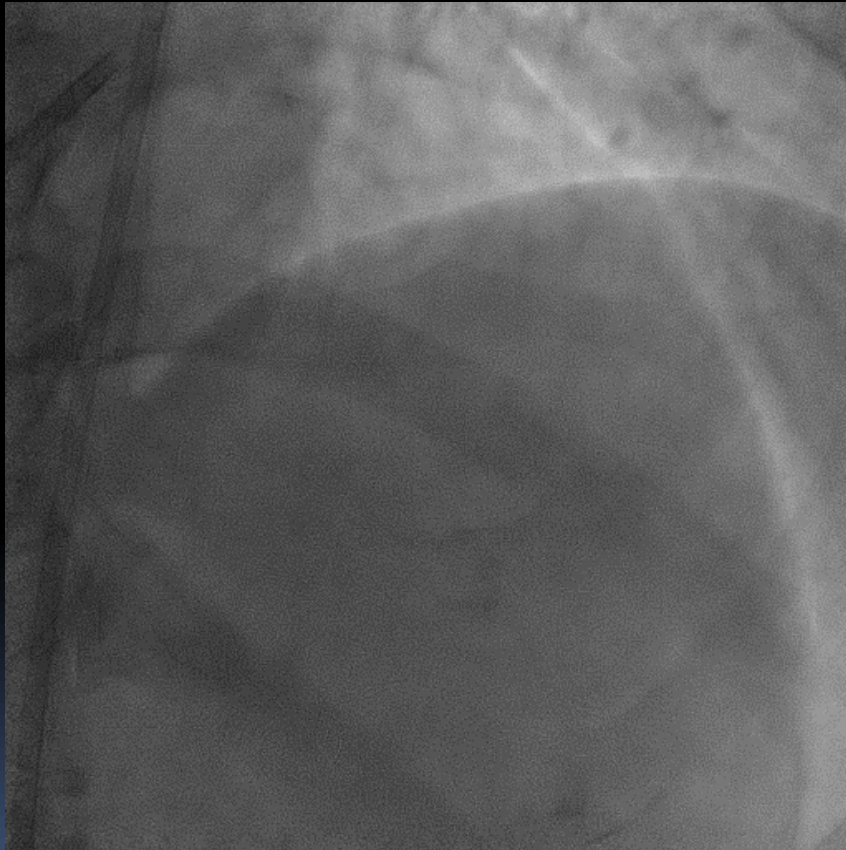
**54 Y/O F, ESRD, H/T, presenting with syncope/PEA
TVD, S/P PCI over PDA and LCX, LAD-CTO, failed for 3 times
Images from 3rd PCI attempt**



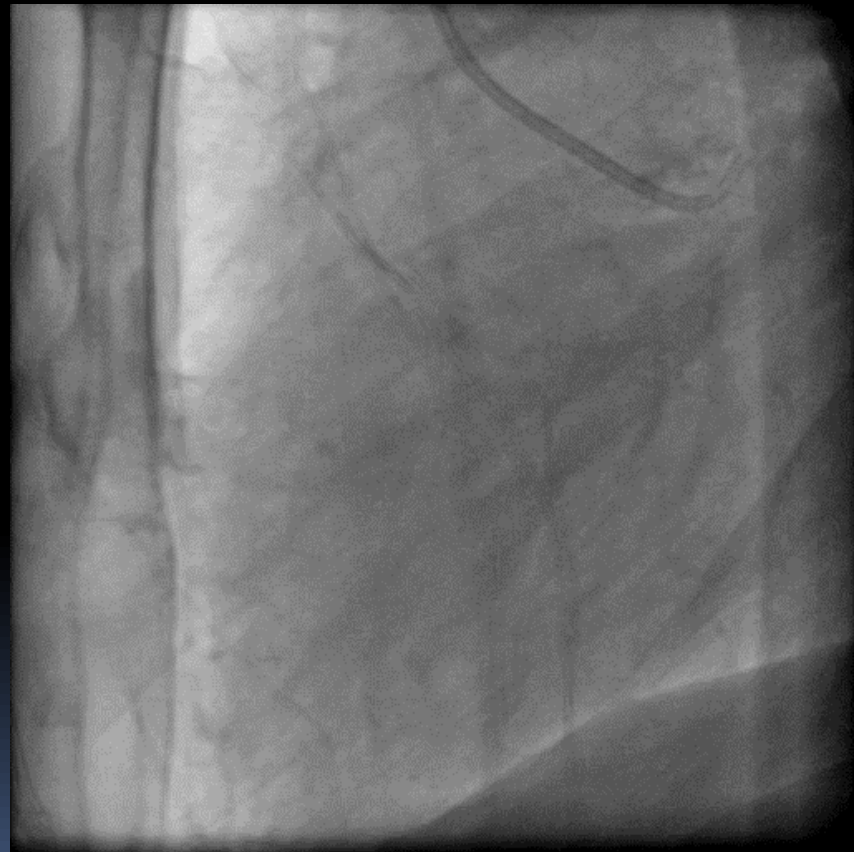
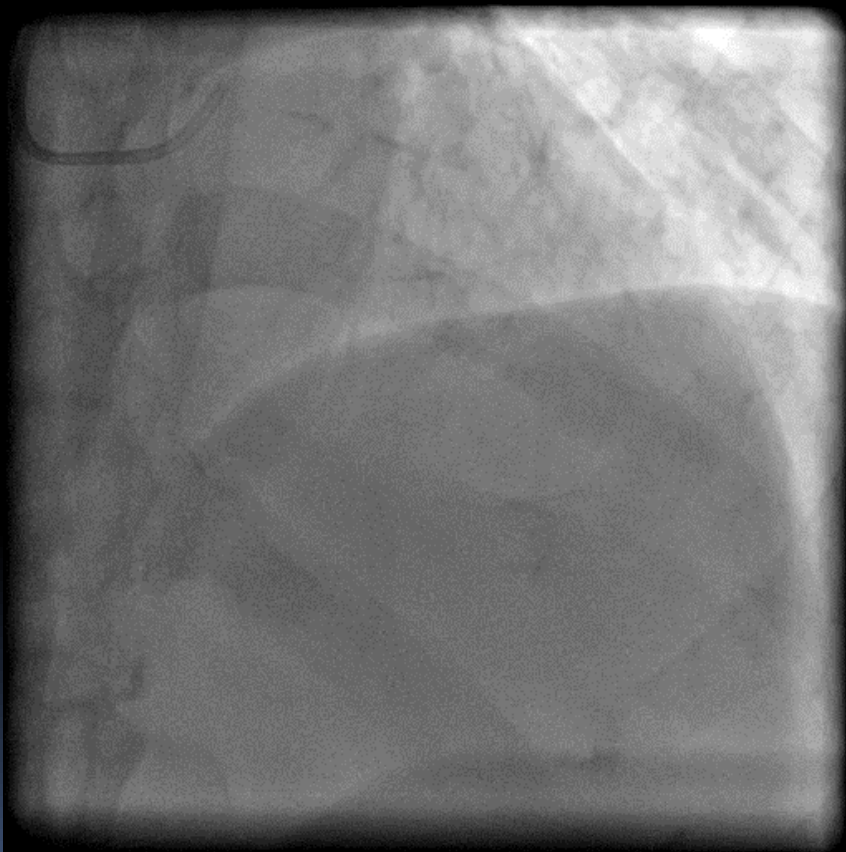


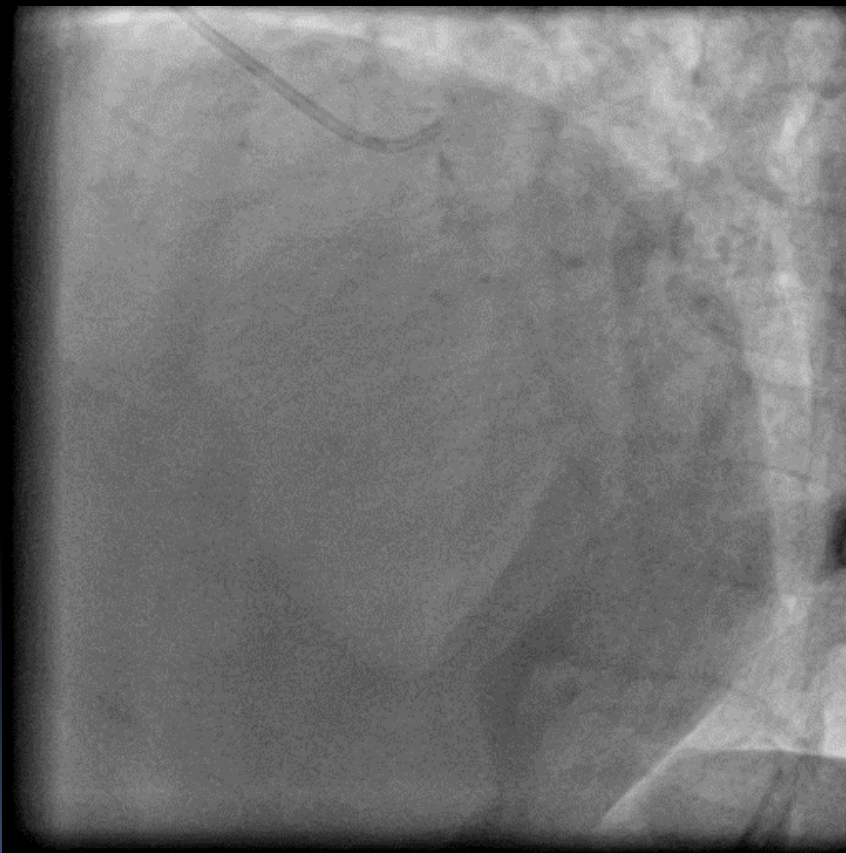


Final angiogram of 3rd try

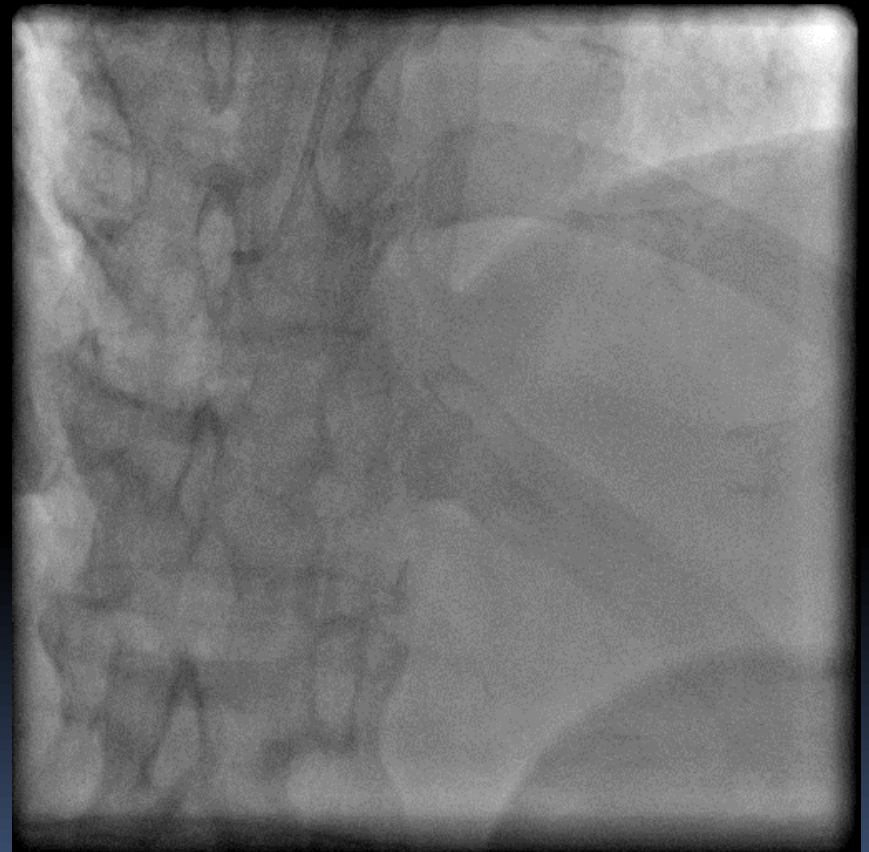
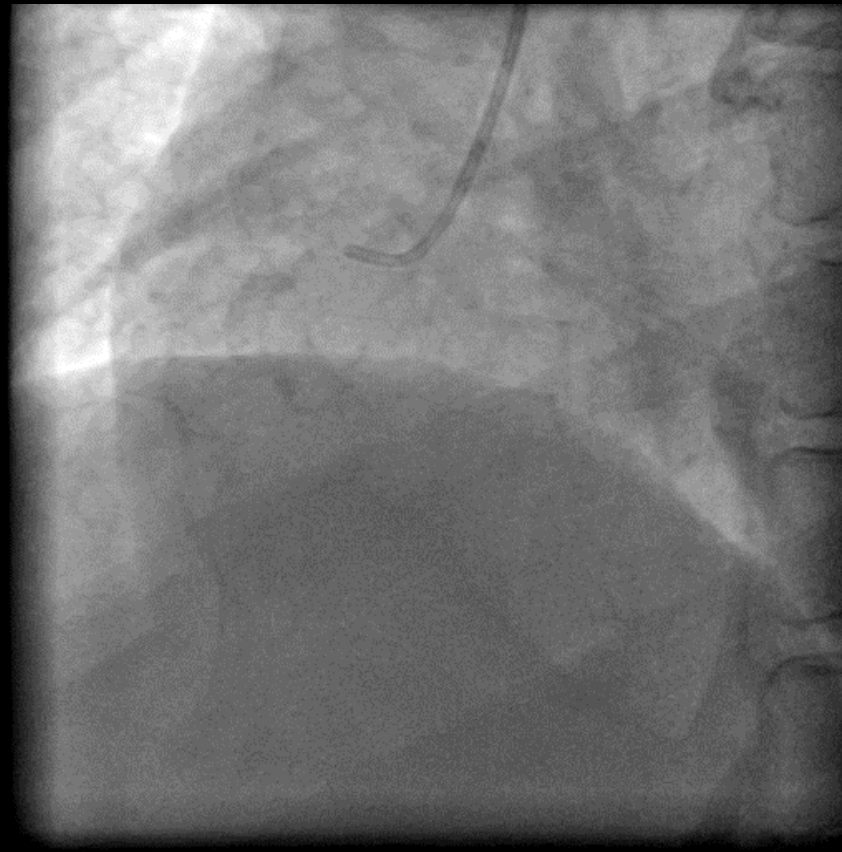


4th PCI try

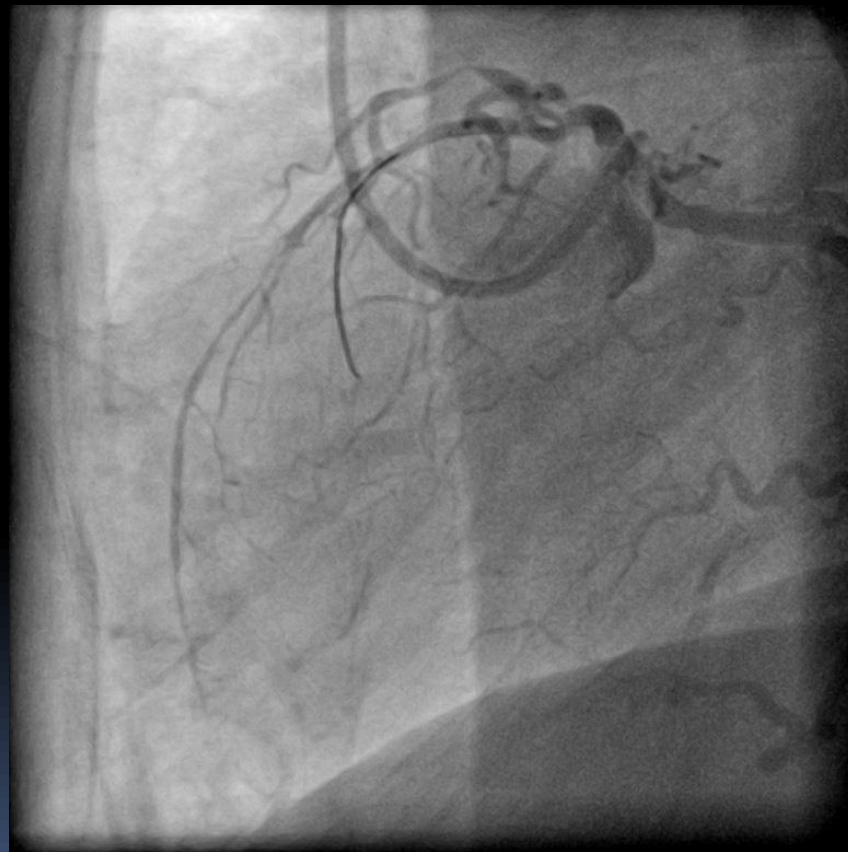
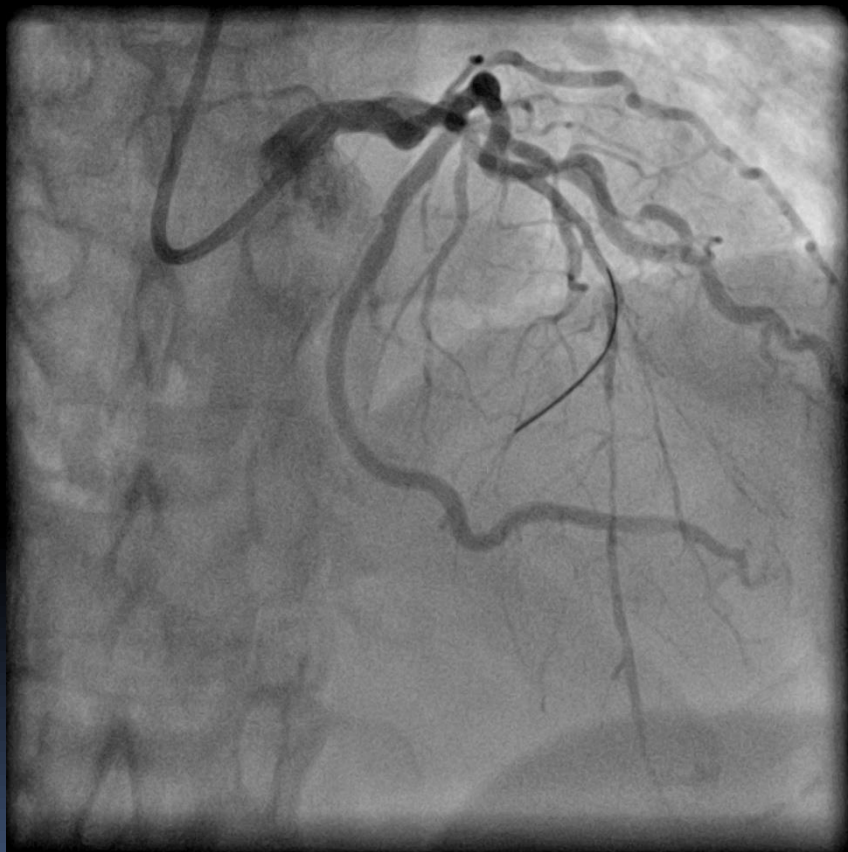




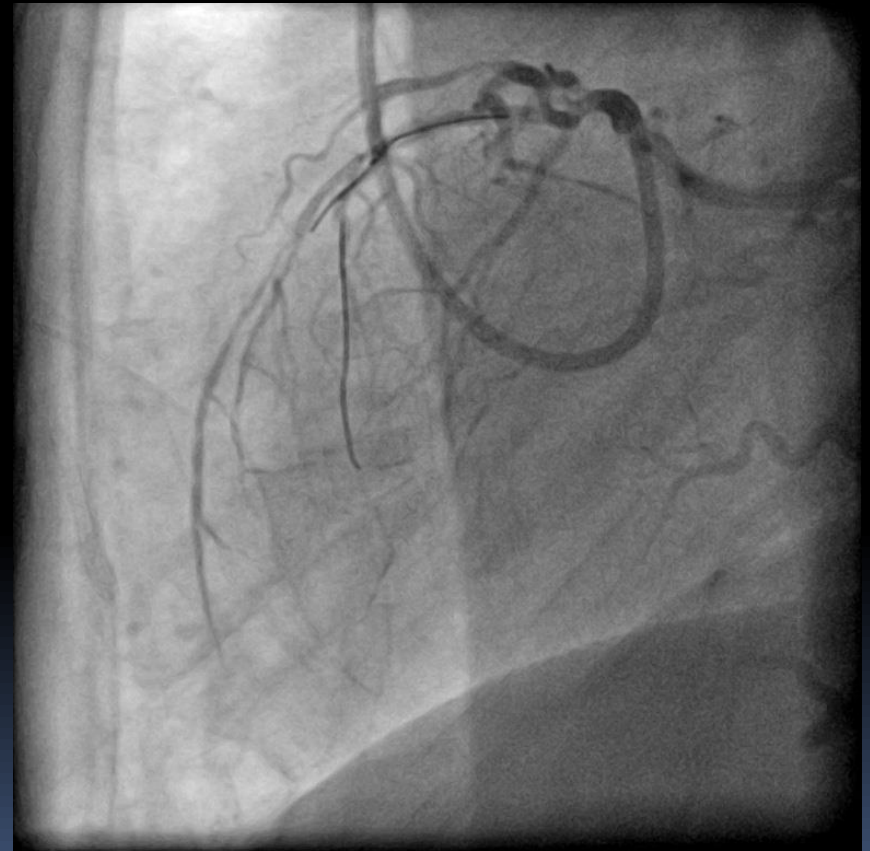
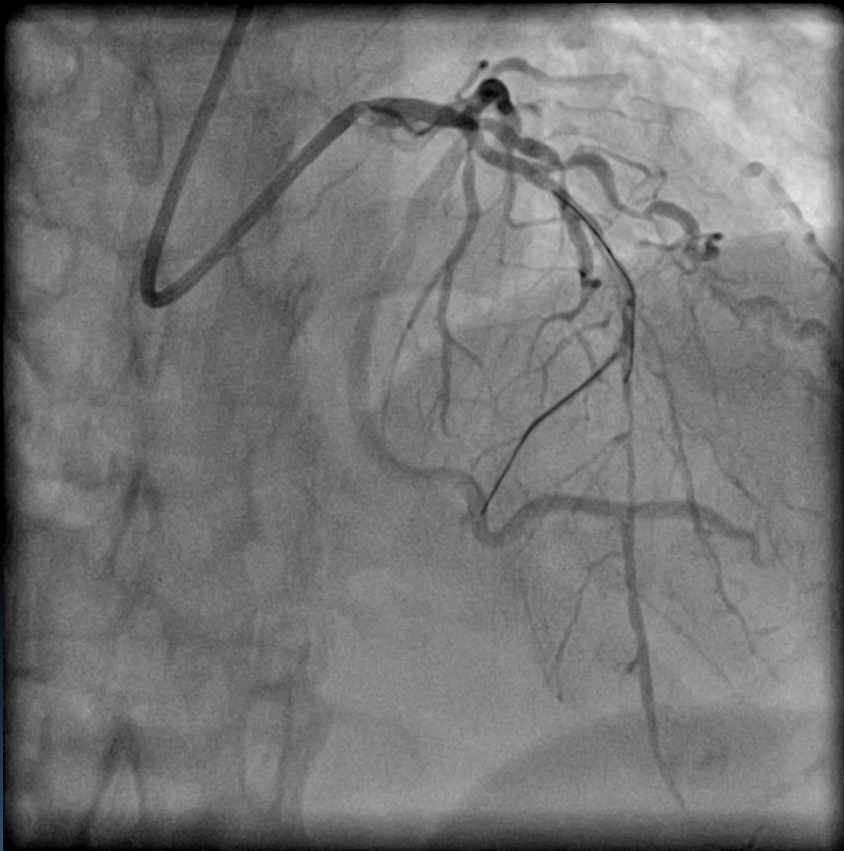
RCA



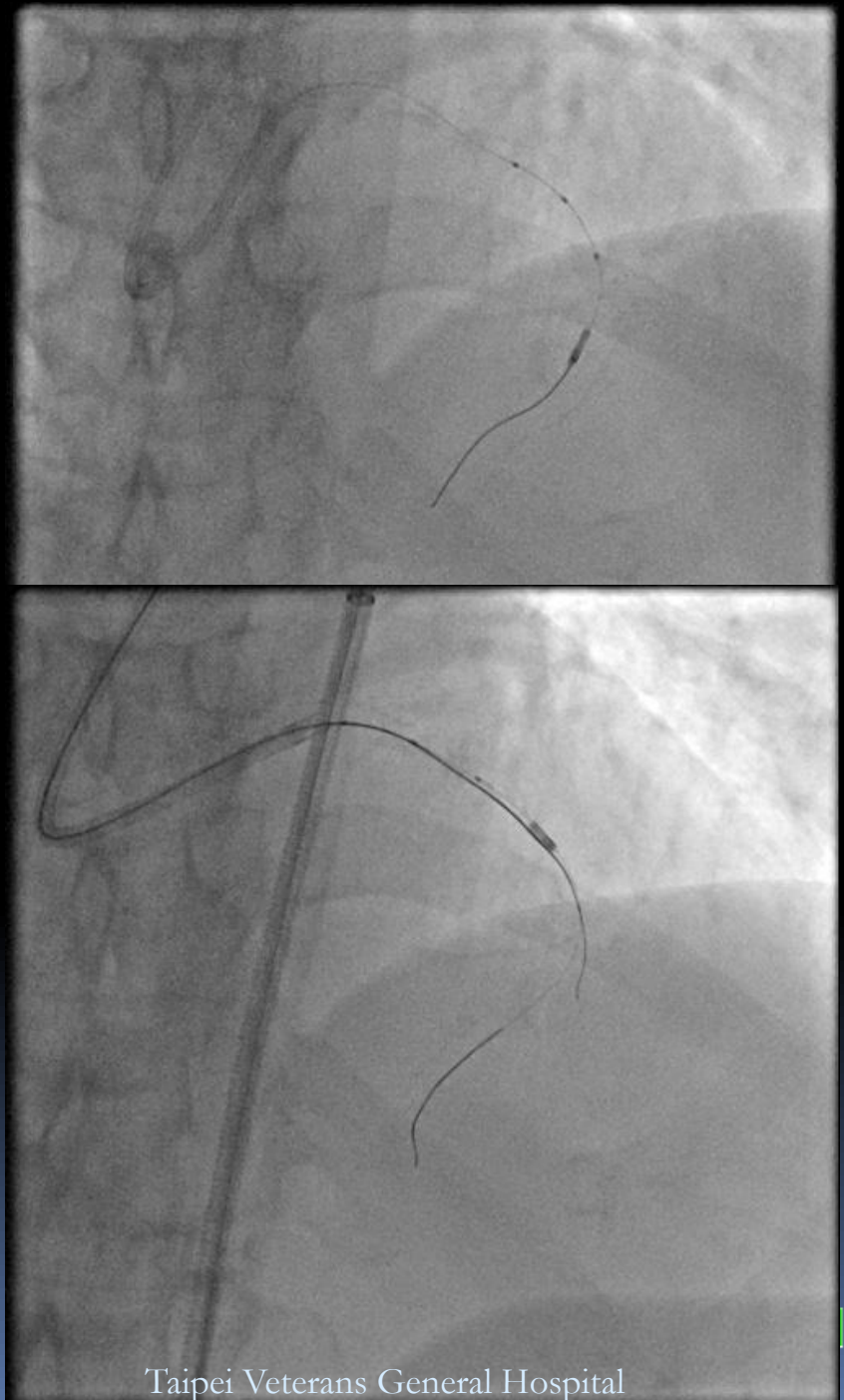
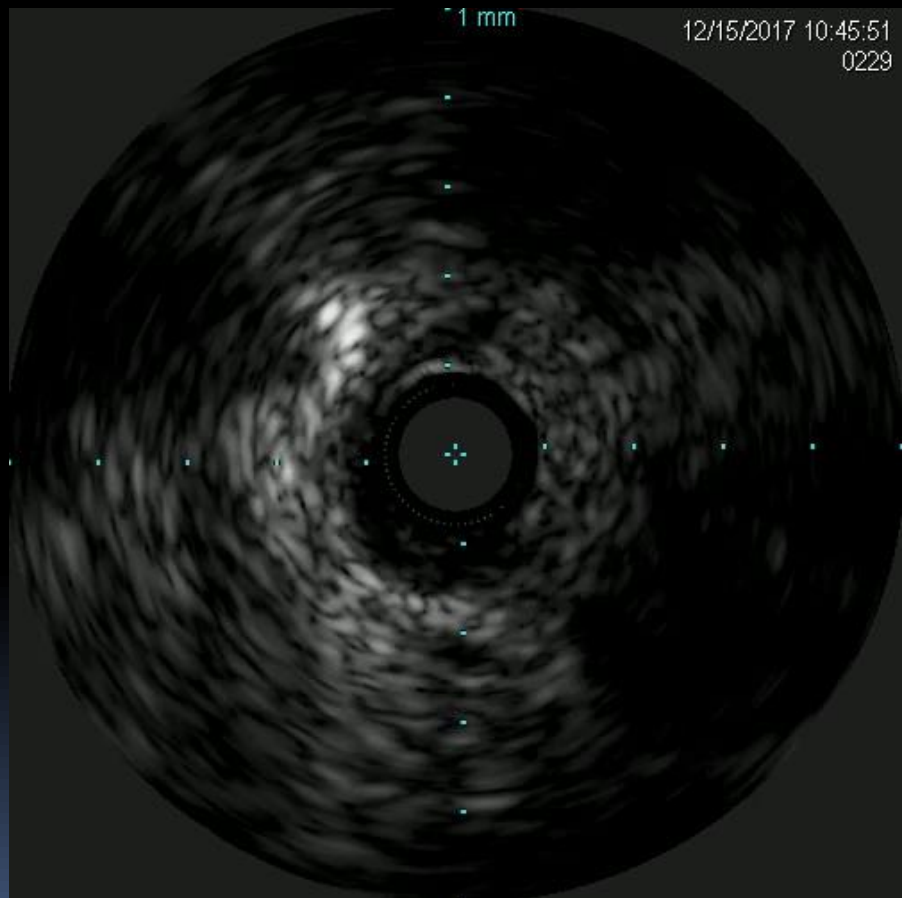
Antegrade fielder-FC enter septal branch



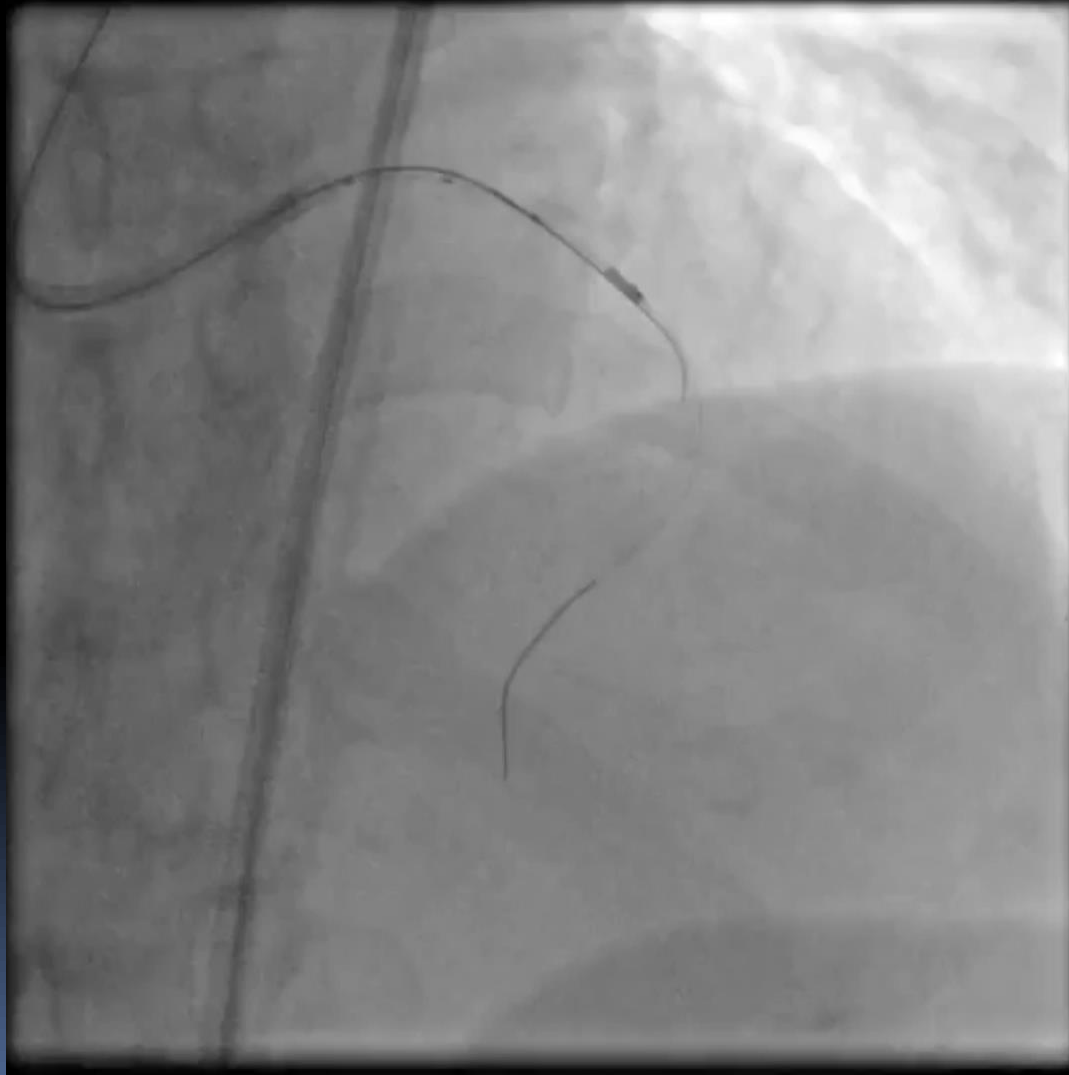
But the 2nd wire probably entered false lumen



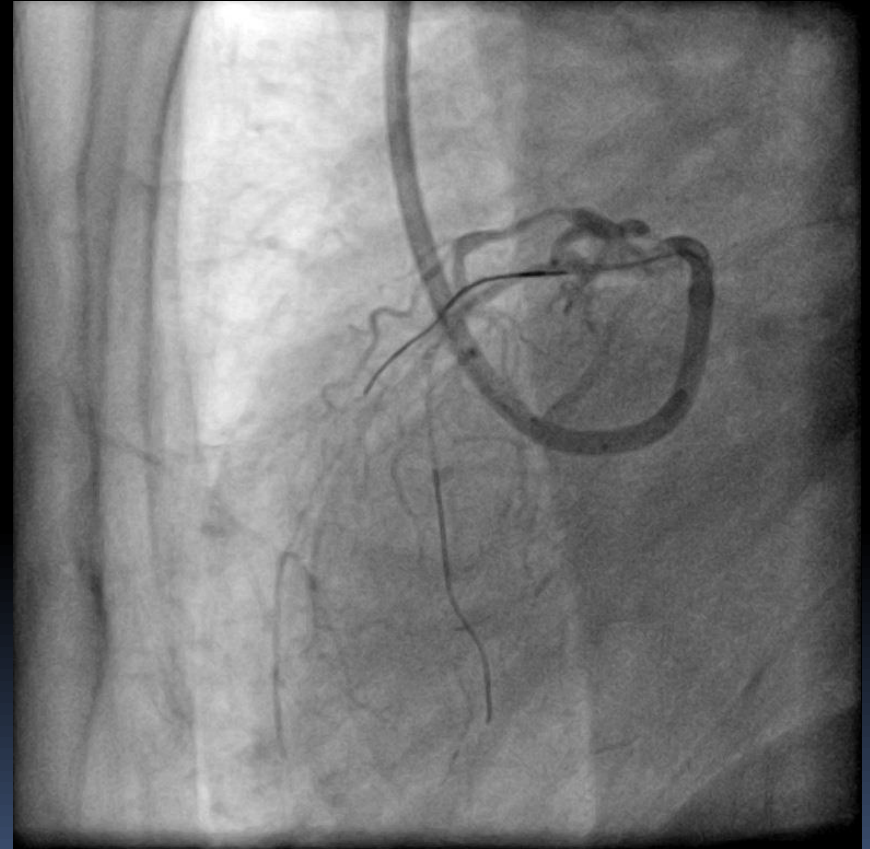
IVUS check-up



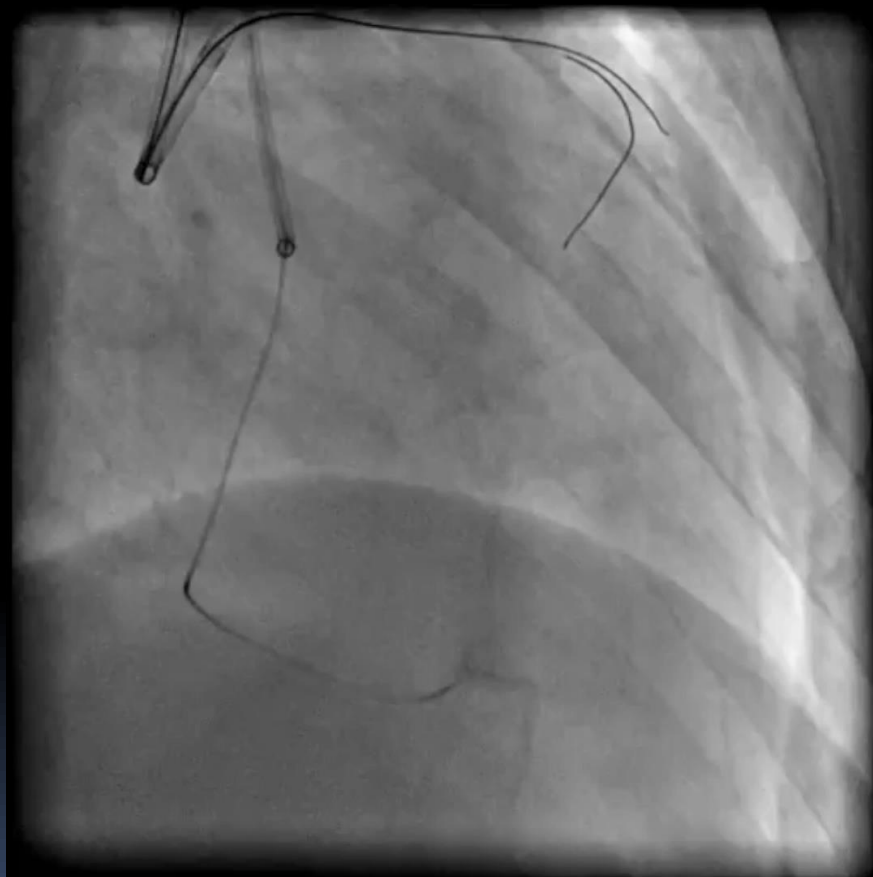
Try to puncture the entry point, but.....



Still could not enter the distal true lumen, and distal LAD run-off began to disappear.....



Retrograde approach

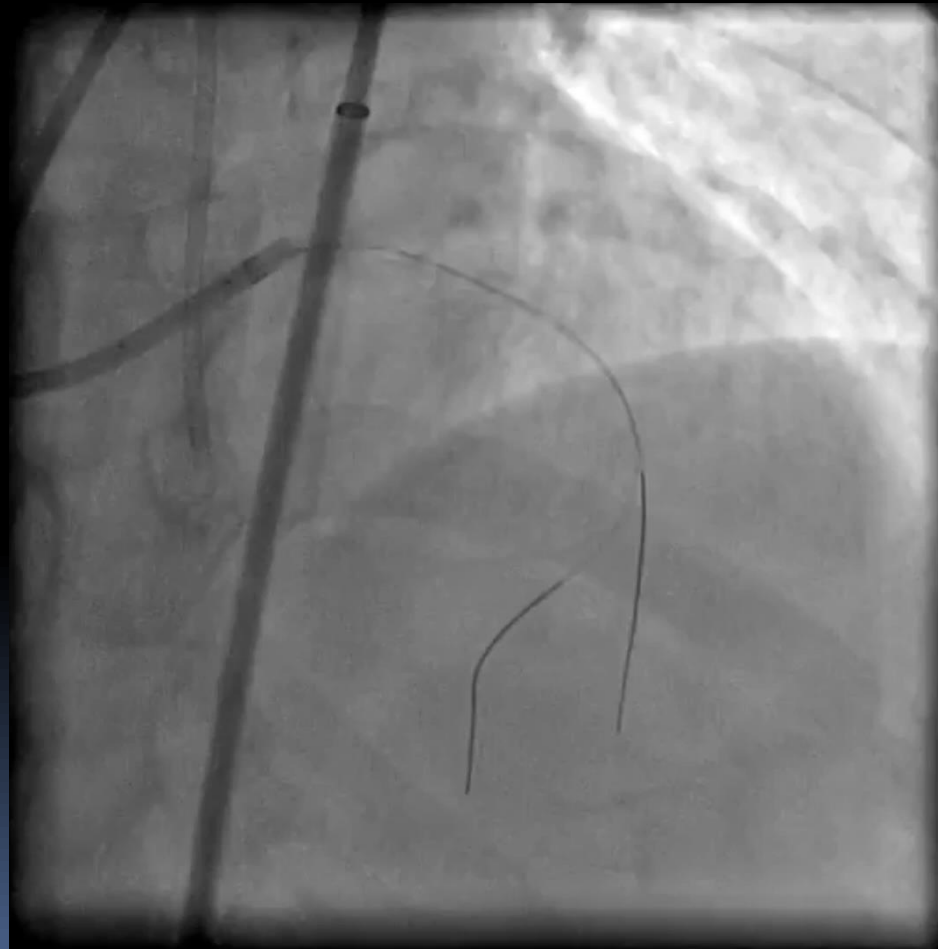


Wo....., caravel MC could not advance,
and tip broken.....

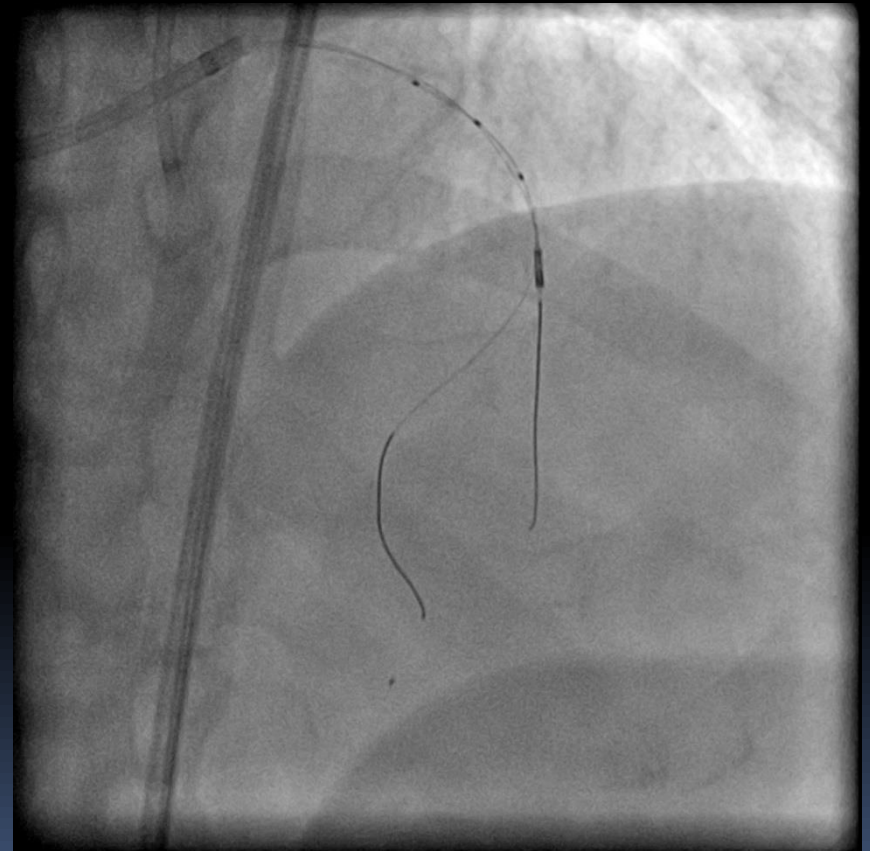


Antegrade again, and the distal LAD-run-off
disappear finally.....

Chest tightness (+)

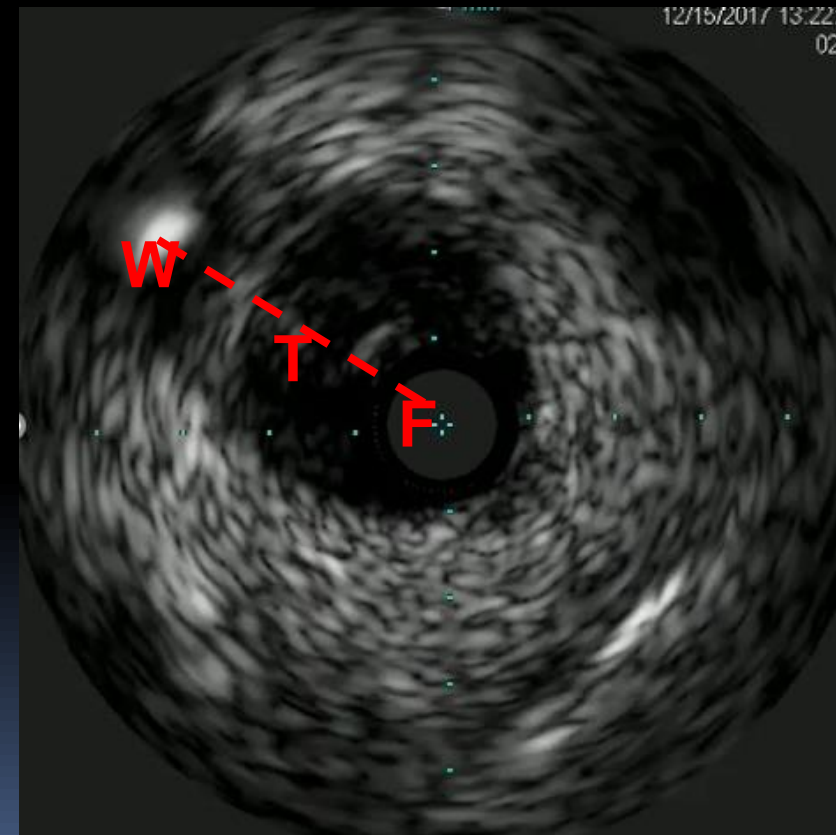


IVUS check again



IVUS check from the false lumen again

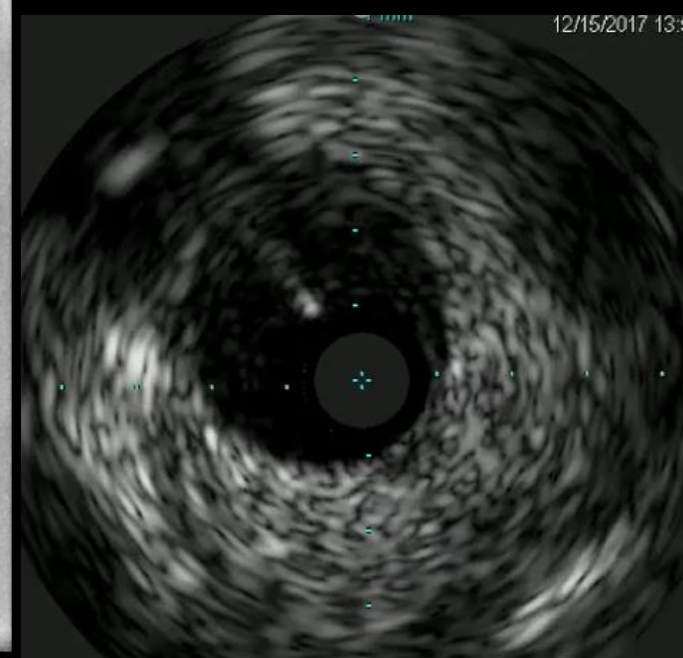
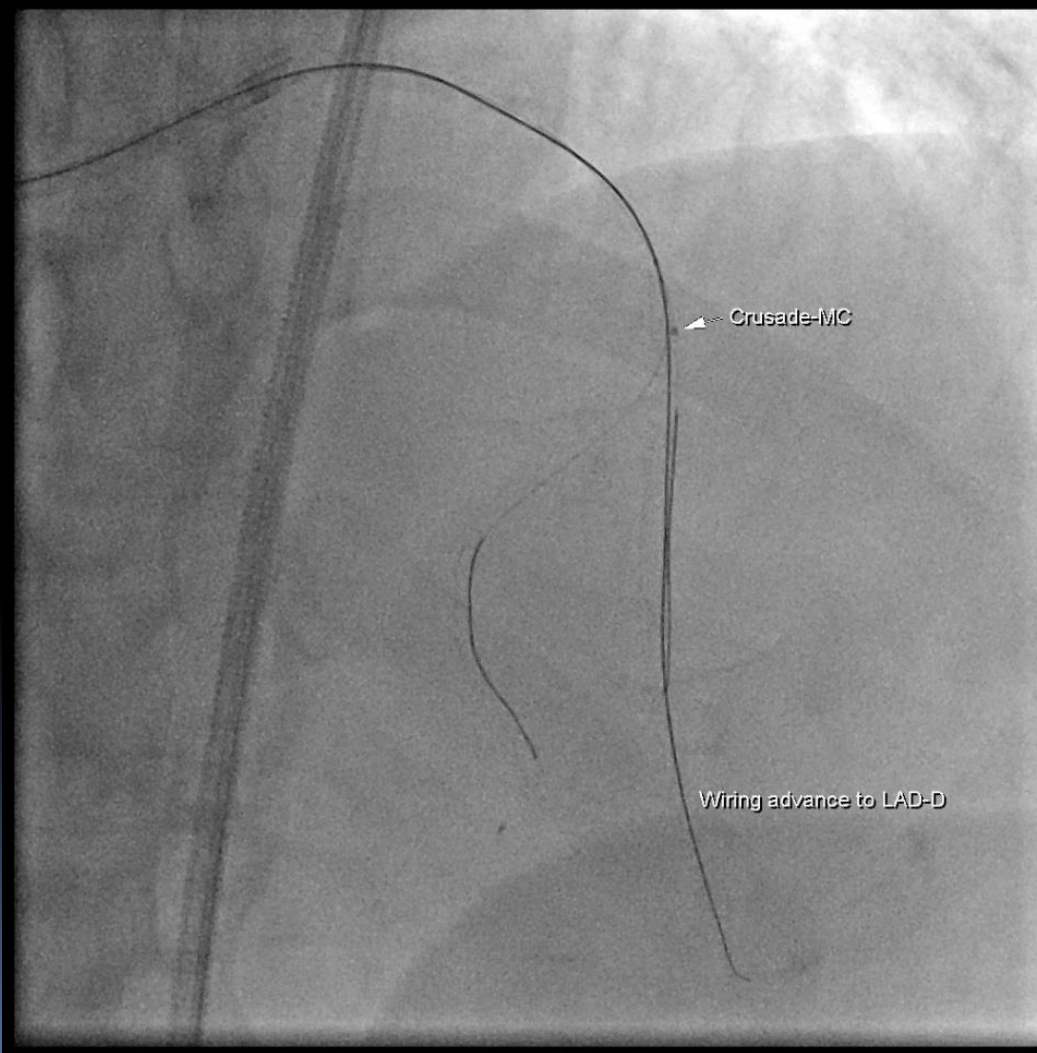
– look at carefully the relationship among True/False lumen and wire in septal branch



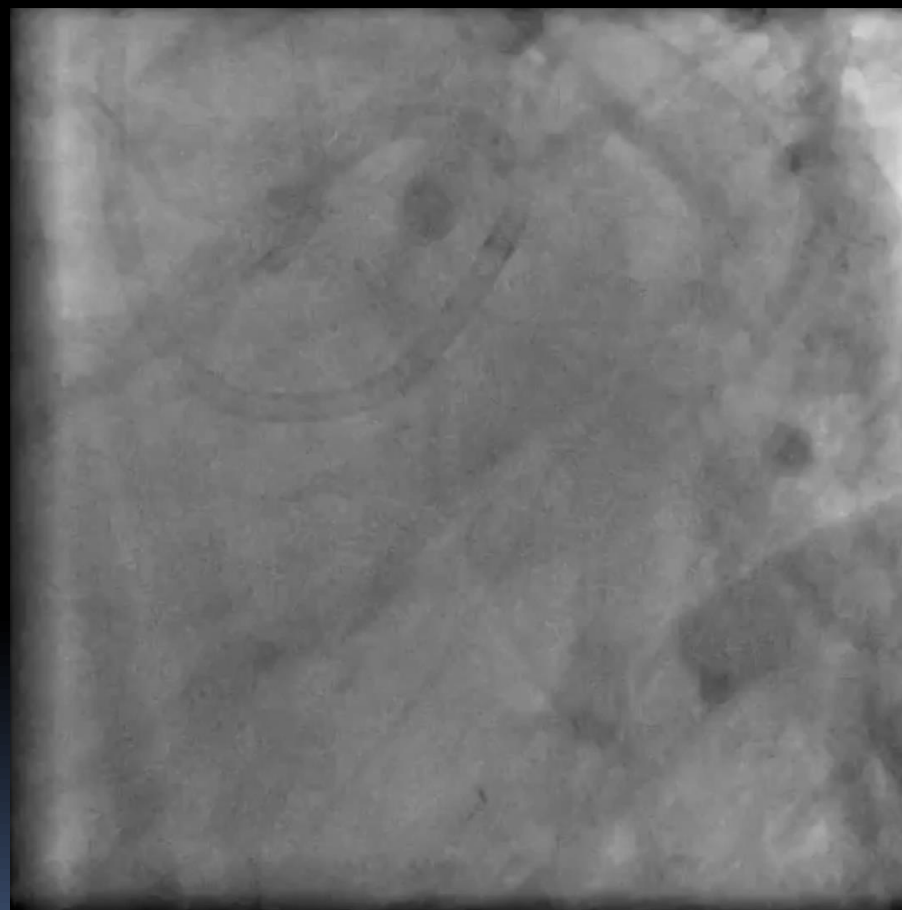
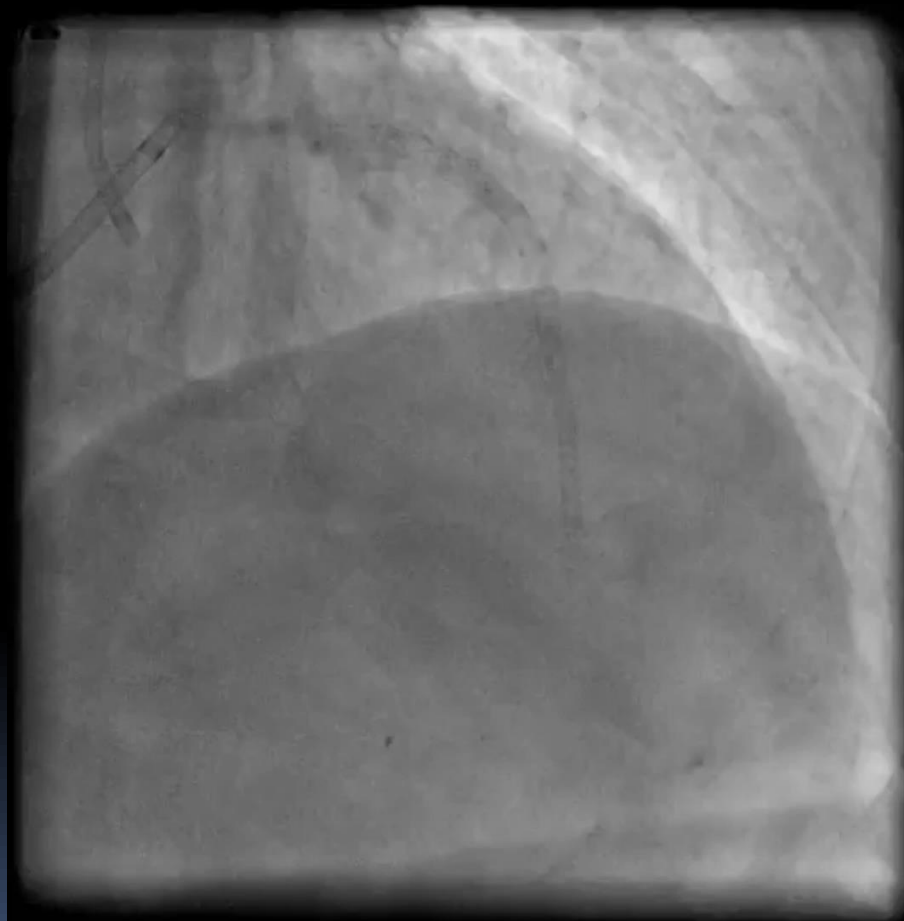
IVUS guided wire puncture (Conquest pro 12 GW)
-Side-branch technique



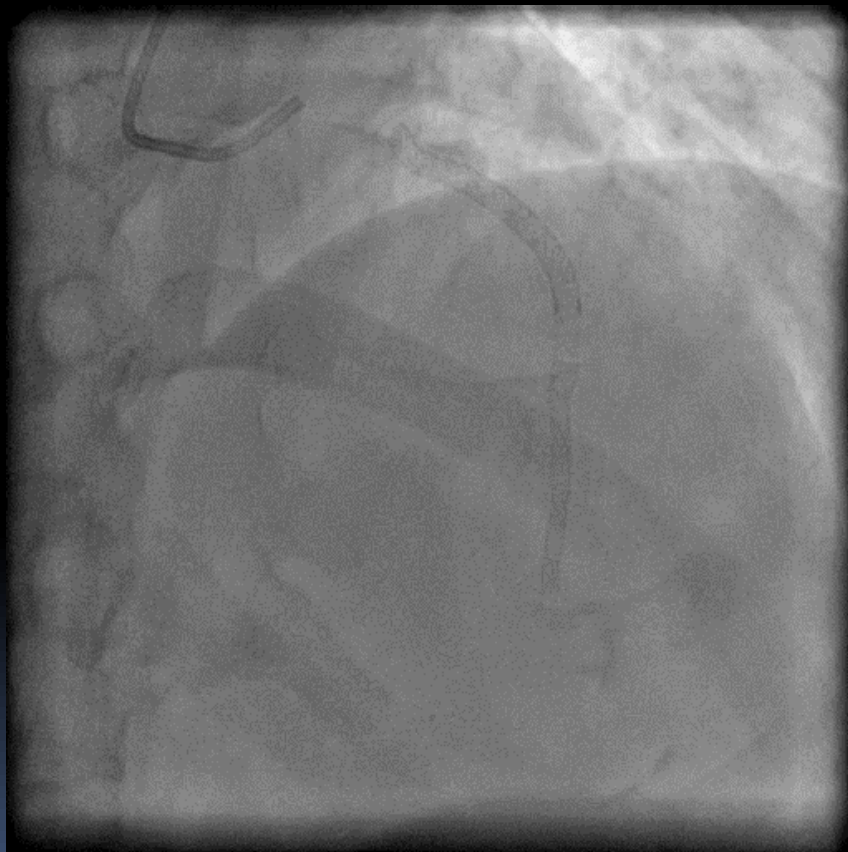
Wire re-entry to true lumen



Final angiogram



Follow up angiogram 1 year later



Conclusions

- IVUS check and IVUS guided wiring are indispensable in the treatment of complex CTO PCI, especially when both ante and retro approach have failed

