Retrograde wire facilitated IVUS guided antegrade CTO approach

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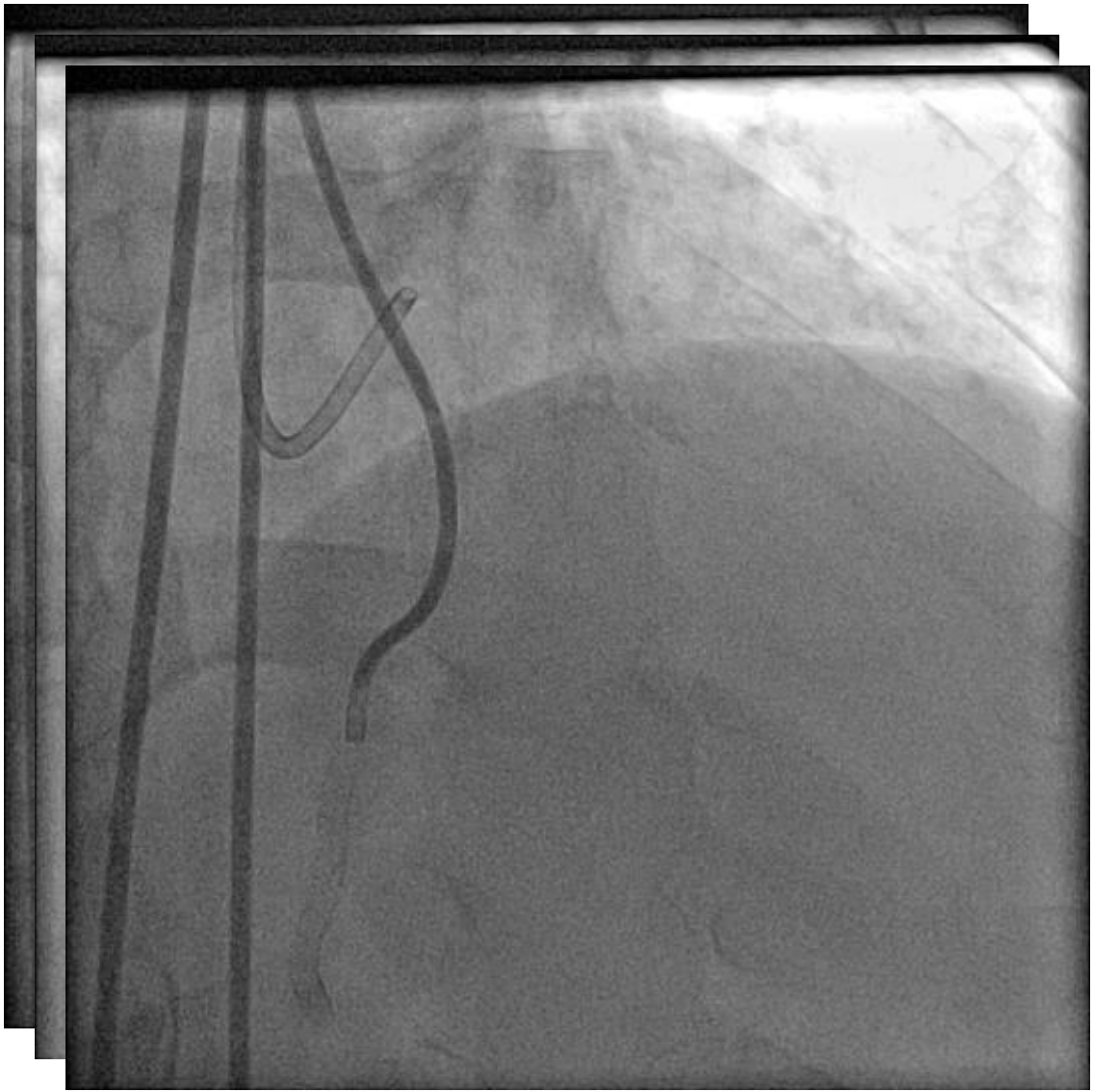
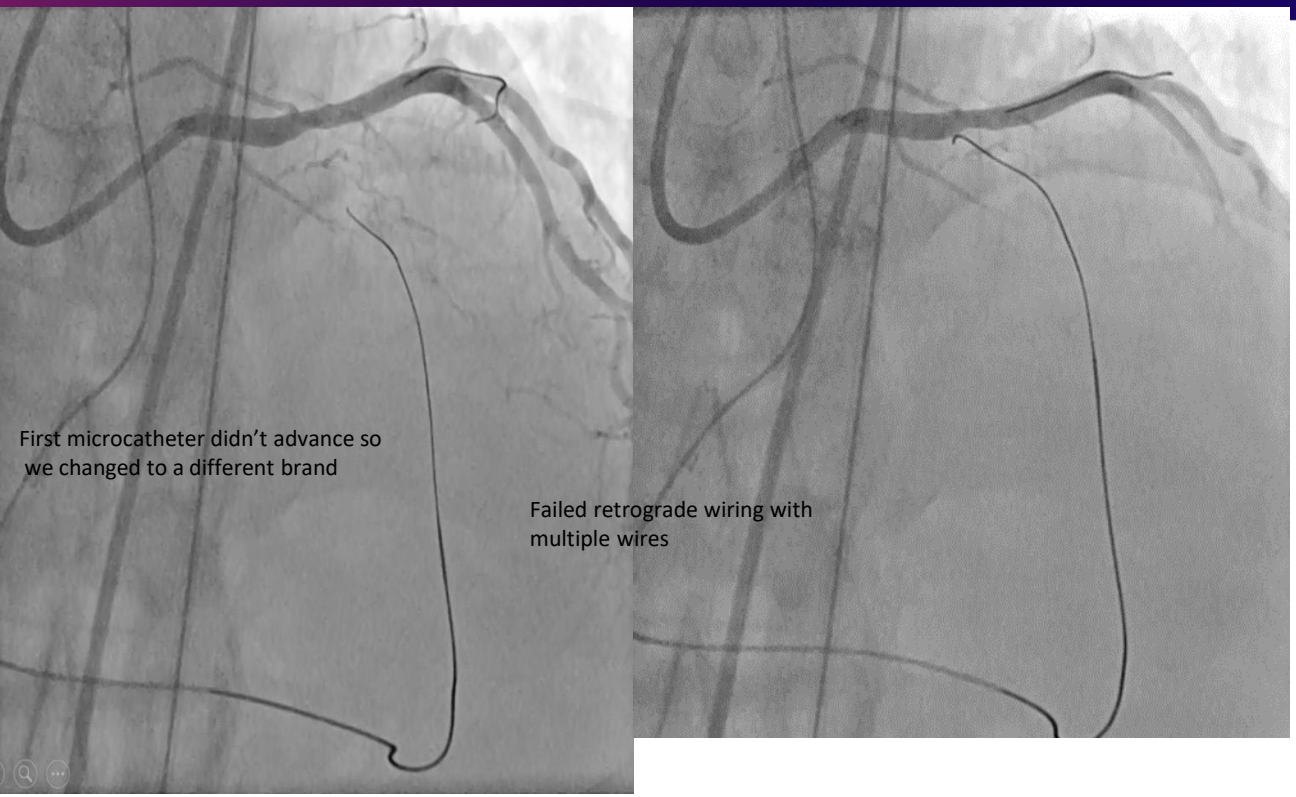
- I do not have any potential conflict of interest.

Patients background

- 74 years old male
- LAD CTO from ostial part with no entry point
- History of PCI on RCA
- MRI Viability test showed preserved viability in LAD territory
- CABG was offered but the patient refused
- J CTO Score : 5
- In the first try our plan was to do Antegrade IVUS guided puncture but we couldn’t see the entry point so we failed , and decided to fix the RCA critical lesion in that session and then go for combine antegrade retrograde aproach



Antegrade IVUS guided approach failed because we couldn't find the proximal cap in IVUS so switched to retrograde

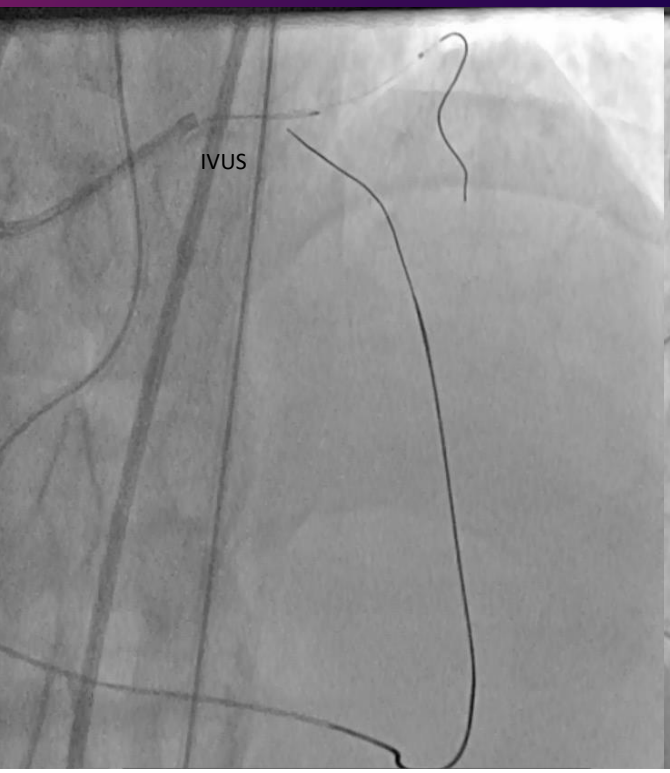


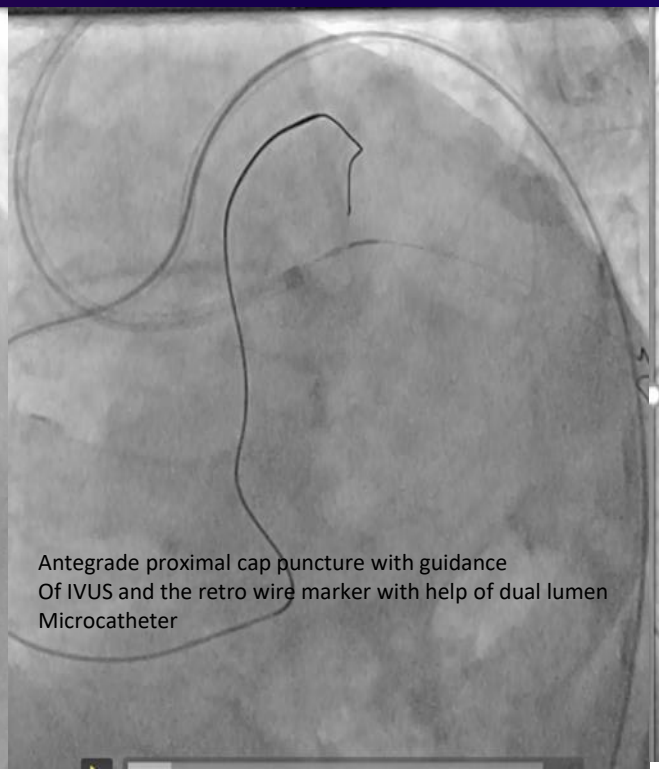
What is the next step??

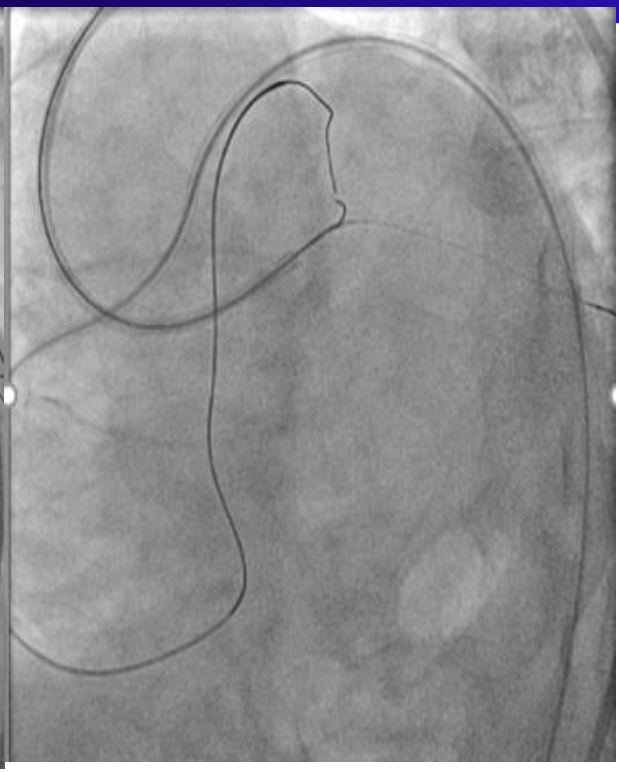
we decided to push as far as we could in the retrograde limb and use IVUS in antegrade limb and try to visualize the tip of the retrograde wire in the LAD in IVUS.

Remember ostial LAD visualization was not possible with out the retrograde wire in the first attempt

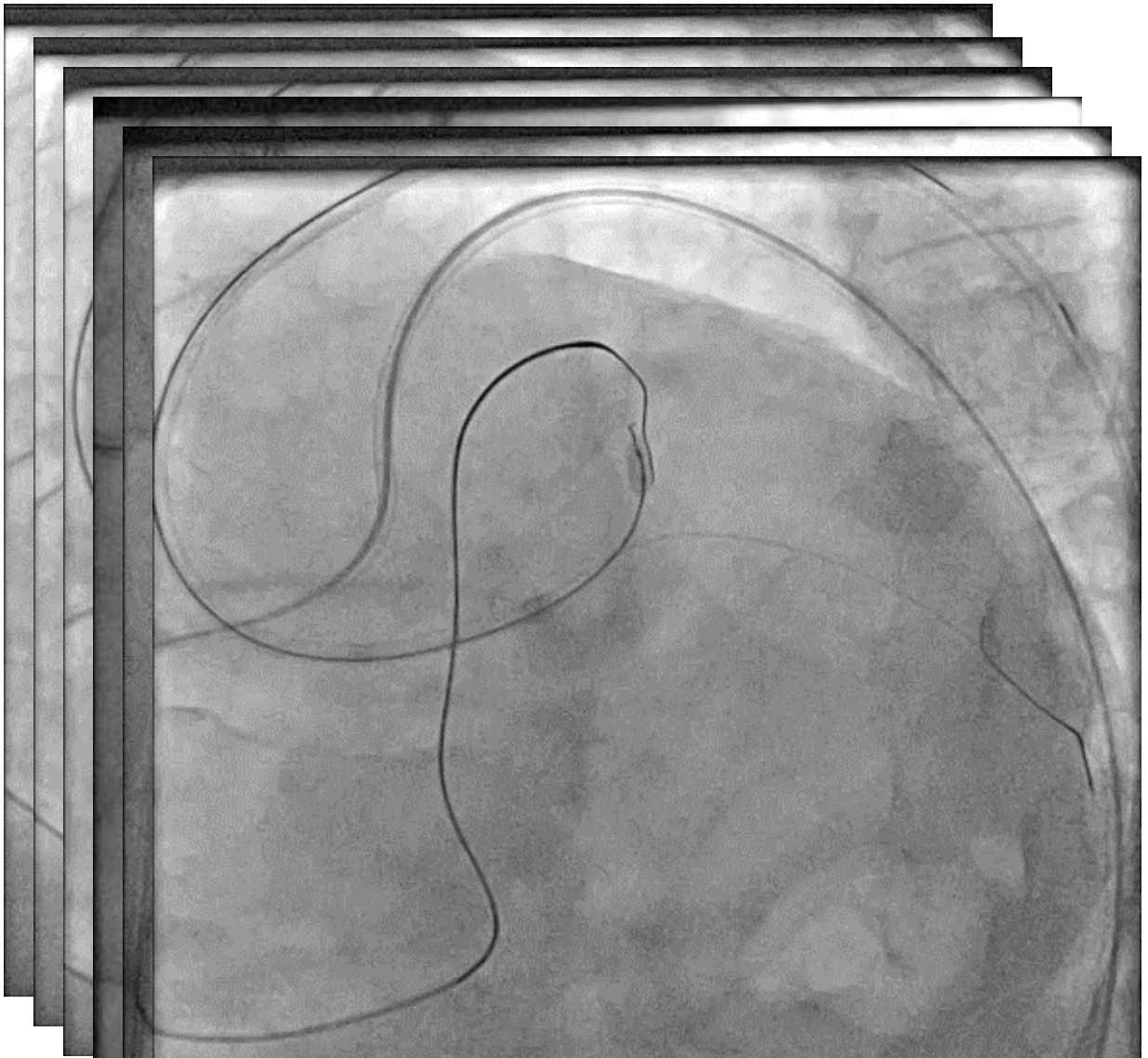
With retrowire as a marker IVUS guided antegrade puncture with a heavy wire was done

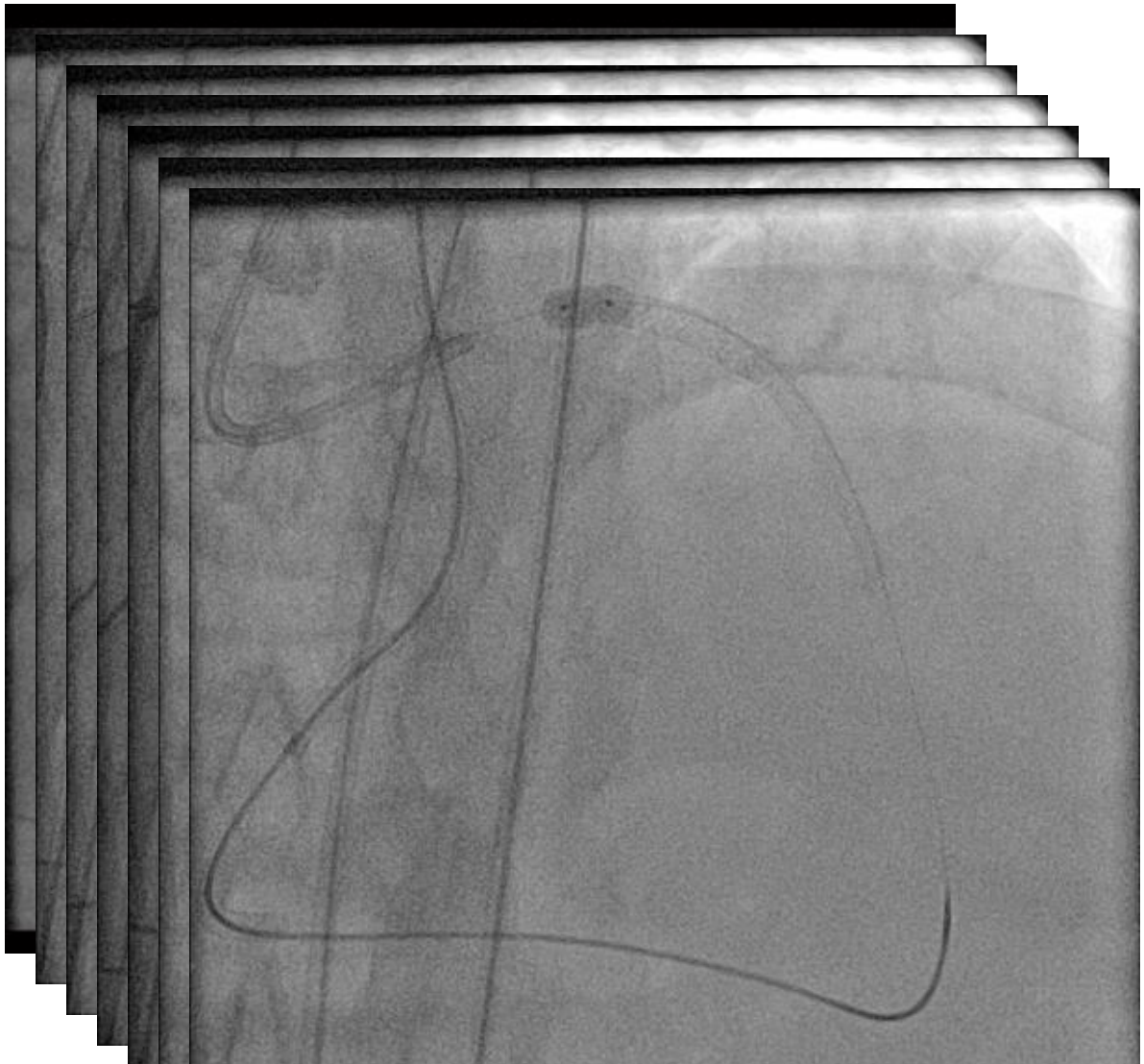


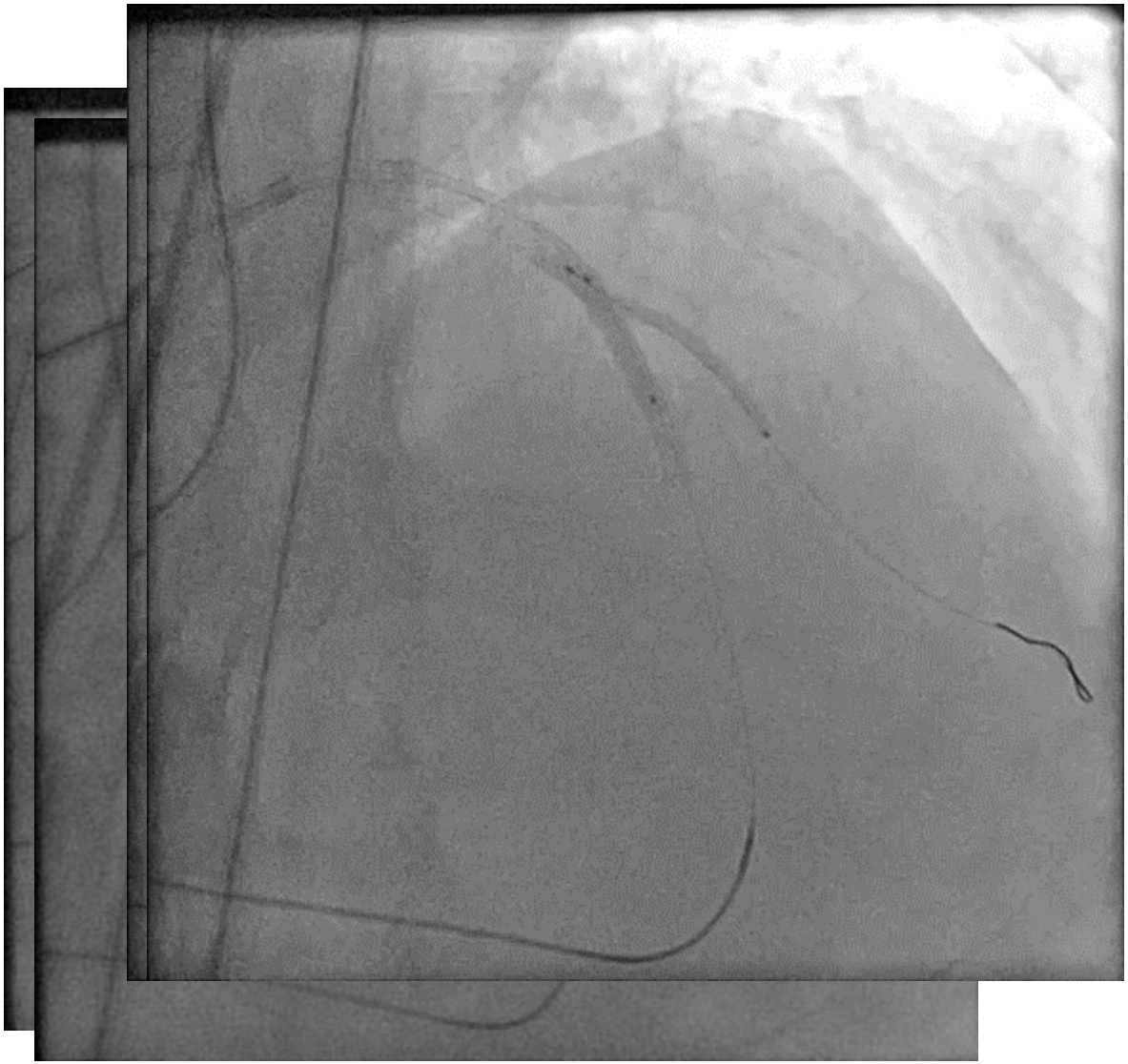


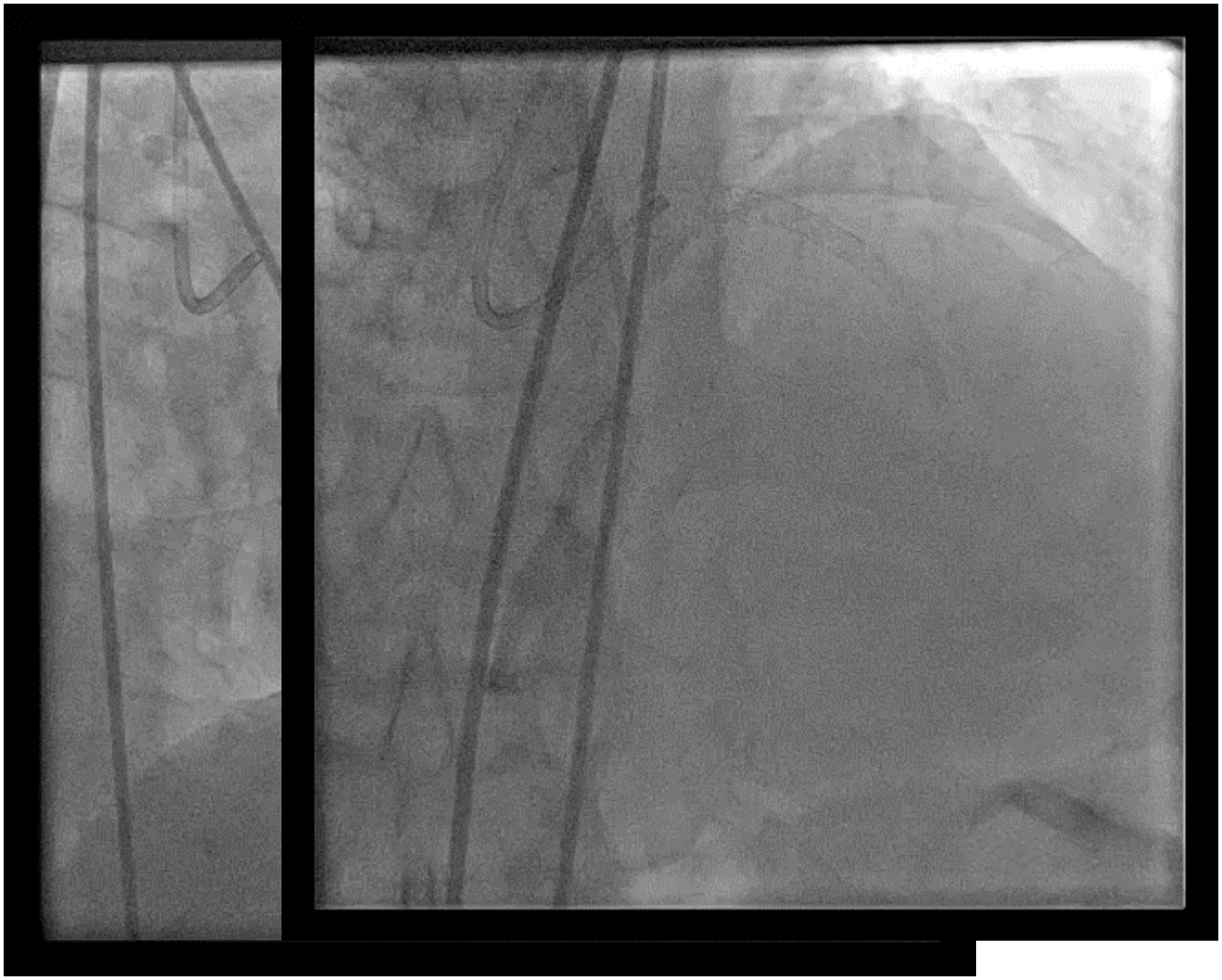


- After identification of the ostial LAD we coregistered the view and used dual lumen nhancer PRO and put the proximal exit right in front of the LAD ostial part an by using conquest PRO 12 puncture the proximal cap.









- Final injections revealed septal rupture from both Left system and right system but drainage was to the cavity so we didn’t need to do anything.
- We terminated the procedure and the patient was discharged the next day in excellent condition.
- Combined antegrade retrograde CTO approach is very helpful in difficult situations where just one method is not going to finish the case
- Ivus guidance is very important in CTO
- Retrograde guide extension or guiding pick up is the best way to make sure you are in the true lumen
- Septal collateral rupture can be managed conservatively

Take home massage

- Ivus guided antegrade CTO approach is a good way to identify the proximal CAP but visualization is not always possible in these cases using a retrograde wire and visualization of this wire in antegrade IVUS is very helpful
- Knuckle wire technique is sometimes the best option for CTO wiring
- Septal ruptures are common during retrograde CTO PCI and almost always can be treated conservatively although sometimes coiling, glu or etc are needed.
- This complication is usually benign in nature but in some very cases VSD or CHB or regional wall motion abnormality can manifest.