

Underestimation of the Proximal Lesion
Severity Complicated Ipsilateral
Retrograde Procedure in the Mid LAD
CTO Intervention

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Potential conflicts of interest

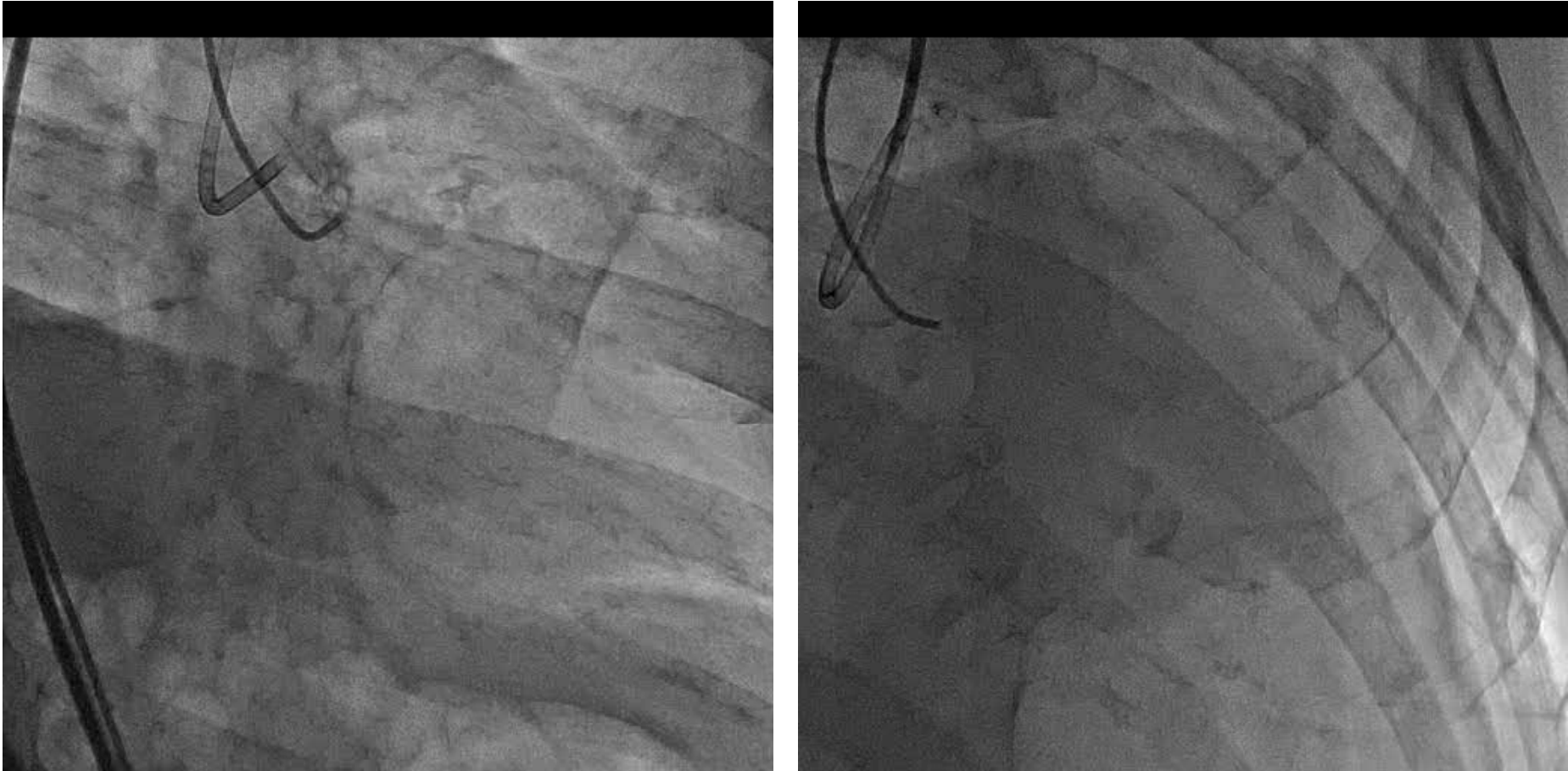
Speaker's name: Satoru Otsuji

No conflict of interest

Case

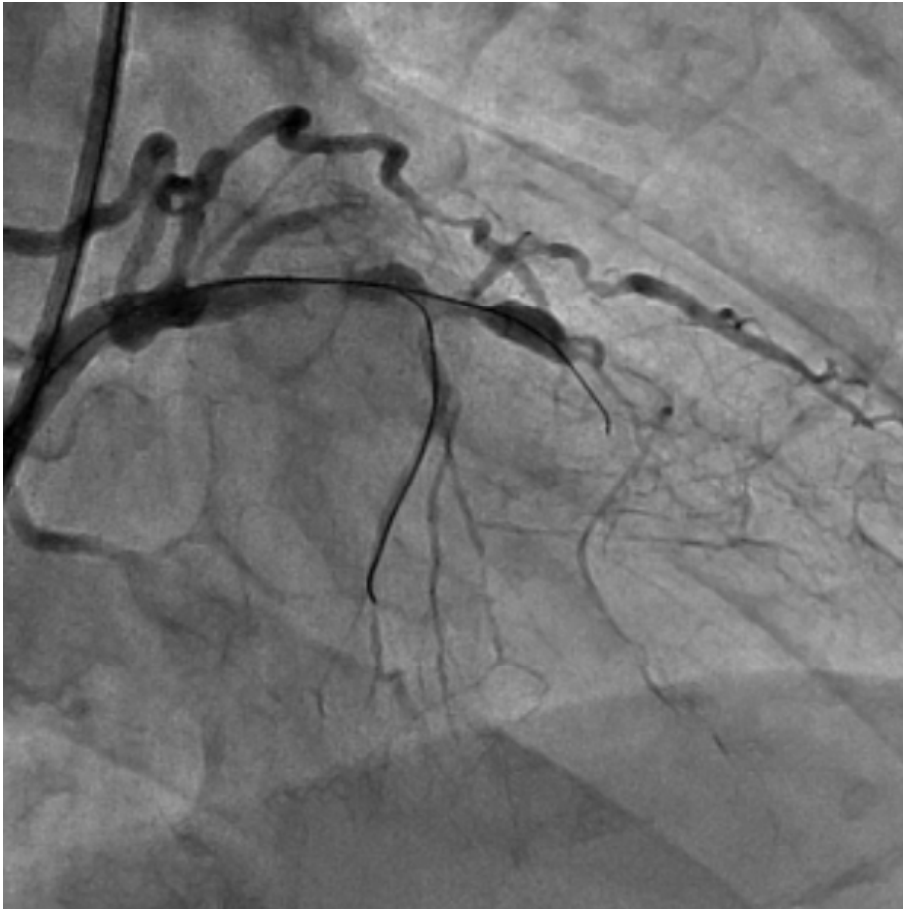
- 79-year-old, male
- Chief Complaint: Shortness of breath (SOB)
- Present Illness: History of HTn and DL. SOB on effort. Exercise ECG showed positive response for ischemia. Coronary MDCT showed 3 vessel disease.
- Coronary risk factor: HTn, DL

Diagnostic angiograms



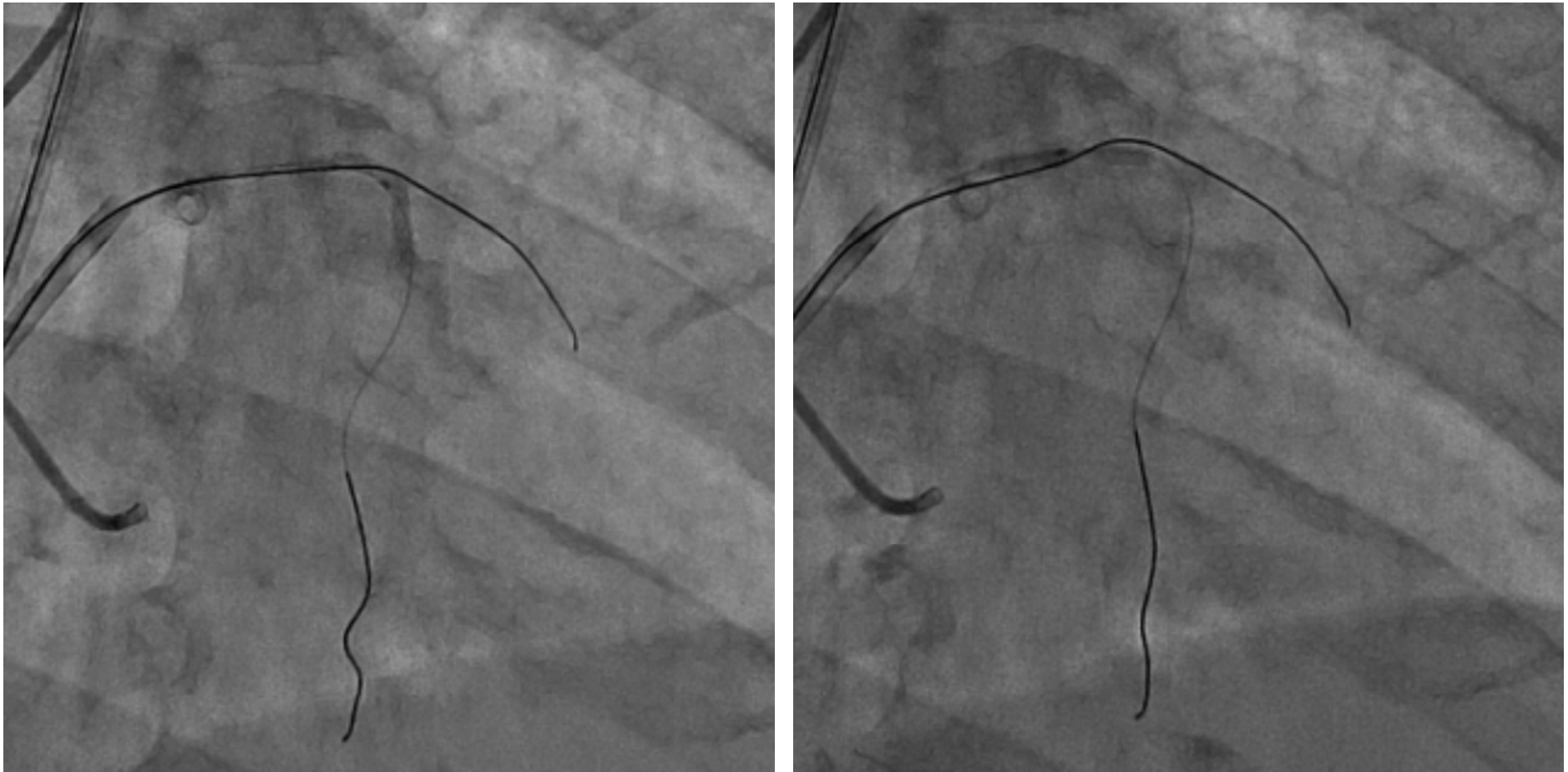
Severe stenosis in 4PL, prox. LAD and LCX OM branch. Mid. LAD was CTO. Distal LAD was supplied via collaterals from RCA (RV-apical, 4PL-diagonal) and ipsilateral collateral (septal-septal).

Antegrade approach



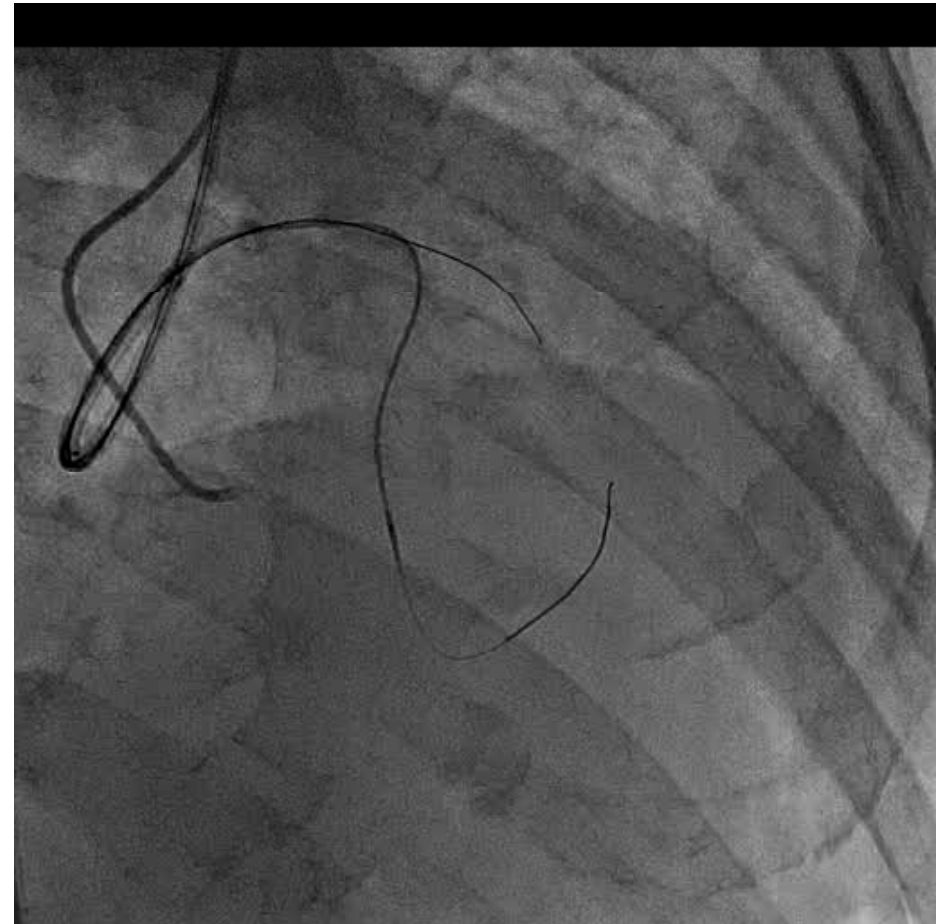
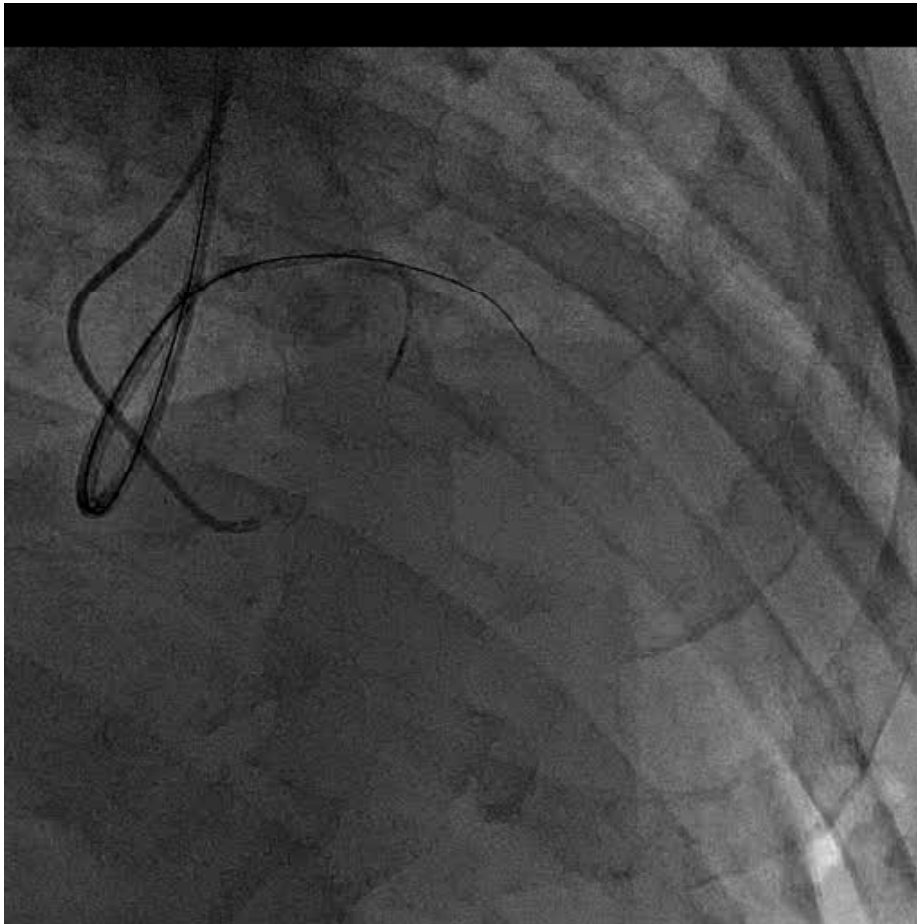
Proximal fibrous cap could not be penetrated with a hydrophilic polymer coated moderate weight wire. I was able to penetrate it with a conquest pro 12. However, the wire went into subintima afterward.

Switch to the retrograde approach via ipsilateral septal channel



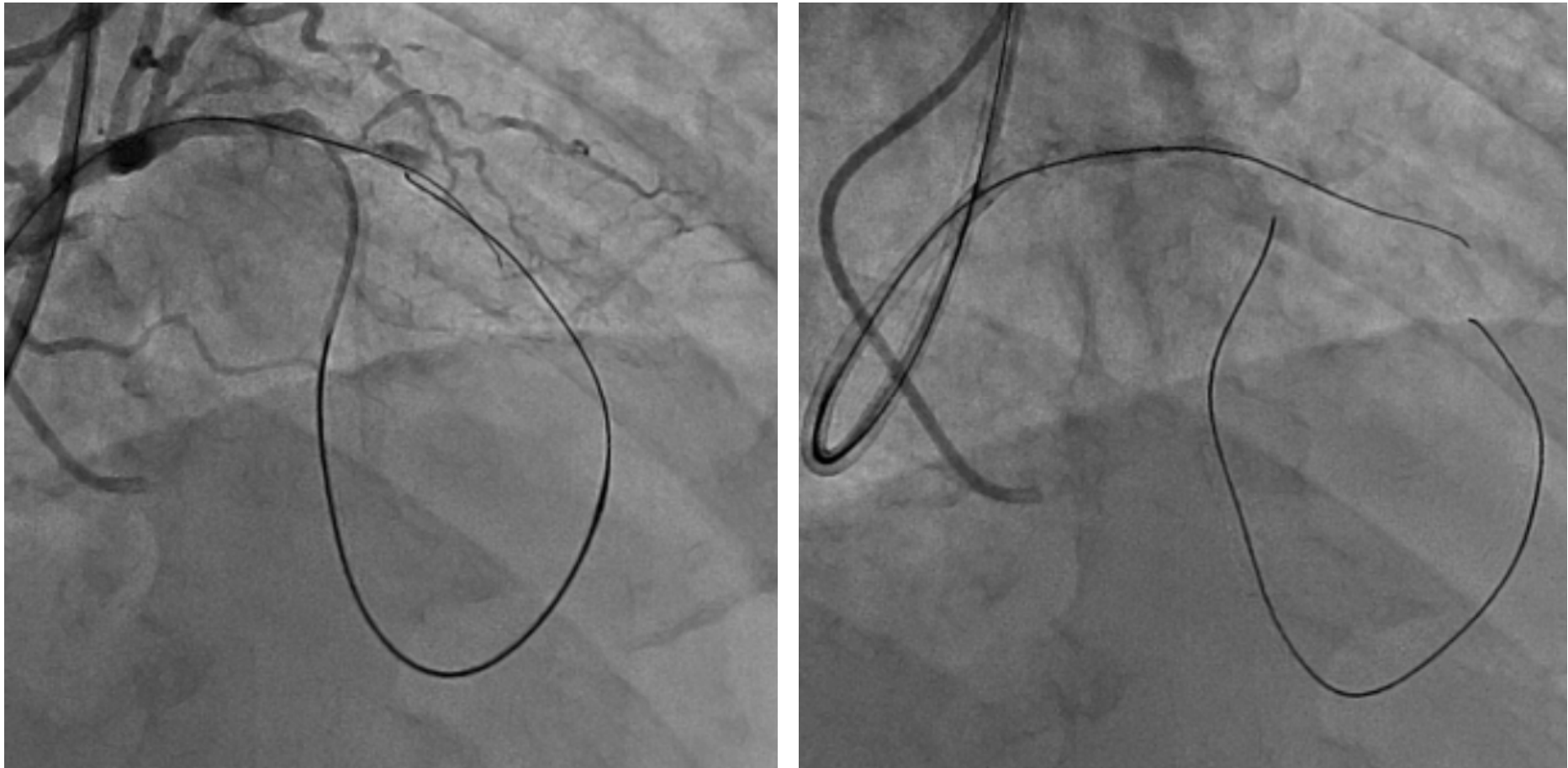
To introduce Corsair, it was necessary to dilate the proximal lesion and ostium of septal channel, however the proximal lesion could not be fully dilated even in very high pressure inflation.

Dye injection from tip of Corsair and successful channel negotiation with a wire



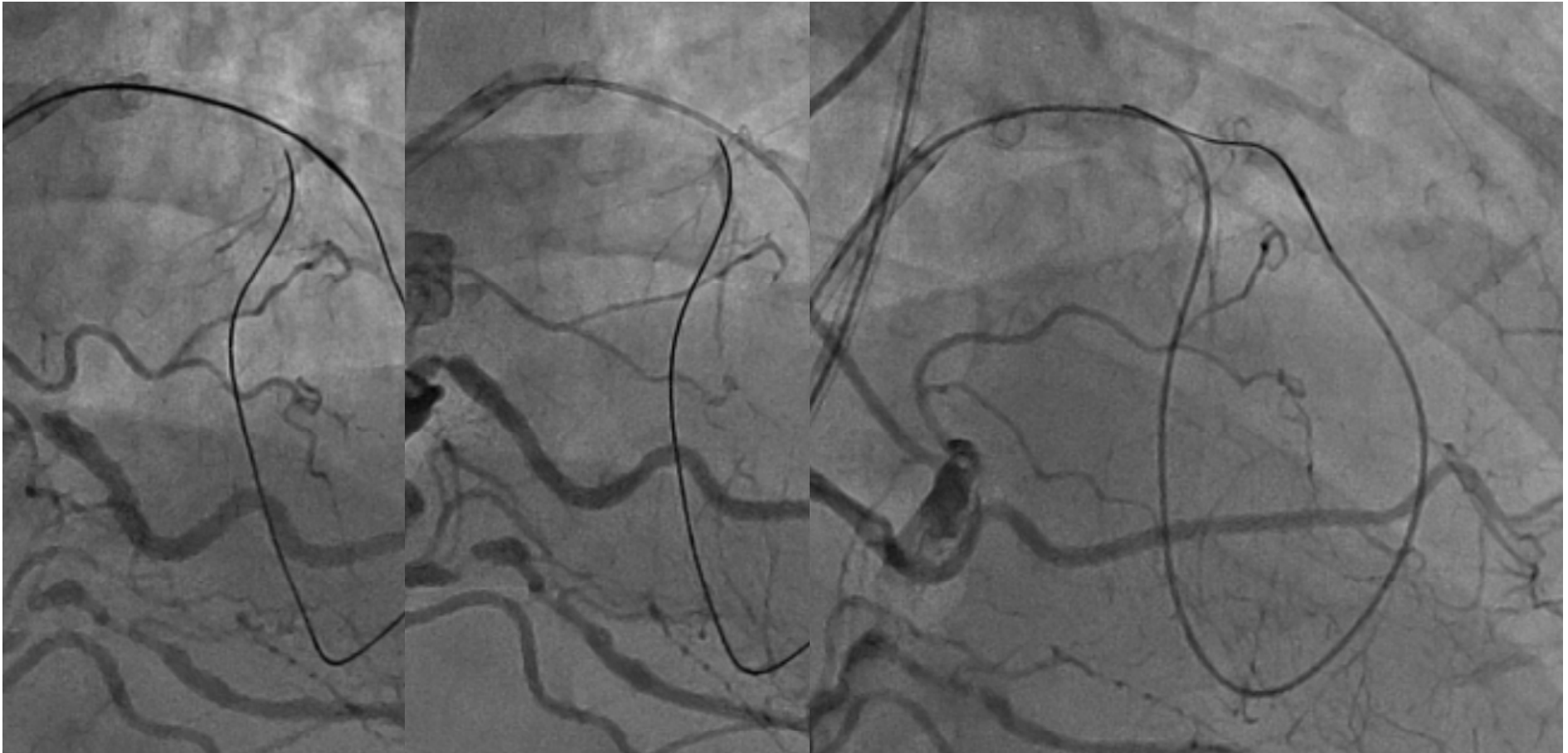
Because of its intrinsic property of Corsair (Lubricity and driving force), I was able to introduce it to the septal channel. After confirming its course, the channel was successfully negotiated with a SION blue.

Introducing a wire to the proximal and attempting reverse CART



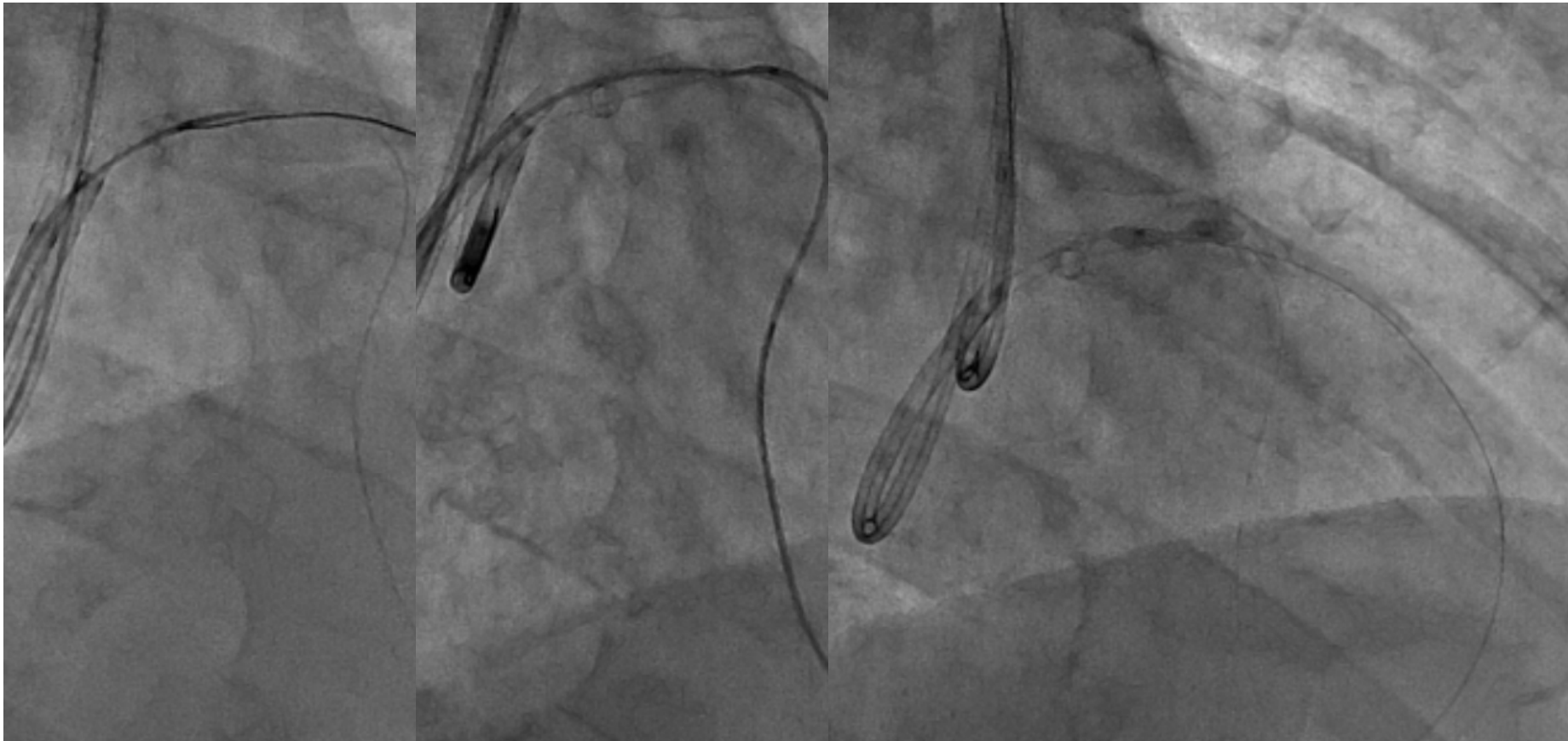
A fielder FC wire traversed through the lesion and reached to the proximal end of the CTO. However, a balloon could not be delivered to the lesion unless I pull the Corsair back to the proximal lesion.

Passage CTO lesion with a retrograde wire



Brief attempt of kissing wire technique failed. Introducing retrograde wire into the antegrade Corsair was also very difficult. After reintroduction of retrograde Corsair and changing the wire to an Ultimate 3, CTO lesion has been crossed successfully.

Proximal lesion interferes device passage

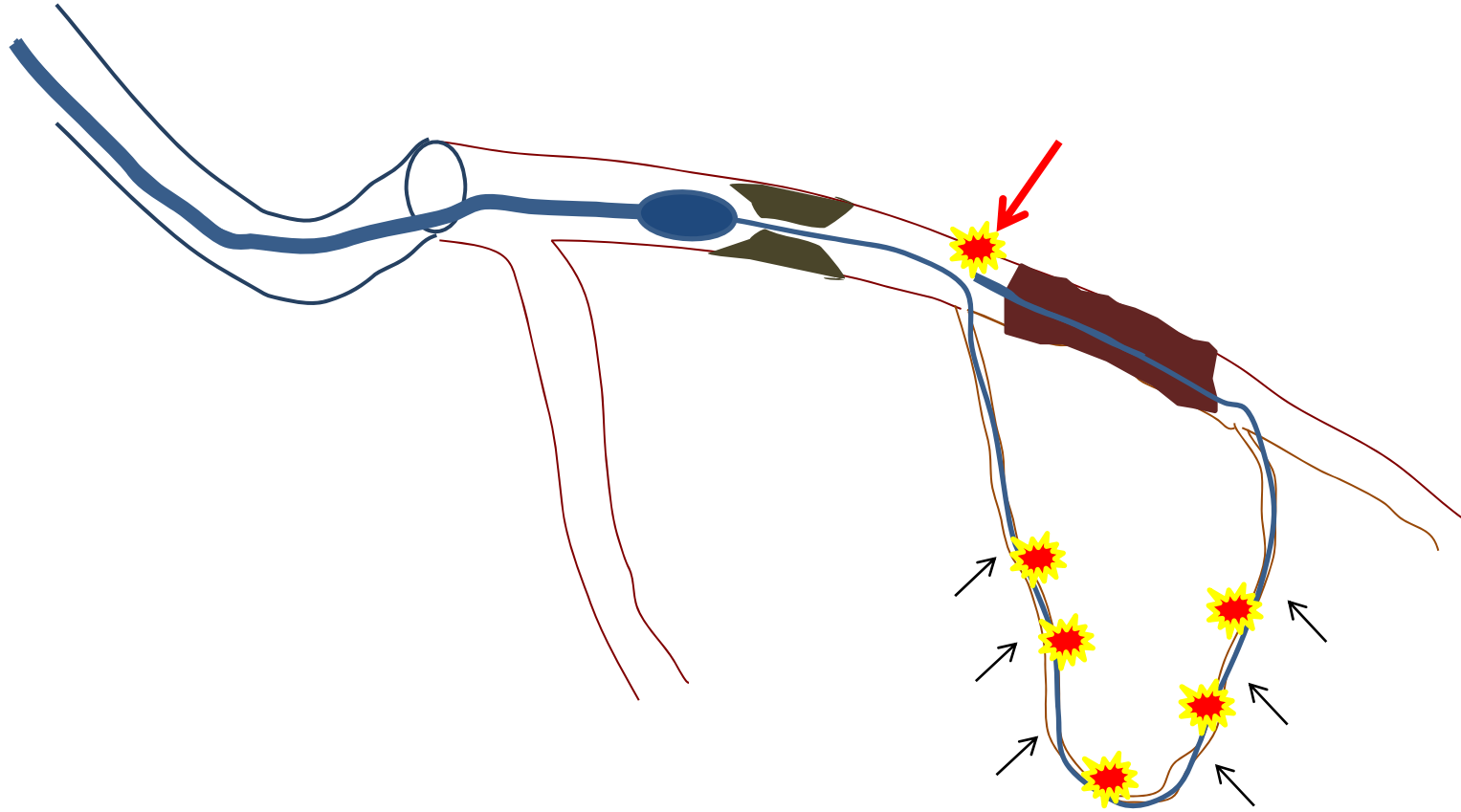


However, wire could not pass the proximal lesion as far as Corsair was in the lesion. After removing the Corsair from the proximal lesion, I was able to advance the wire into the second guide. However, I could not return the Corsair to the guide. The proximal lesion could not be dilated even with extremely high pressure inflation.

How should I do ?

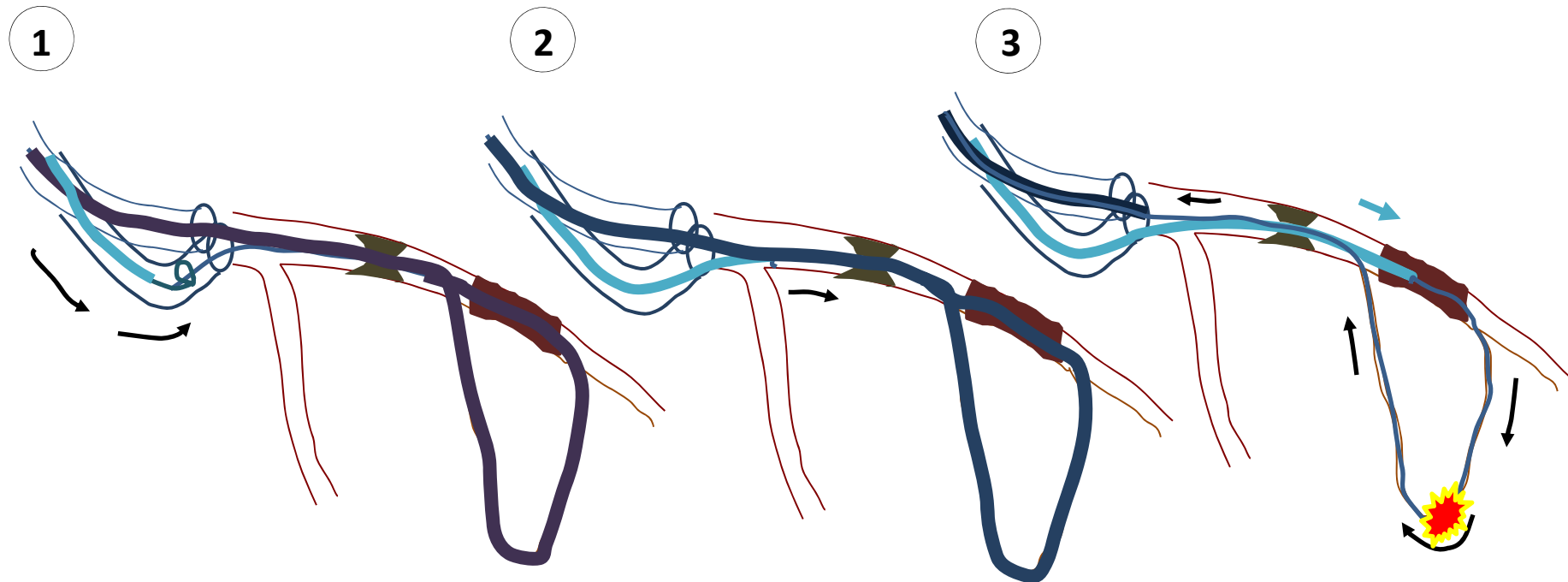
- Externalization using a 330cm RG3 wire (10 system) was difficult because of its poor maneuverability.
- Rotational atherectomy in that situation might cause spasm to the septal channel leading a channel damage.
- Reverse snare technique could not protect the channel by the micro catheter.

Rotational atherectomy



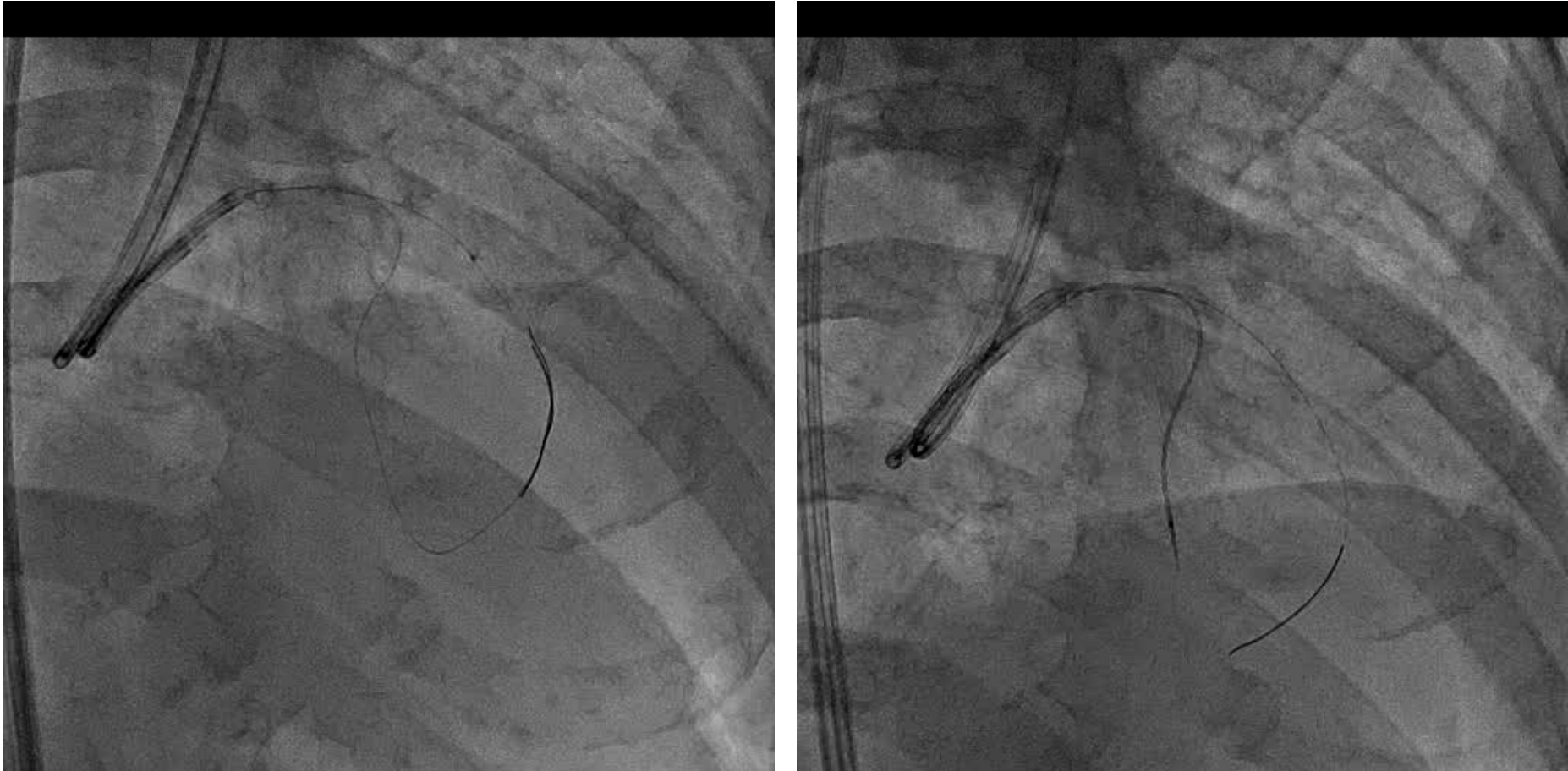
Wire need to place in the tight septal channel which might cause entrapment of the wire. It is important to maintain the position of the wire not to be overlapped by itself.

Reverse snare technique



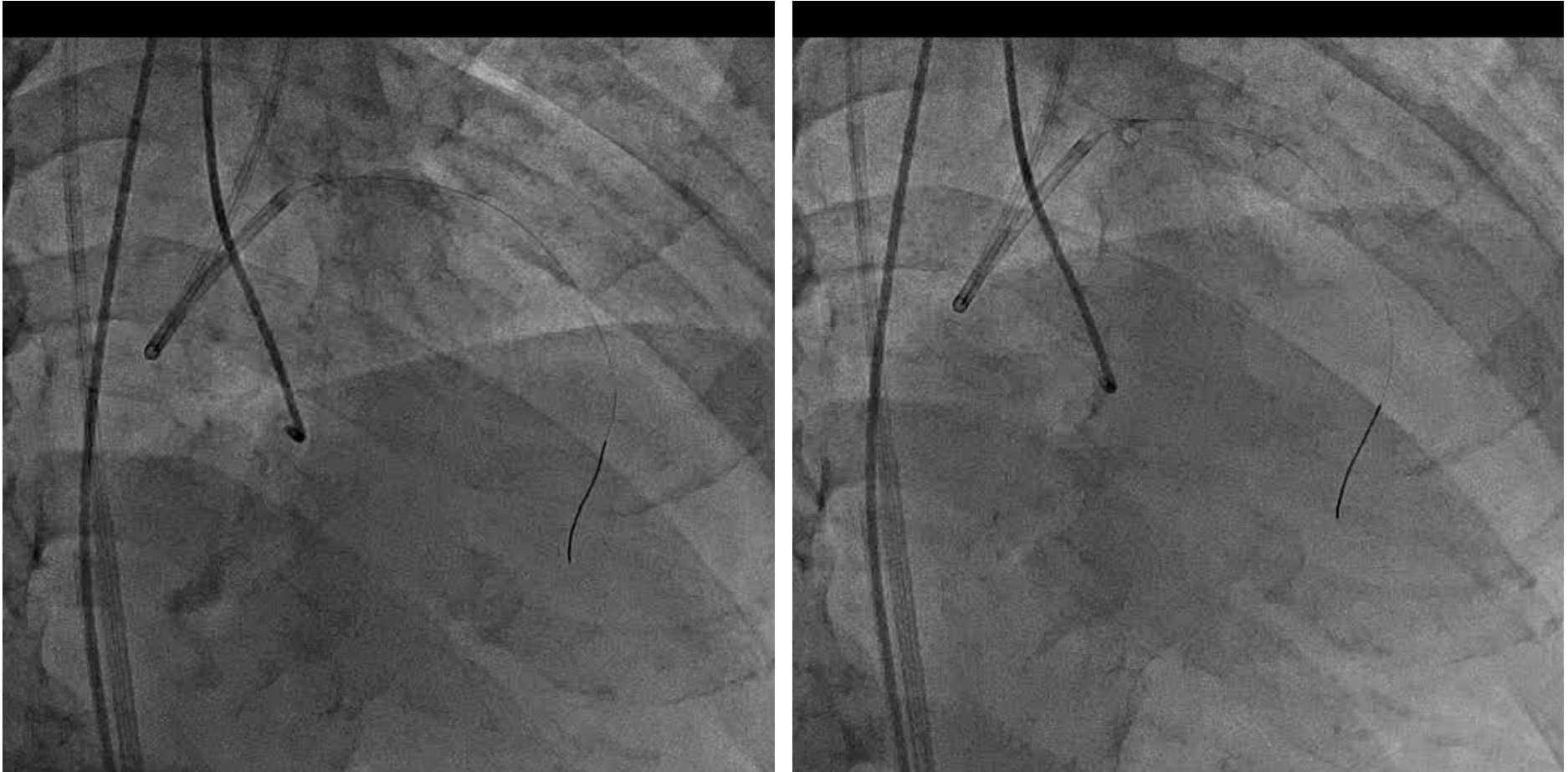
Retrograde wire is captured by Goose neck snare. Retrieving retrograde wire while holding the snare automatically pull the snare catheter into the vessel. However, in this case, to advance the snare, it is necessary to pull the Corsair back to the guide, which exposes the channel to the bare wire and causes possible channel damage.

Kissing wire technique



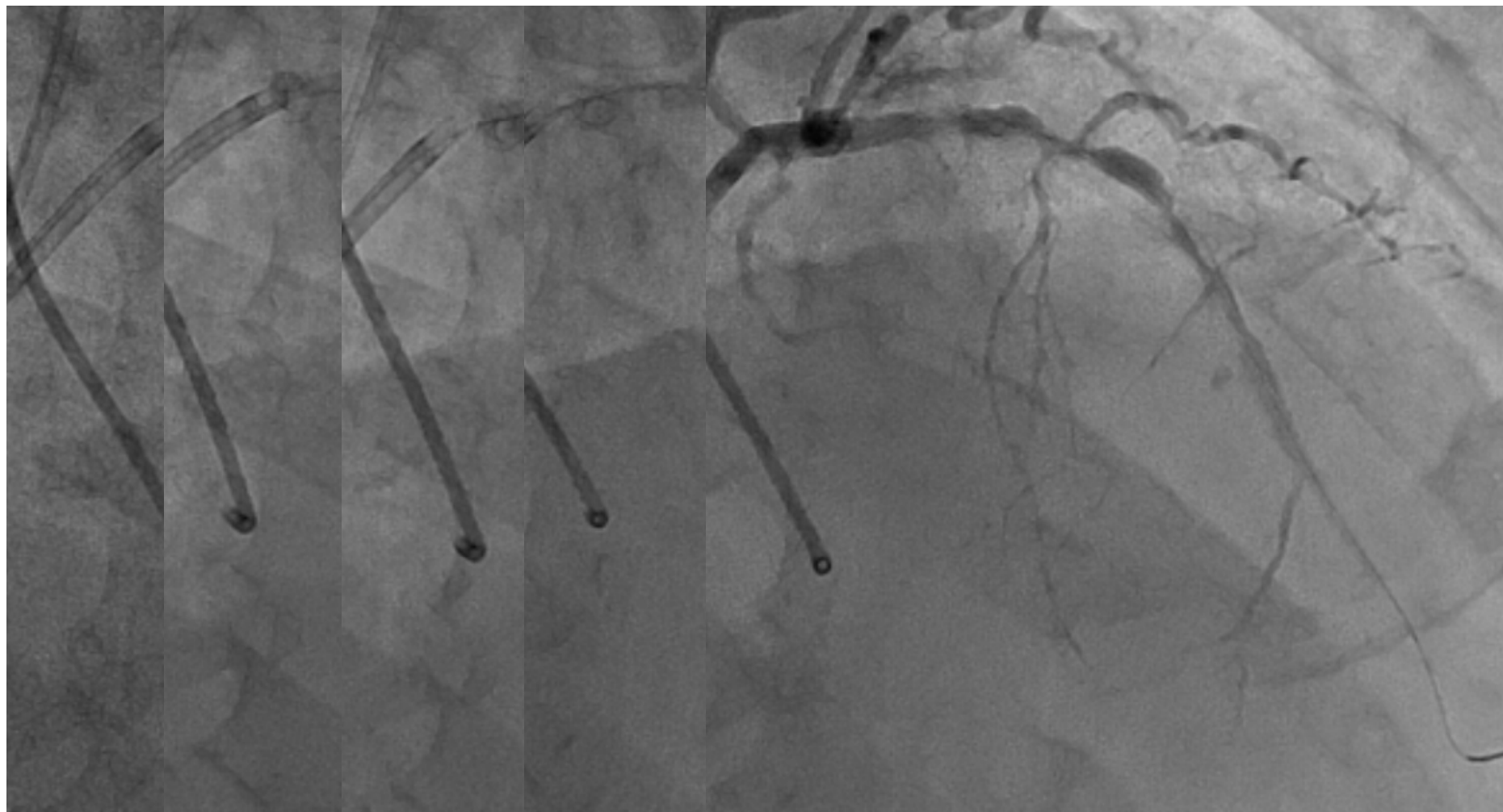
Kissing wire technique using a floppy wire crossed the lesion antegradely, probably because retrograde Corsair already passed the CTO lesion.

Confirmation of the antegrade flow



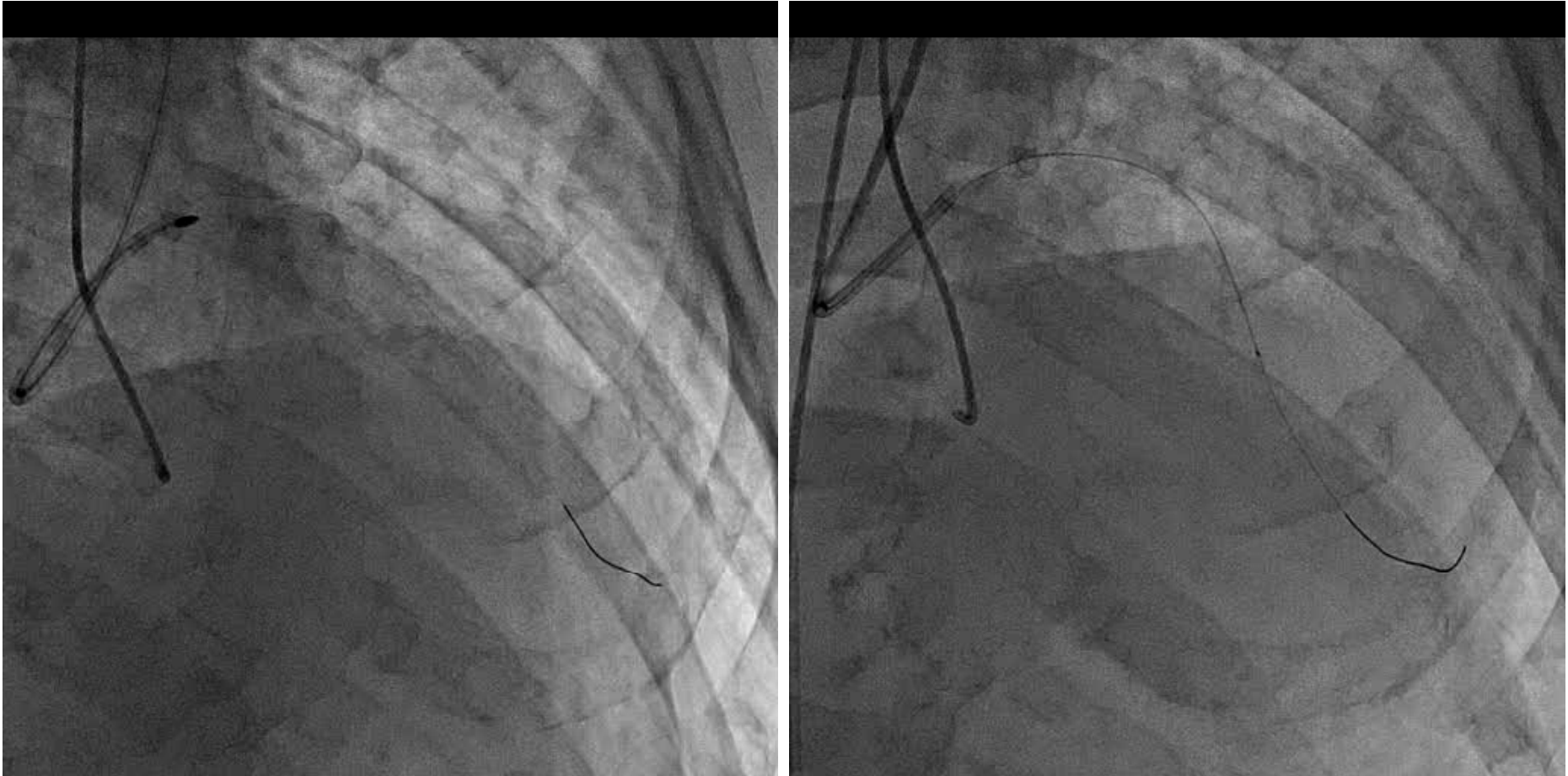
Contralateral contrast dye injection revealed decreased collateral flow which indicated restoring antegrade flow.

Wire crossed to the distal LAD



Lesion was dilated with a small balloon. A fielder FC wire finally crossed toward distal LAD under a support of a Crusade device.

Rotational atherectomy



Rotational atherectomy was then performed to the proximal lesion using a 1.75mm burr.

Final angiograms



Three Promus stents were implanted and successful recanalization was achieved.

Summary

- Incomplete preparation of the non CTO lesion makes subsequent procedure very complicated.
- It is important to do complete preparation for any additional lesion in case of unexpected situation.