Successful Recanalization of Proximal LAD CTO in Patients with History of Multiple CTO Intervention Failure
: “The Real Never Give Up”

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Clinical Information

1. CC; A 52 years old male had history of recurrent chest pain and dyspnea on exertion.
2. Risk Factors

   ; Hypertension (+), Diabetes (-), Smoker (-)
3. Previous PCI History

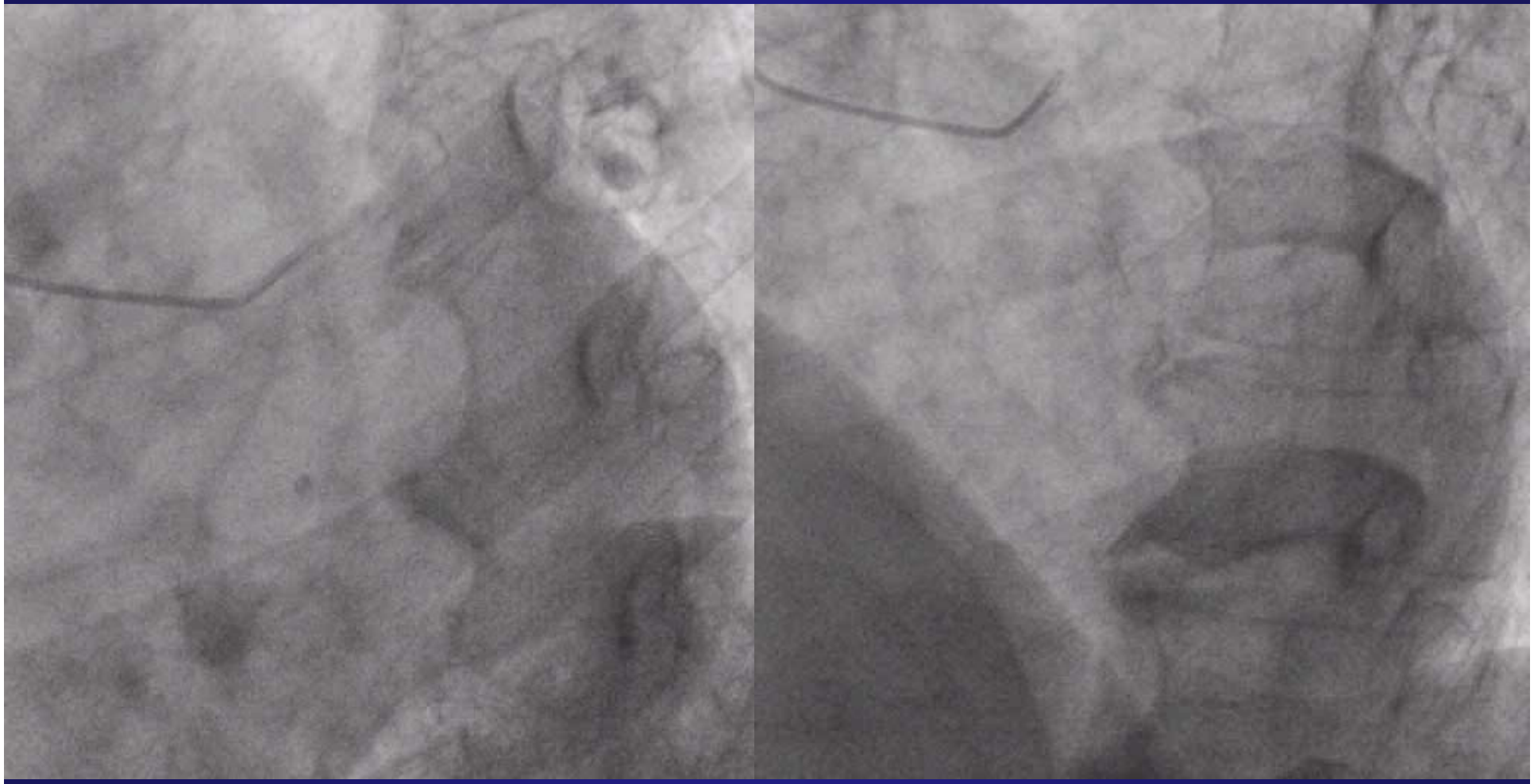
   ; Previous 2 failed attempts for CTO PCI at US
4. Lab Finding

   1) Biochemistry & Serology; unremarkable.

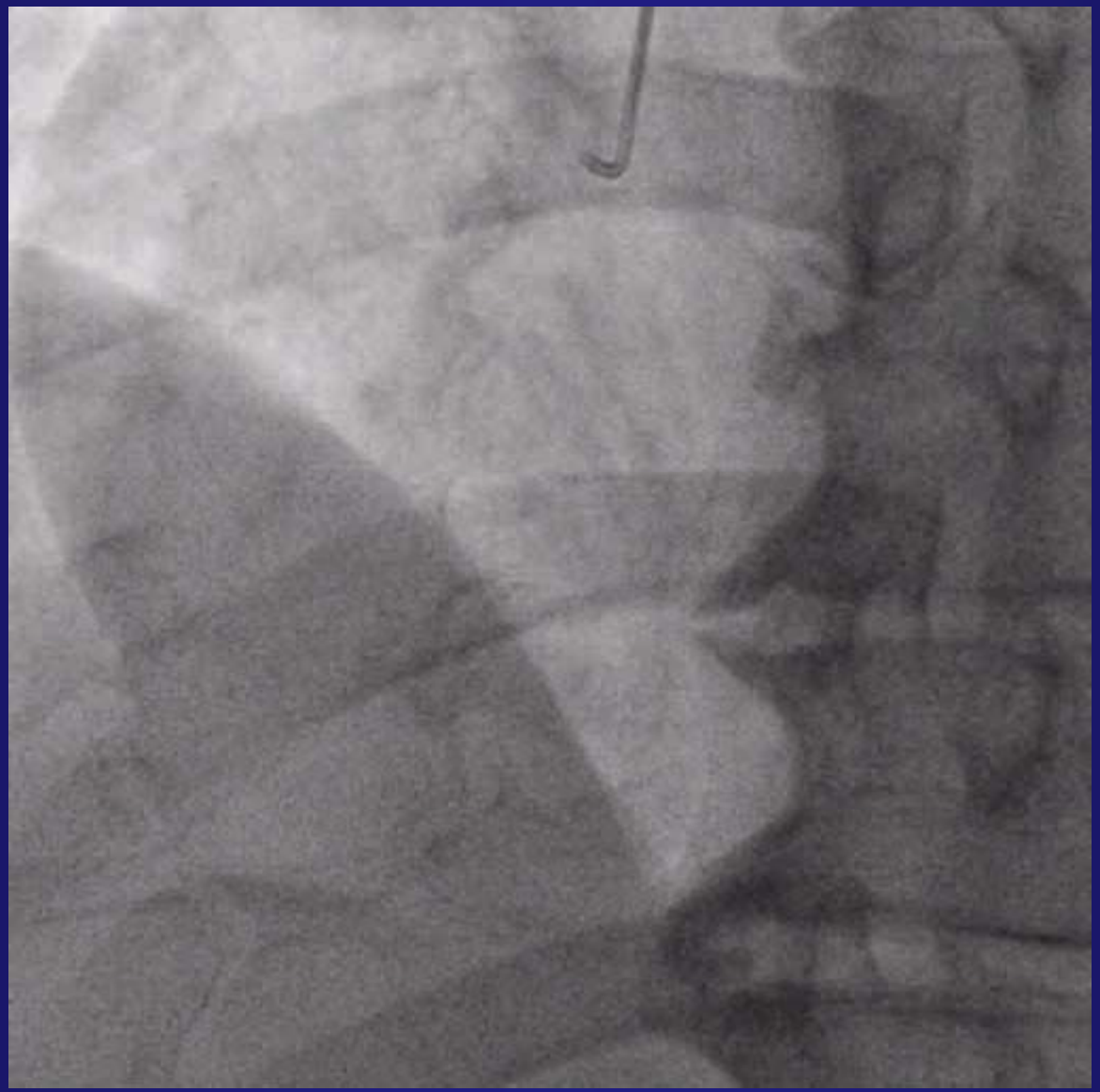
   2) EKG showed AF with controlled ventricular rate.

   3) Echocardiography showed normal LV systolic function (EF:60-65%) without definite RWMAs.

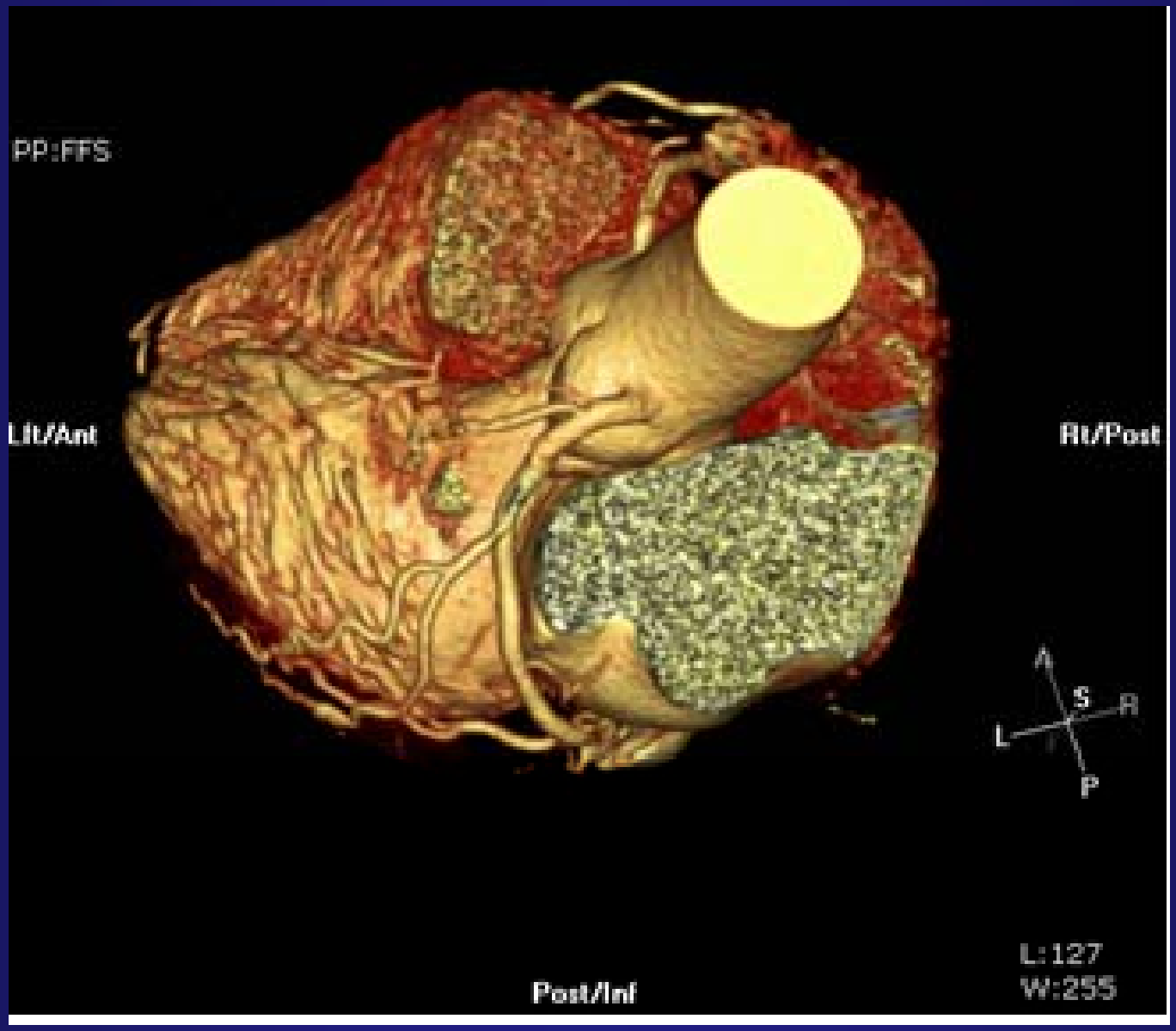
Baseline CAG; LCA



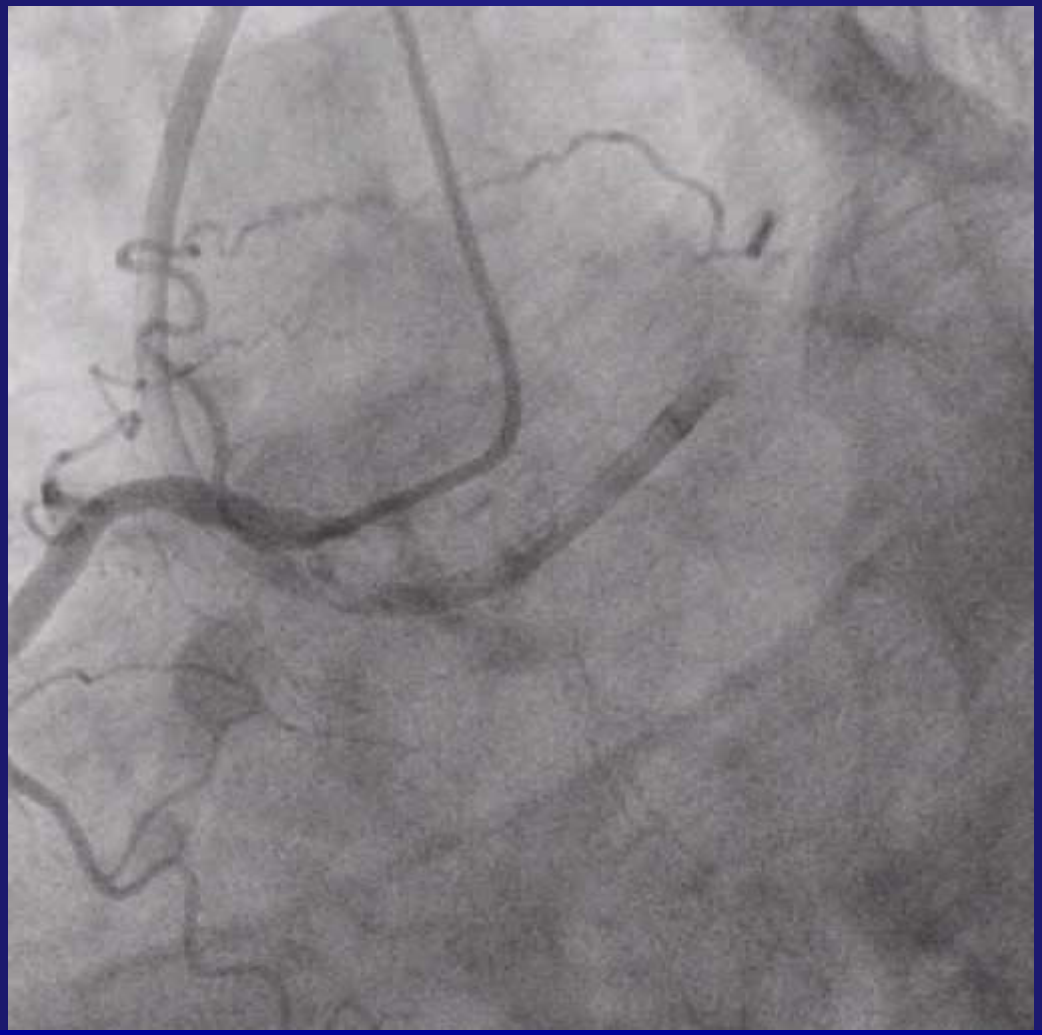
Baseline CAG; RCA



Coronary CT angiography

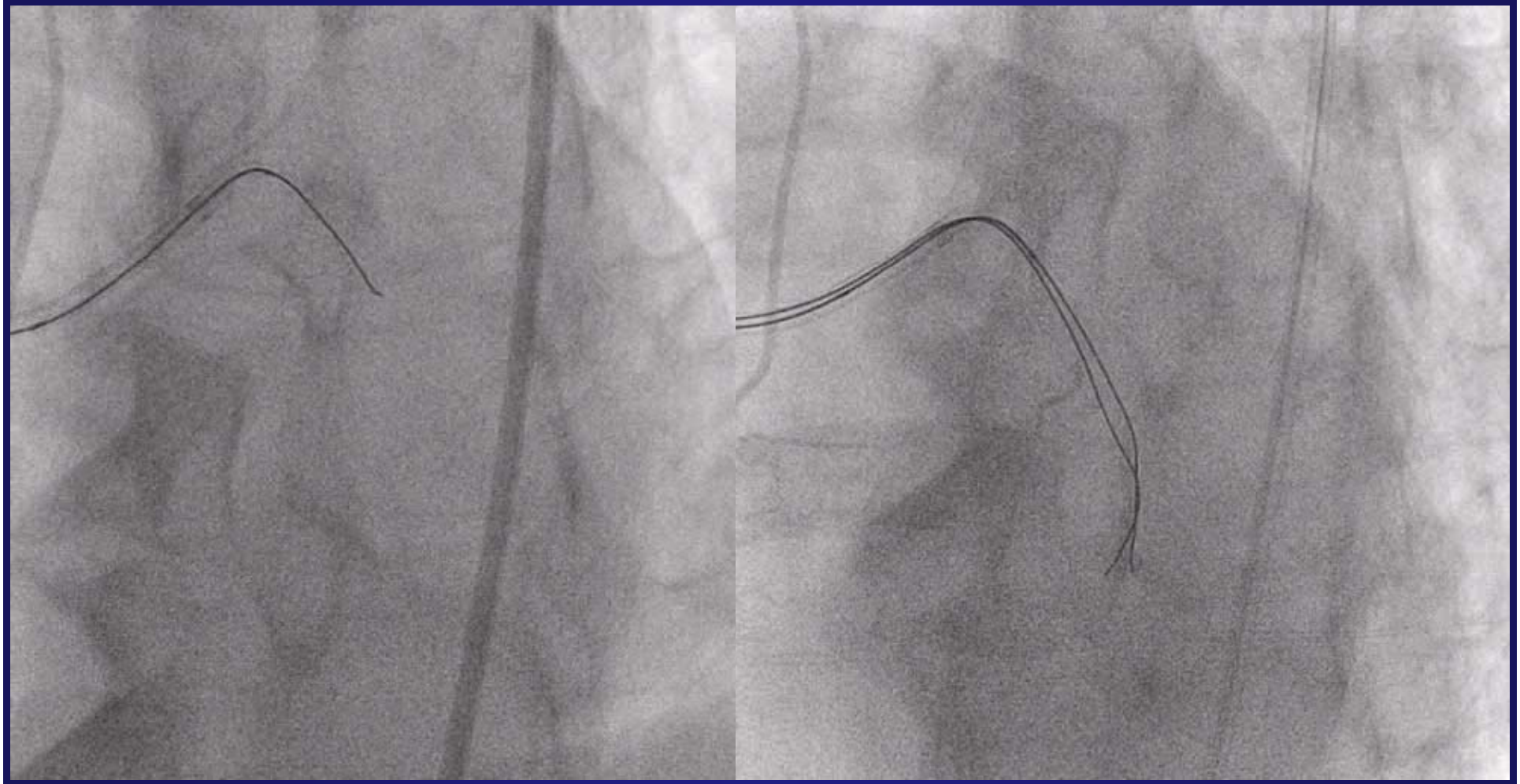


Bilateral Angiography



7F EBU 3.5 for anterograde approach &
Rt radial a, 6F, 90cm JR4 SH-->AL-1 SH for retrograde approach

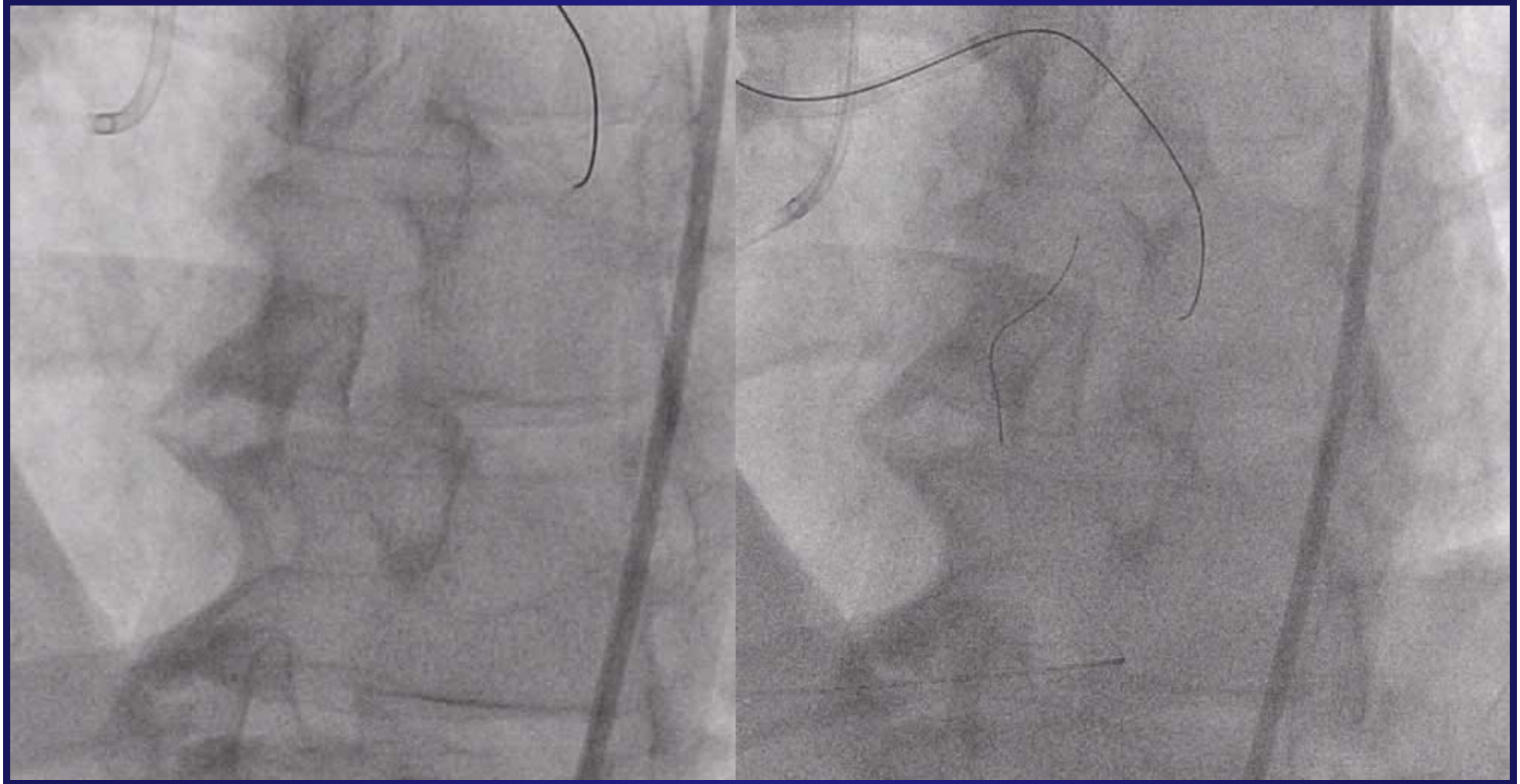
Anterograde Wiring



Anterograde wiring was attempted using Miracle 6, Conquest pro, Fielder FC

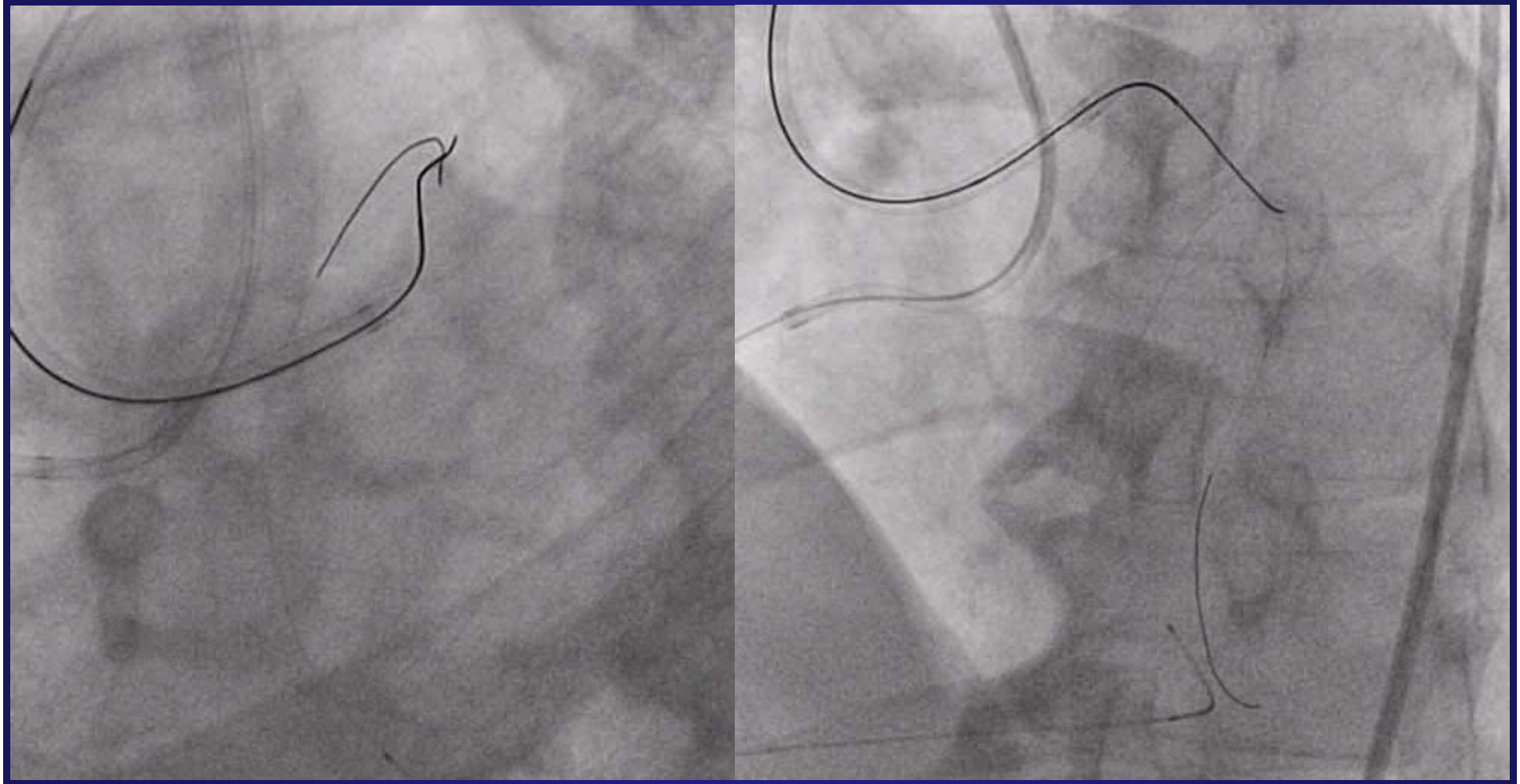
continuous intimal dissection with pseudo lumen navigation by ”SeeSaw technique”

Retrograde Wiring



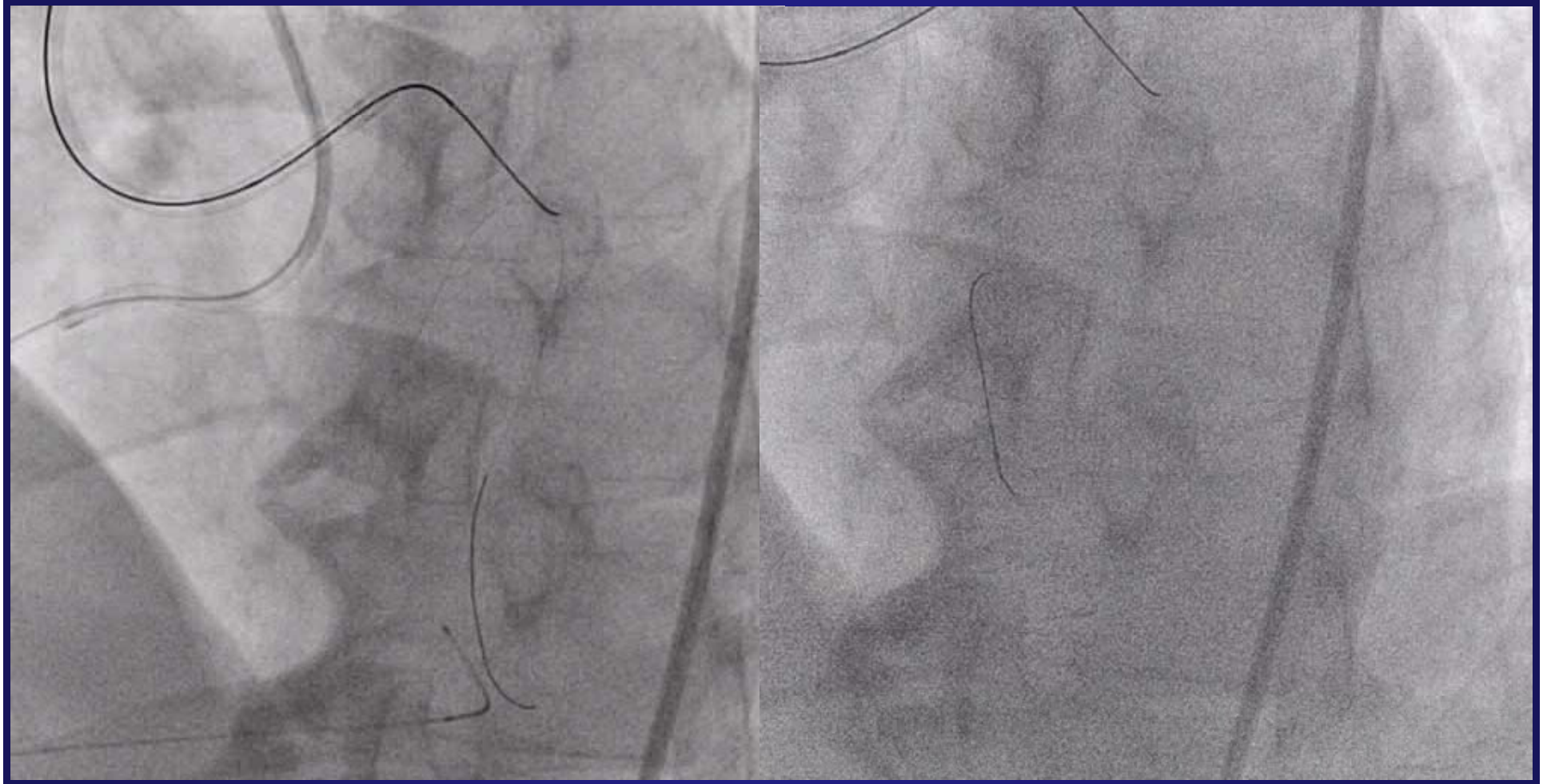
Retrograde approach was attempted ; multiple Fielder FC & XTs wires were used under the microcatheter support. Entering to distal LAD was successful from the retrograde wire

Retrograde Wiring



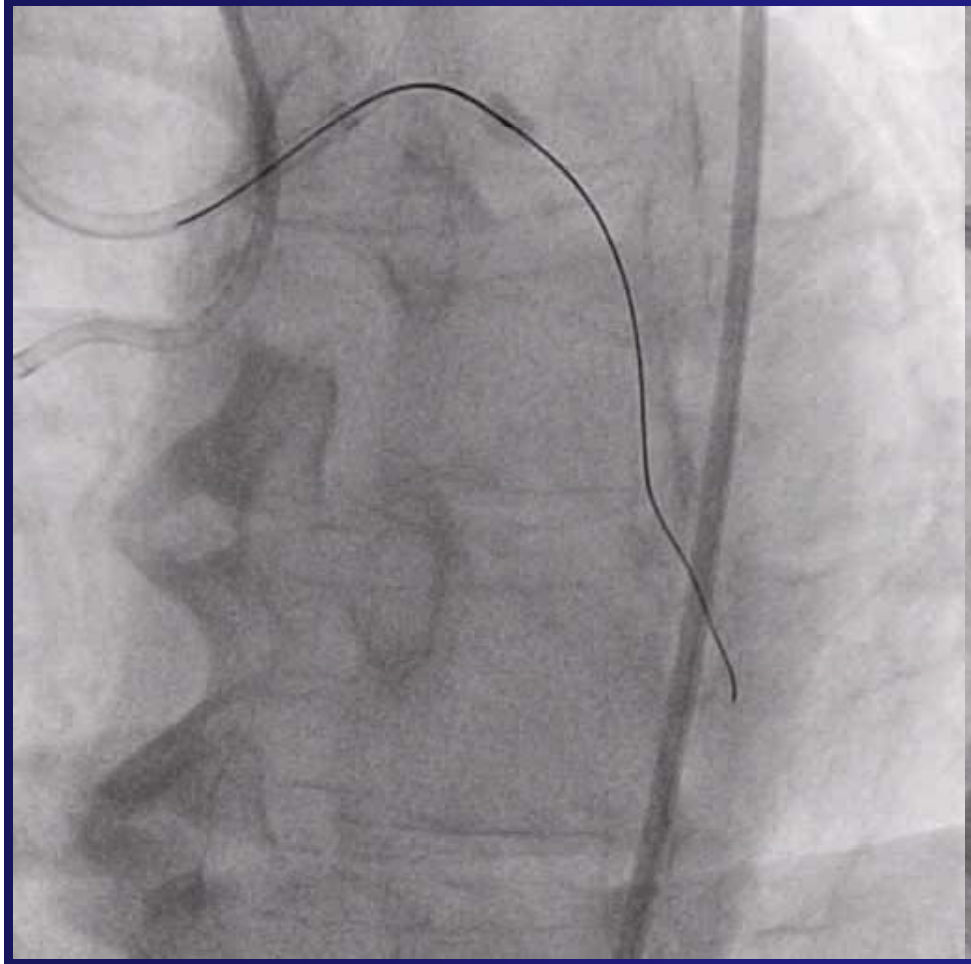
Wiring to LM was not feasible due to minimal stump toward LM and tortuous course

Retrograde Failure

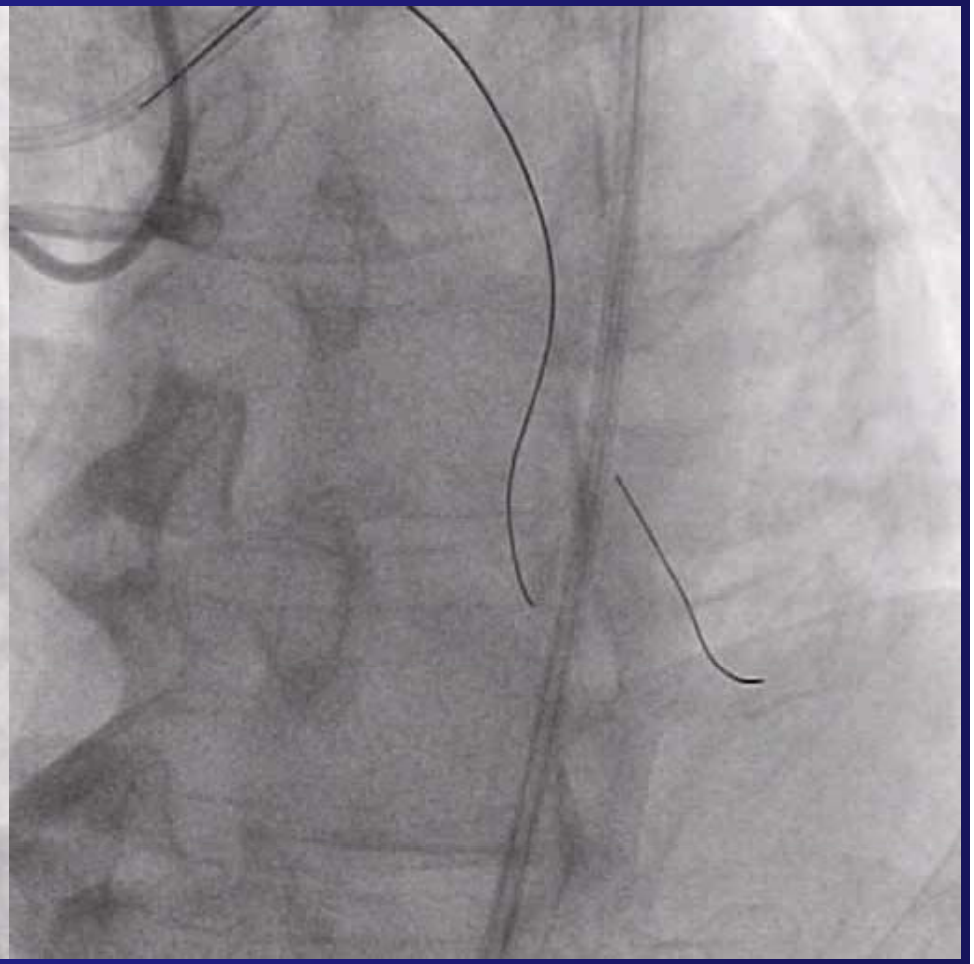


Multiple septal dilation was done using Ryujin 1.25X15mm for microcatheter positioning, however due to tight septal course, microcatheter could not navigate through the 0.014 wire to LAD.

Again antegrade approach

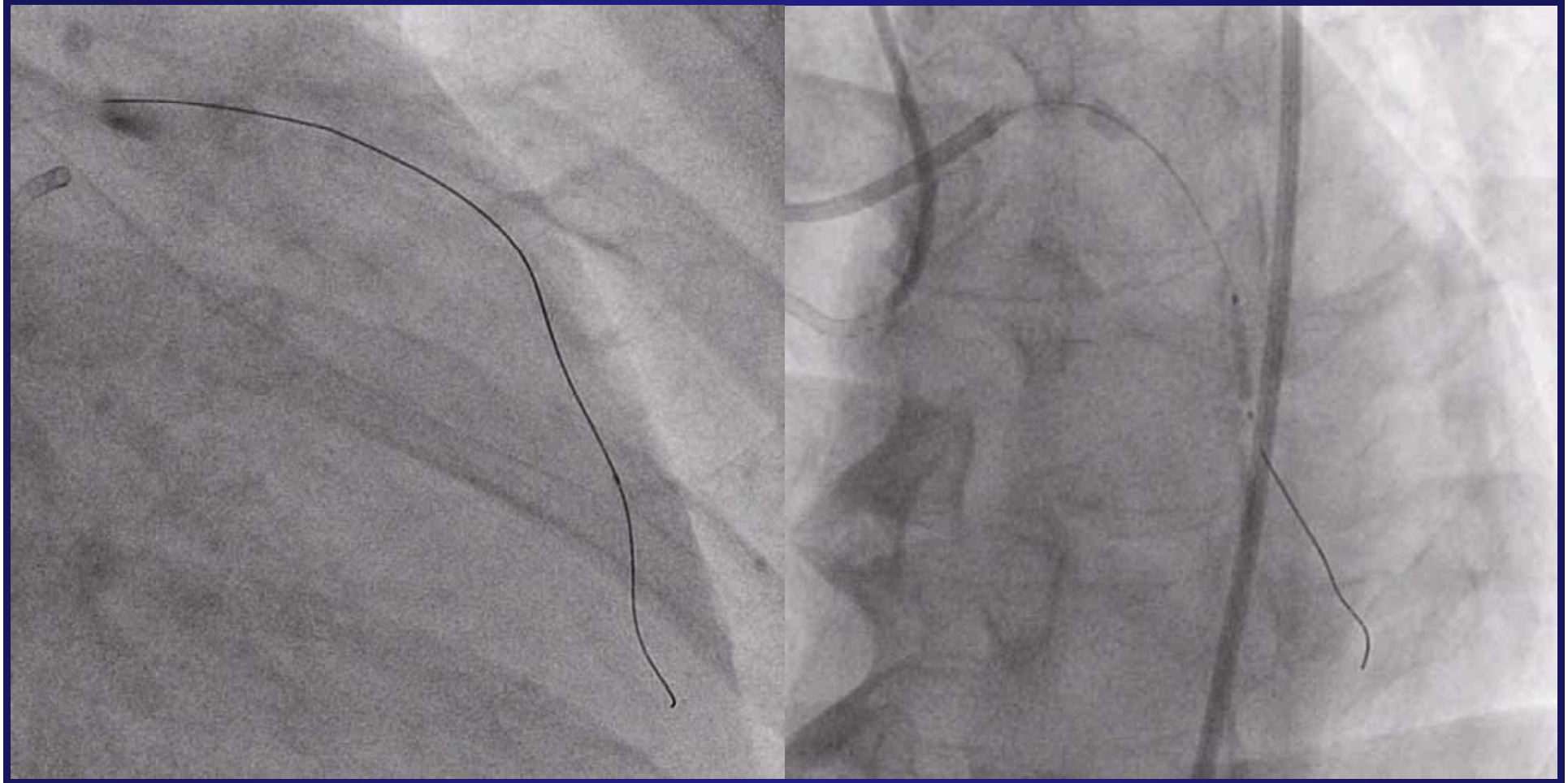


Miracle 6 successfully crossed into distal LAD



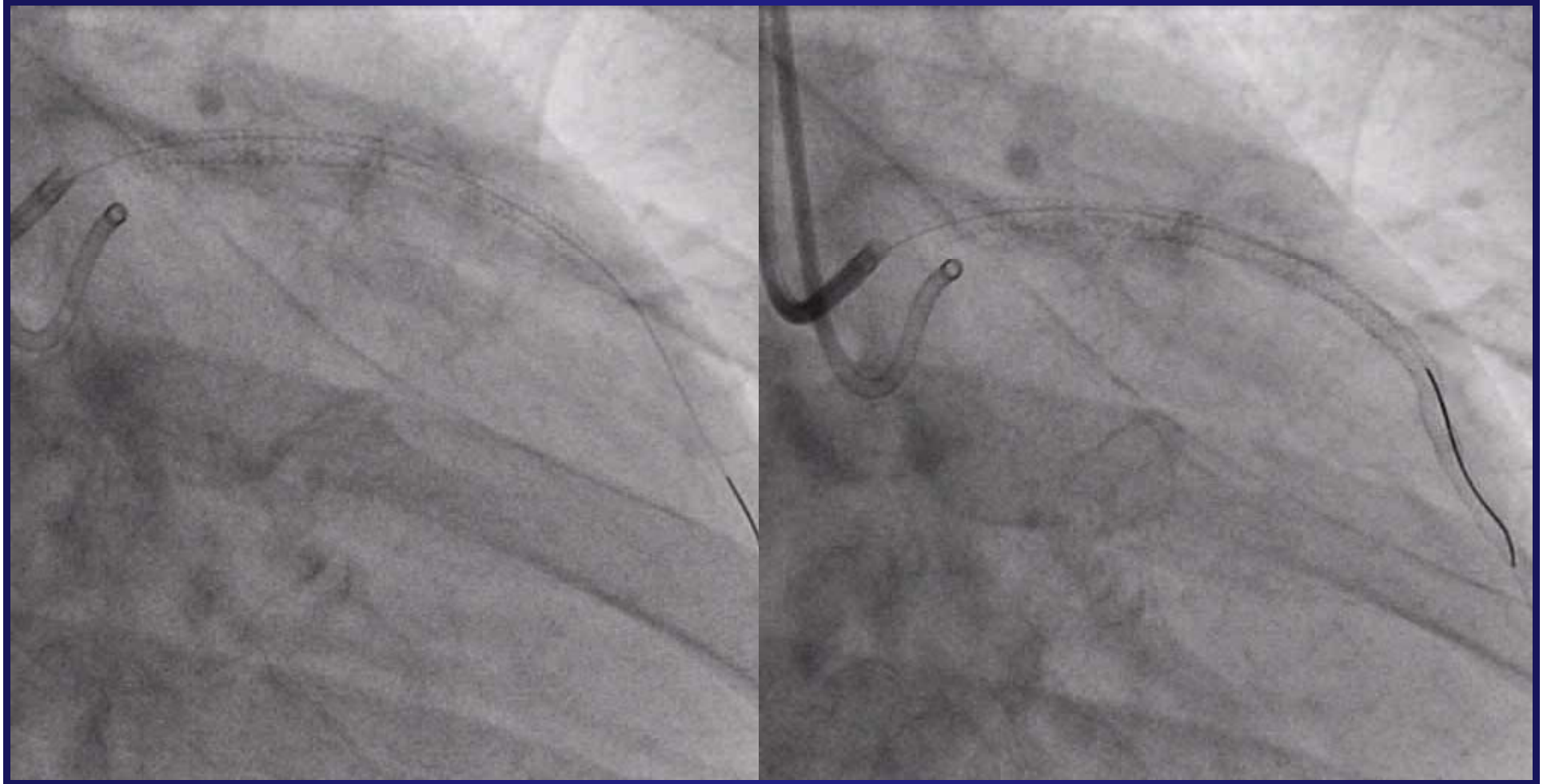
Miracle 6 & Runthrough (for probing side branches) were used as parallel wiring

Predilation



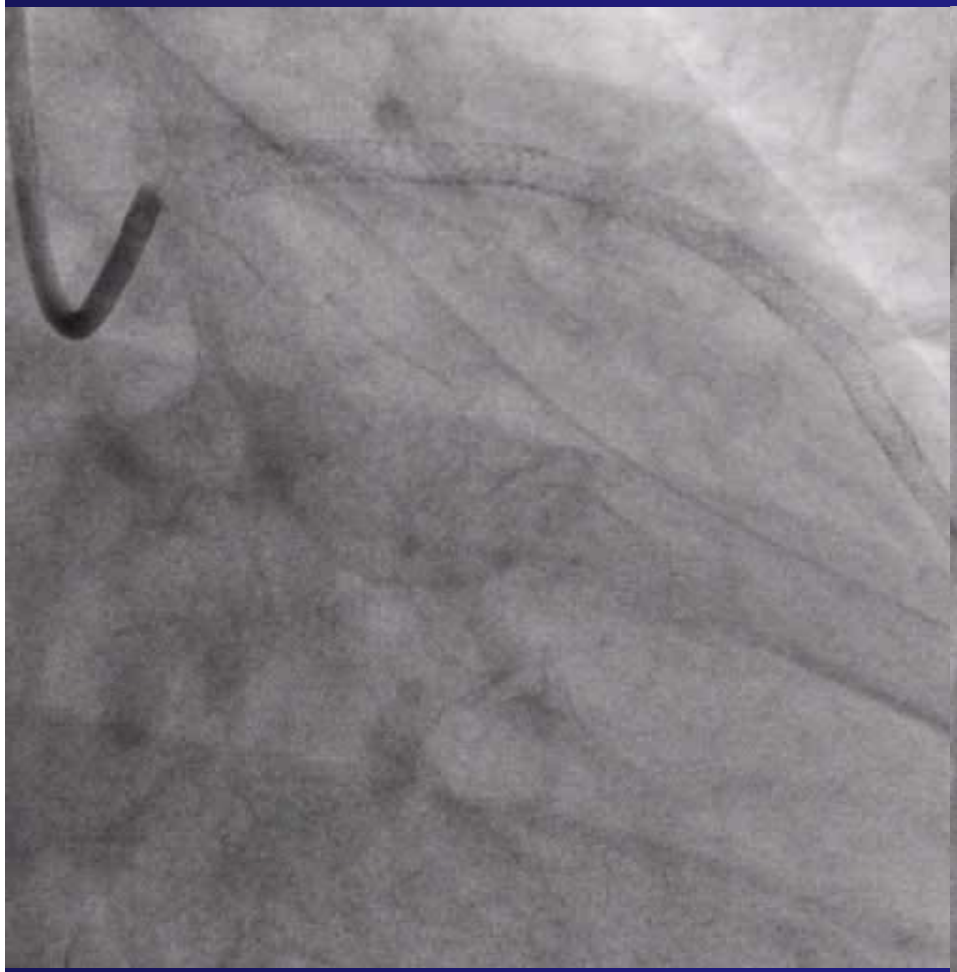
Sequential predilation using Ryujin 1.25X15mm, Ryujin 2.0X15mm, Tamarine 2.0X15mm

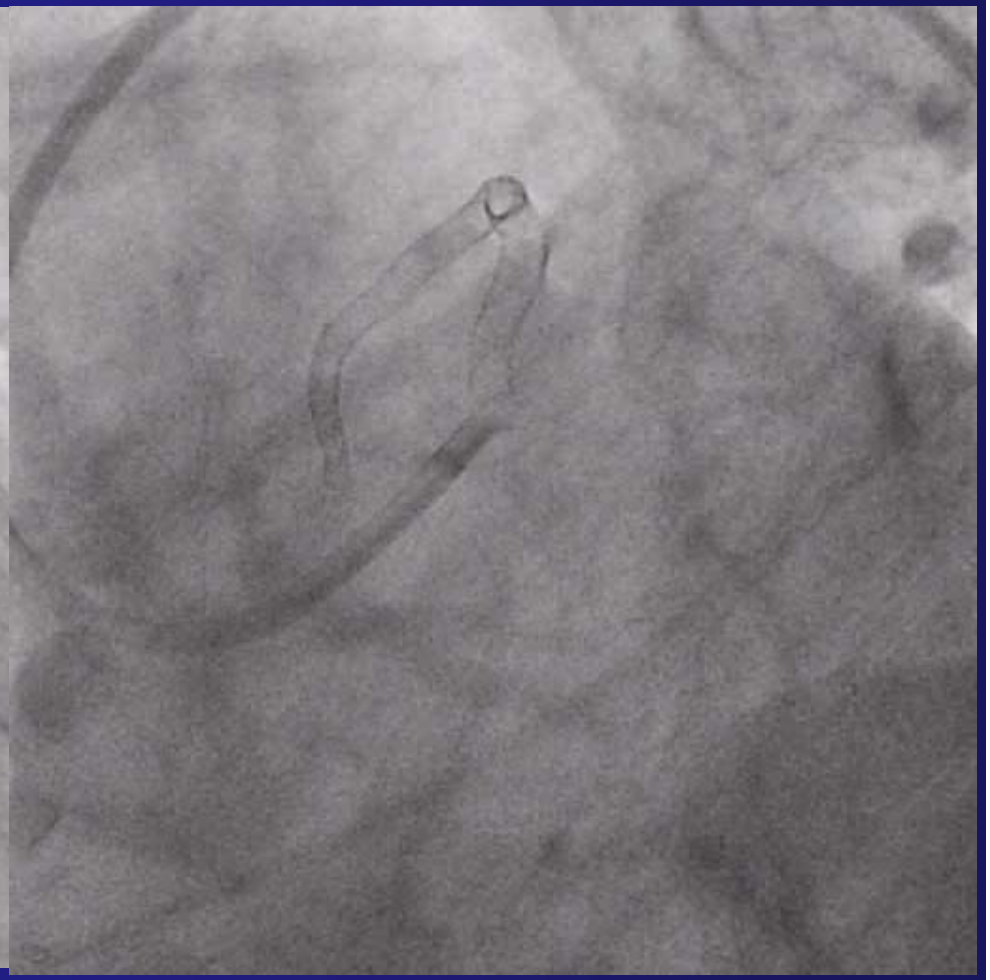
Stenting



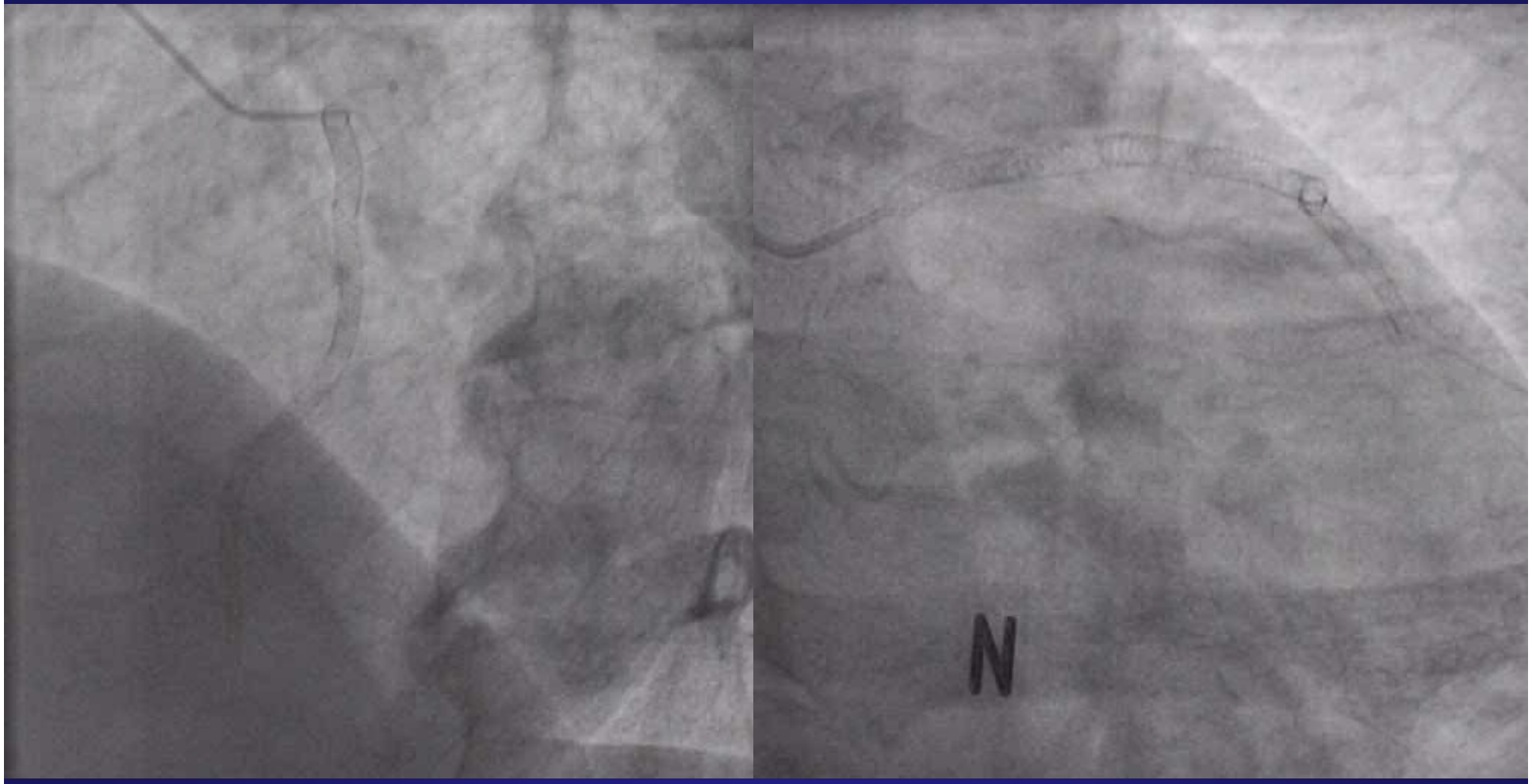
4 sequential overlapping Promus elements stents were deployed from LAD os to distal LAD (3x28,3x28,2.75x28,2.5x28)

Final results





Six-month Follow up CAG



Summary

1. Retrograde failure

1) Selection of less ideal septal channel; more distal septal branches are preferred.
2) Lack of enough device designed for retrograde approach; wires (sion, Fielder XT-R) and Corsair

2. Suboptimal anterograde approach

1) Long intimal dissection primarily impacted from previous multiple anterograde CTO wiring

   → caused long metal jackets

2) IVUS guided repositioning of wire should be attempted.

Discussion

1. How can we negotiate previous multiple false channel anterogradely when we do repeat CTO intervention?

2. Retry for Failed CTO

1) How long should we wait?
2) Anterograde vs. Primary Retrograde?
3) How to minimize the length of wire-induced intimal dissection?