How to treat critical LM disease with co-existing challenging downstream lesion safely

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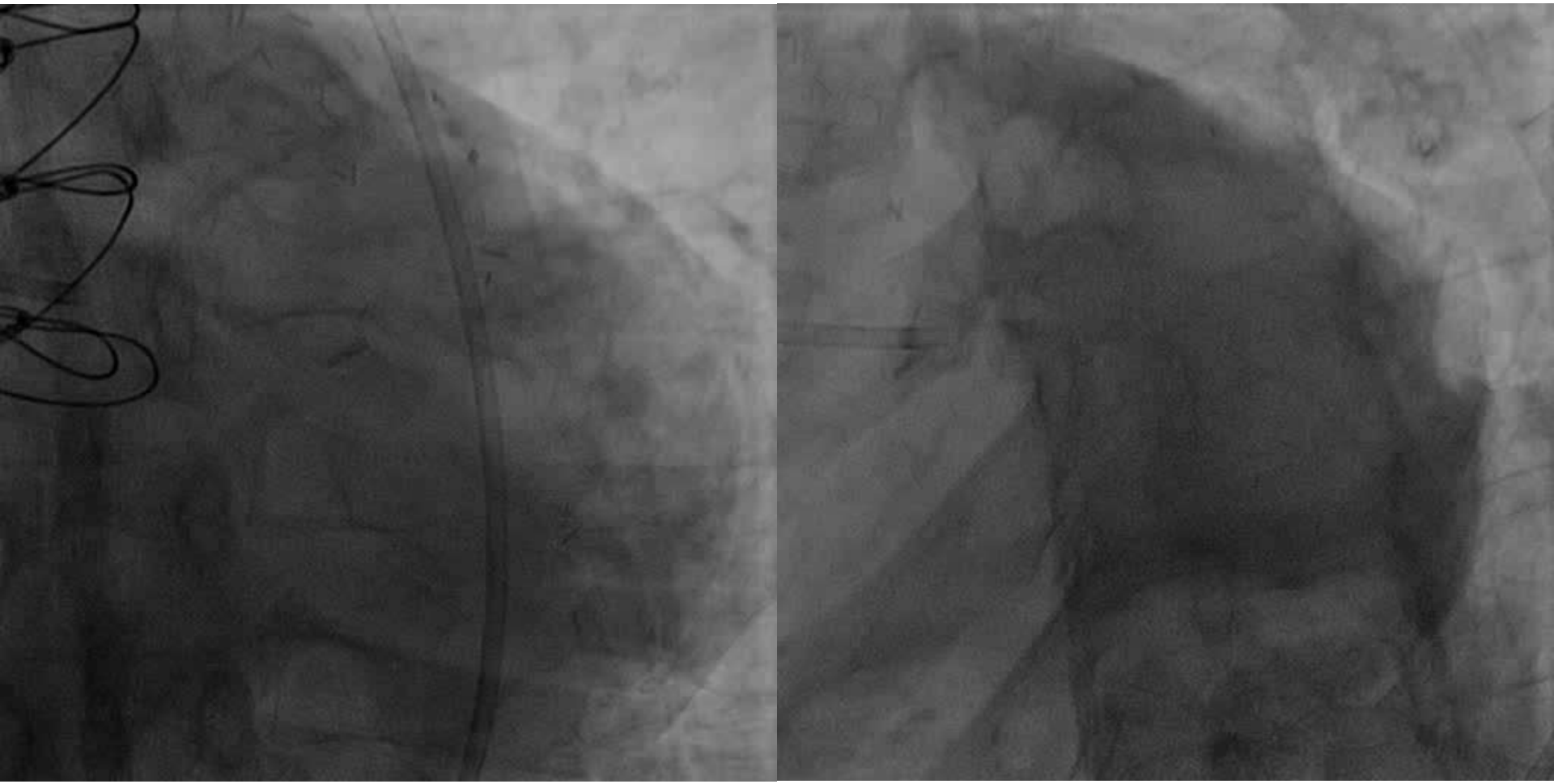
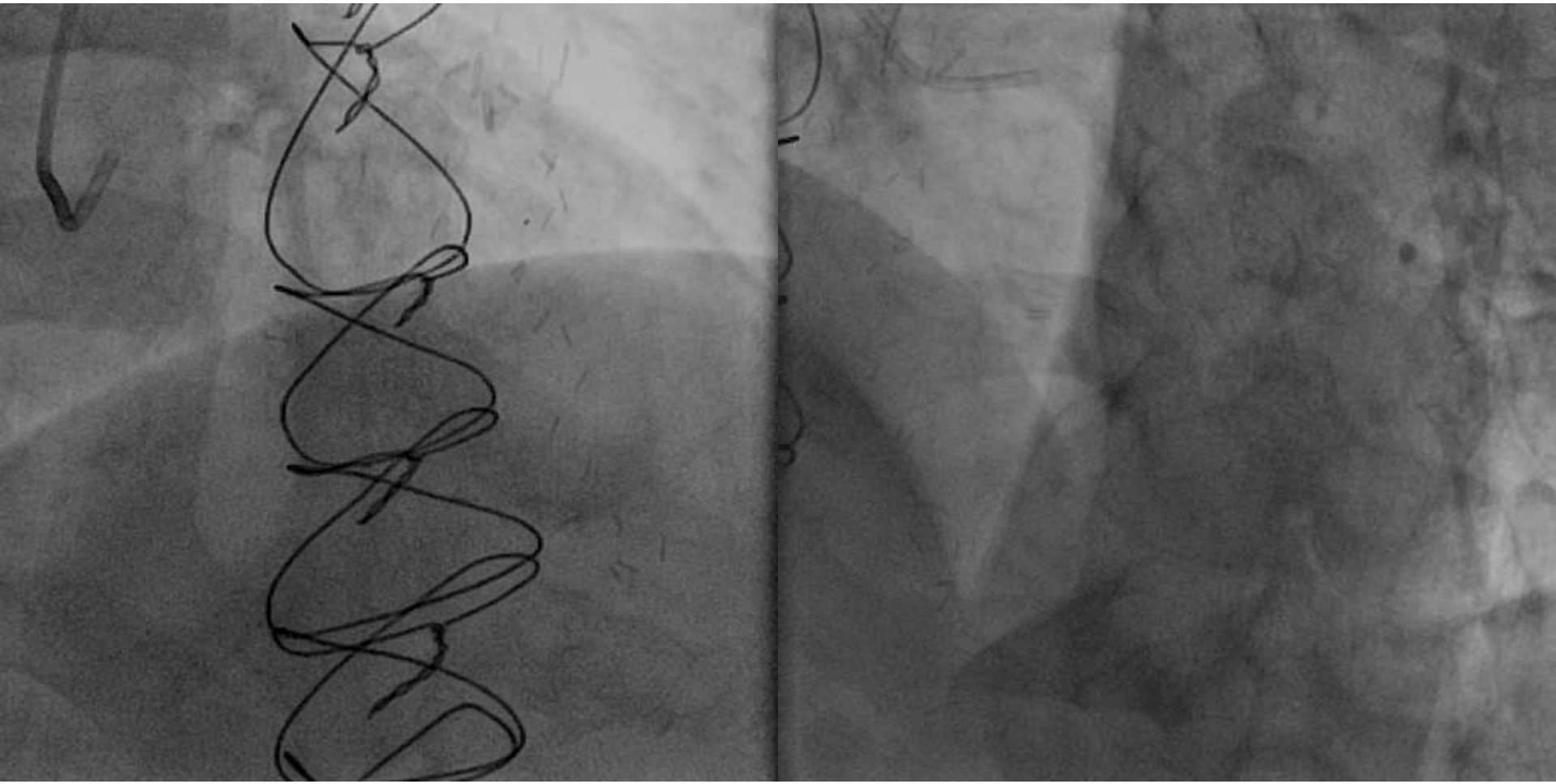
- 78 y/o male
- Risk factor: smoking and dyslipidemia
- s/p CABG in April 2012: LIMA to LAD and vein graft to OM
- Presentation: unstable angina in Jan 2015
- Cardiac echo: normal LV wall motion, EF: 57%
- Cr: 1.1

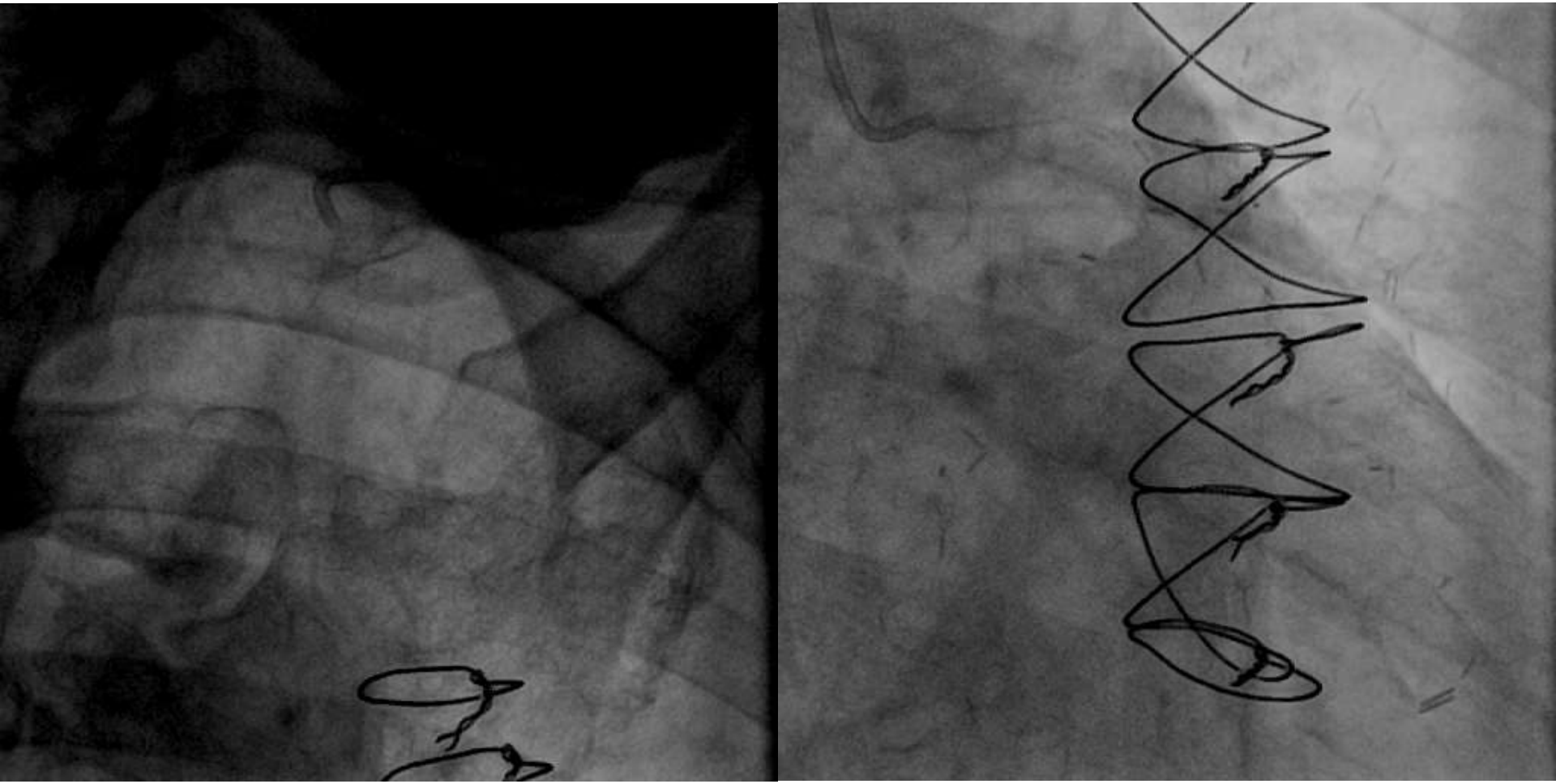
Dx LCA: Critical stenosis at d-LAD



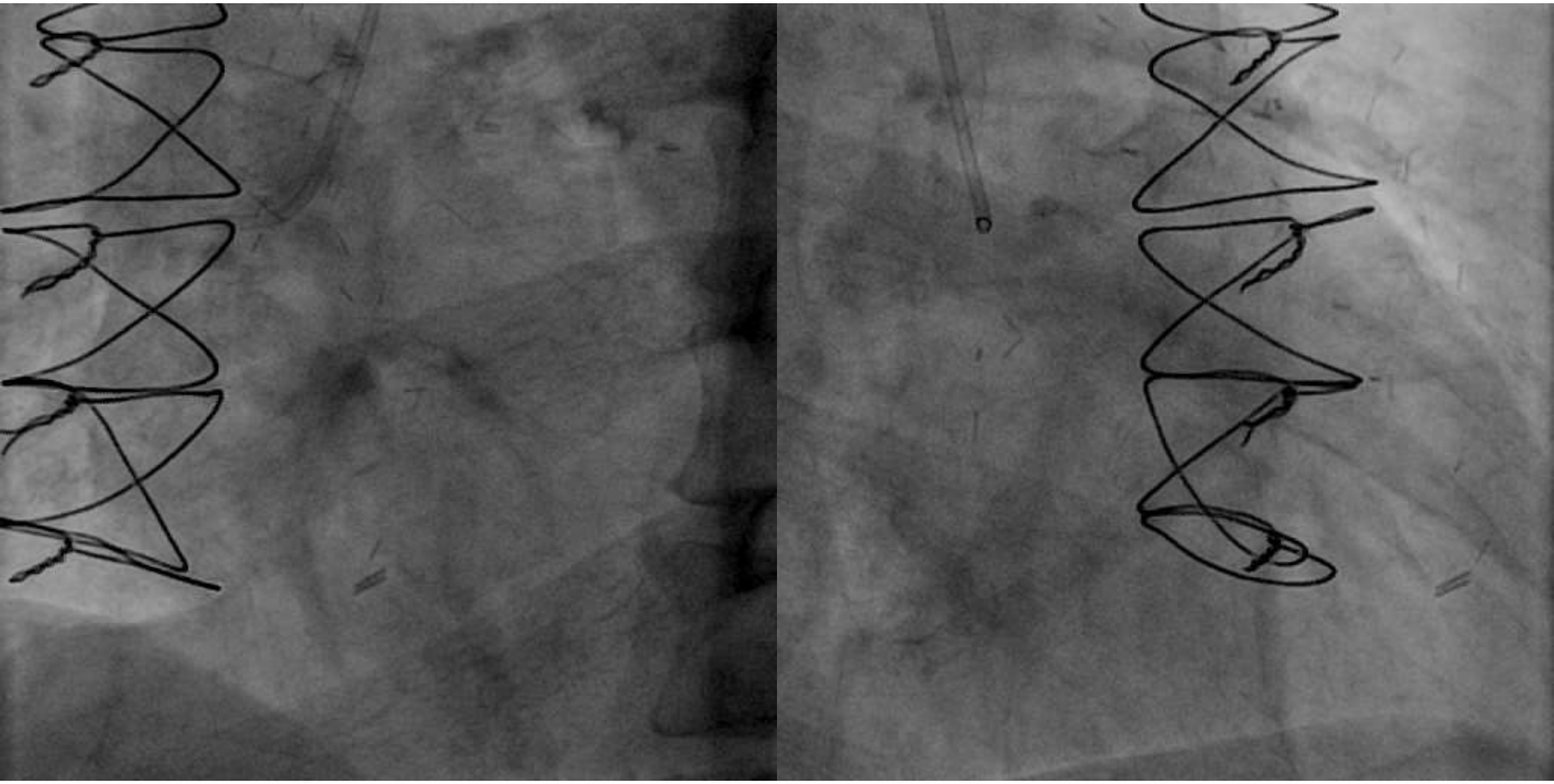
Dx LCA: m-LAD lesion with acute angulation



LIMA and vein graft



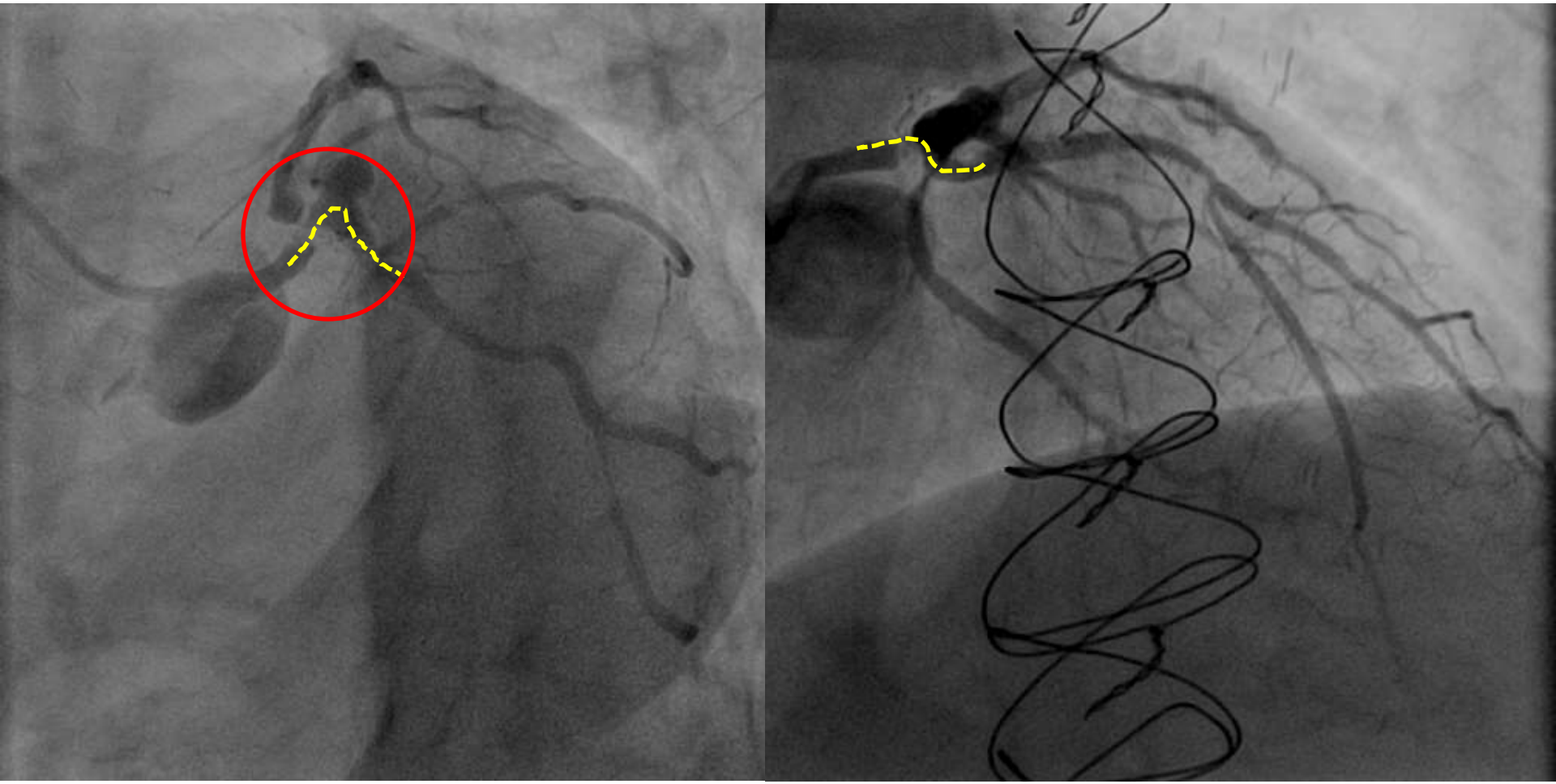
Dx CAG: RCA



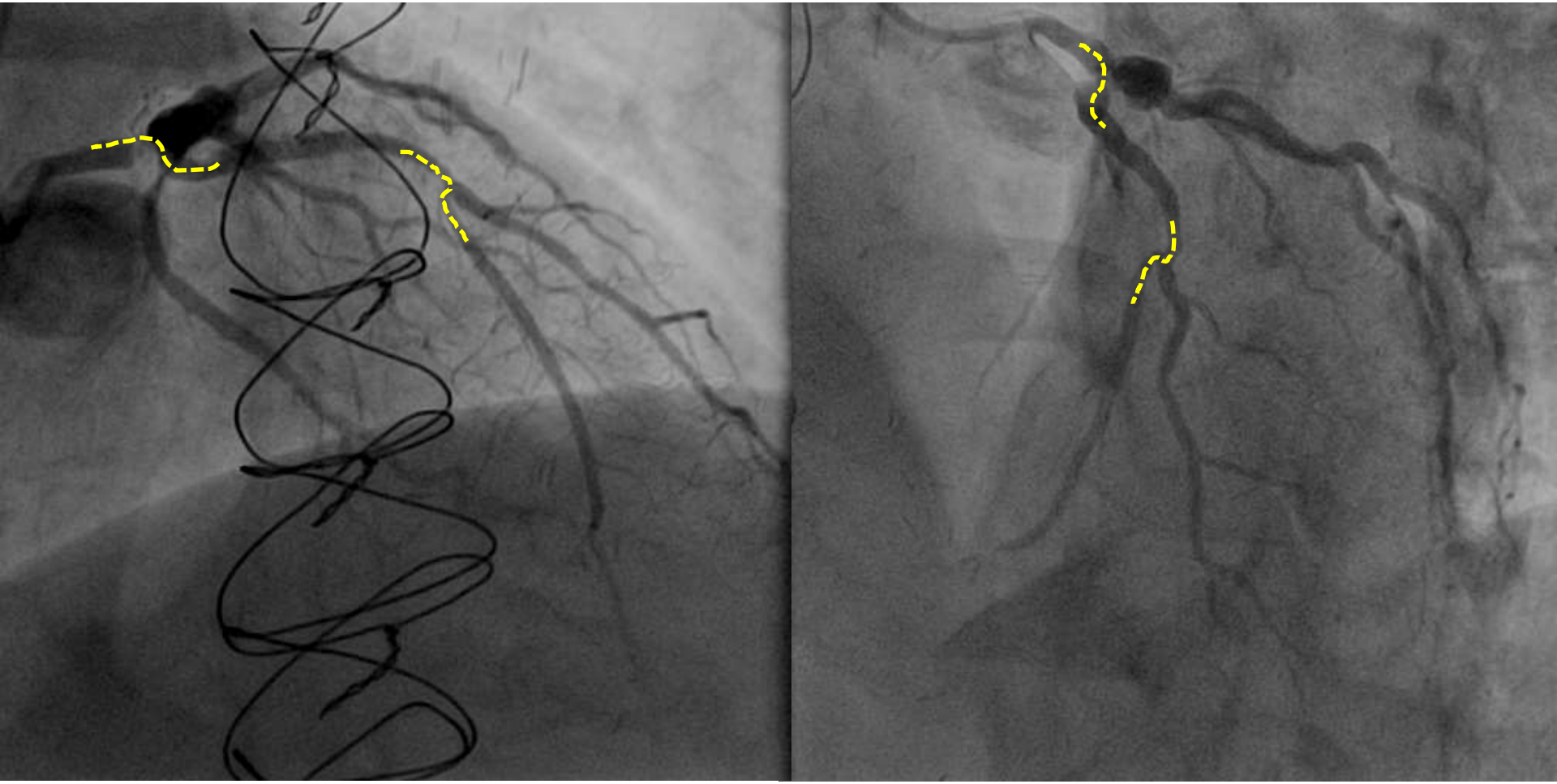
Graft dysfunction 2 yrs after CABG

- Redo CABG ✗
- PCI ○

True LM bifurcation with critical stenosis involving d-LM, os-LAD and os-LCX with highly angulated take-off of both branches



Stenosis at m-LAD with acute angulation

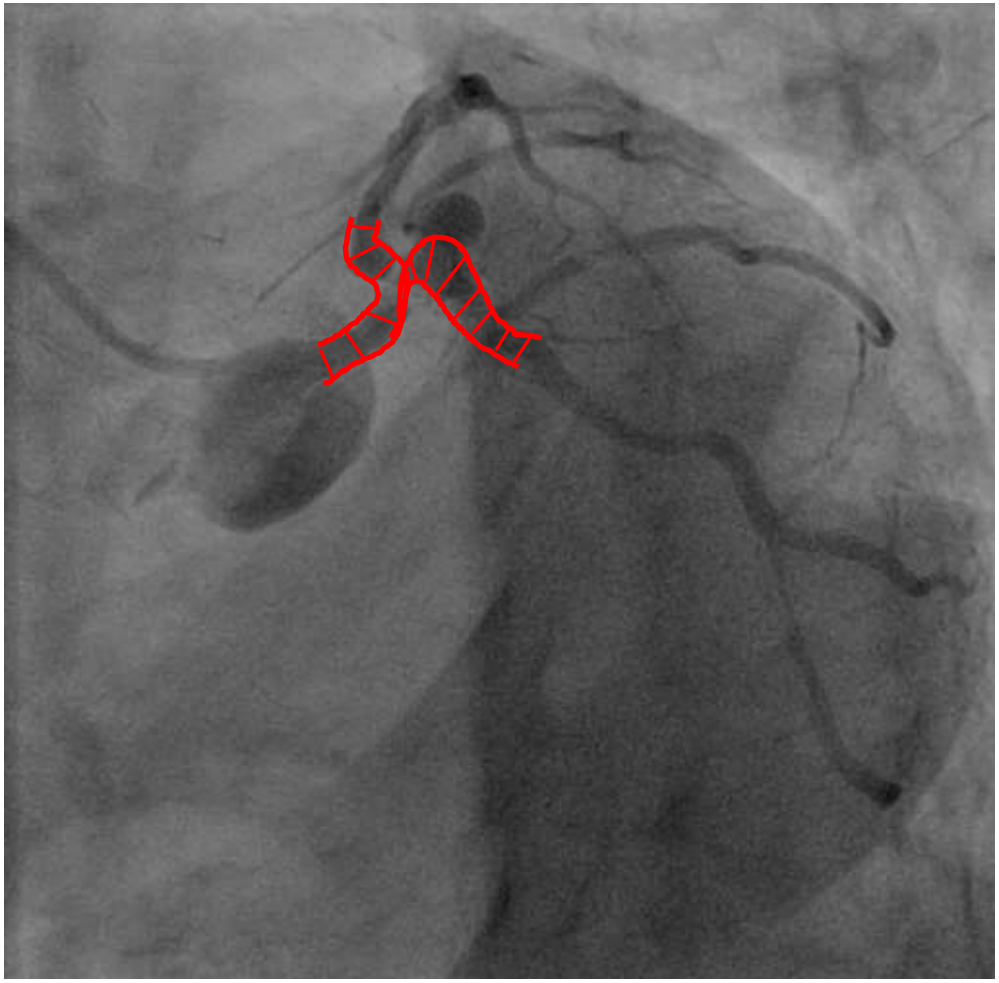


2 stent technique with the branches secured when stenting for the other one

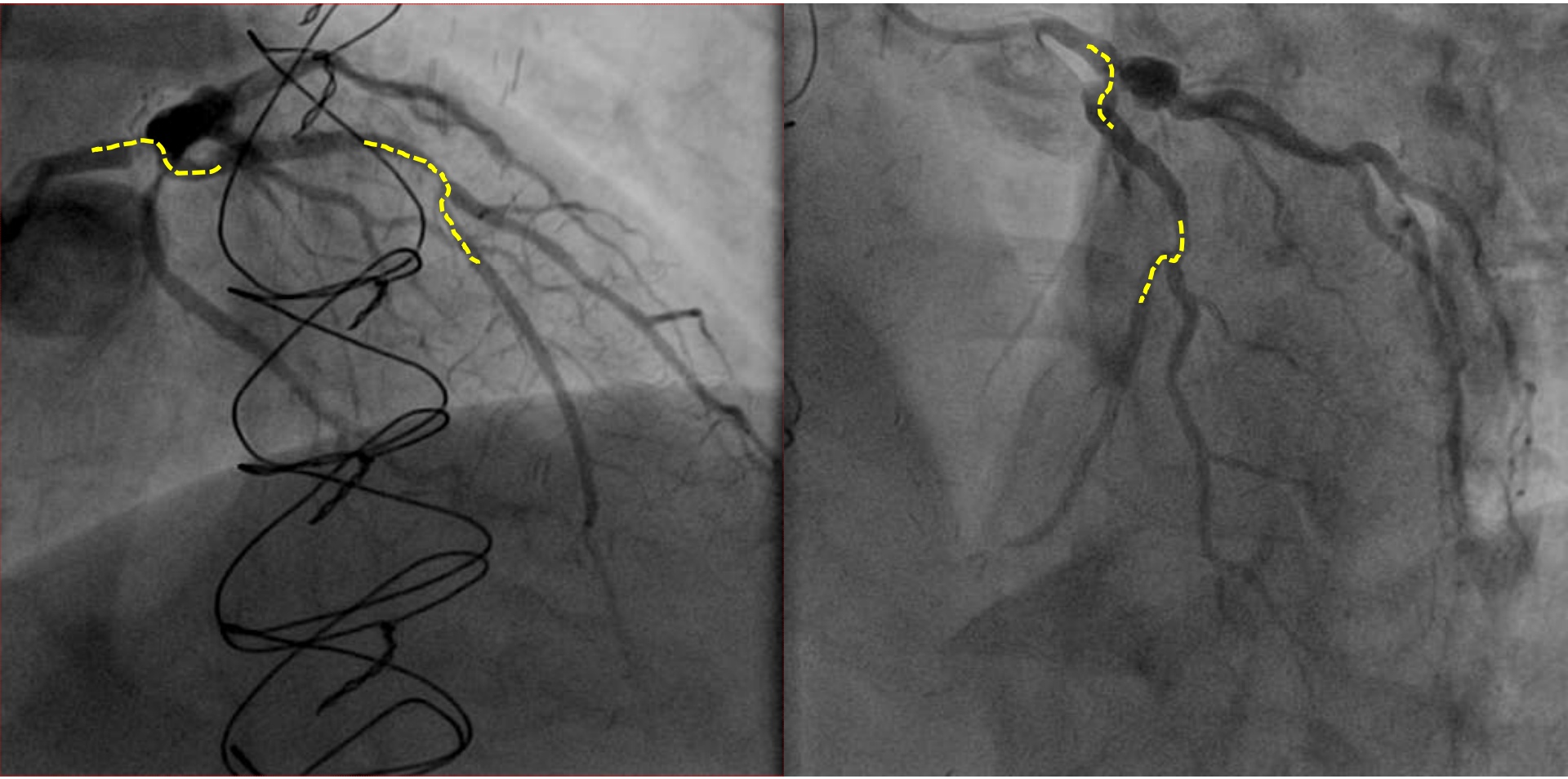
- Crush technique ◯
- TAP technique ✕
- Culotte technique ✕

Crush technique:

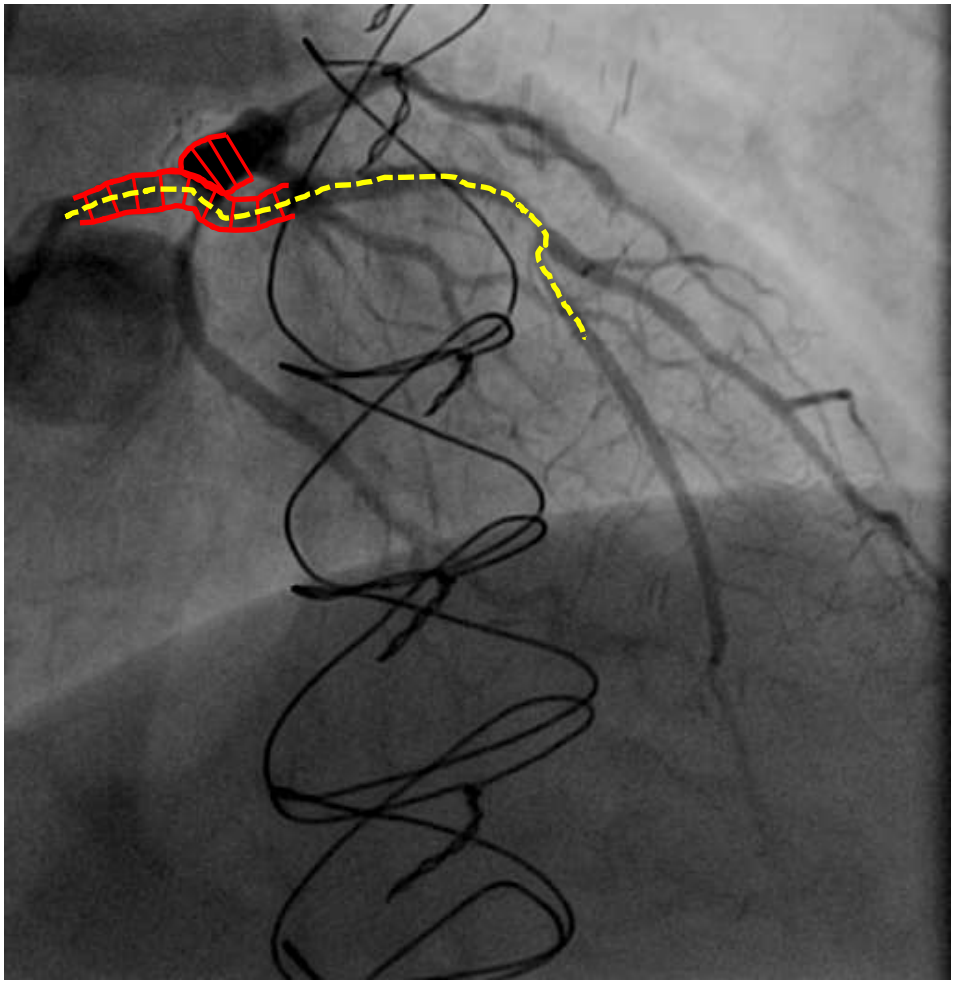
stenting and crushing LCX/LM first and then stenting LAD/LM to secure LM first



Stenosis at m-LAD with acute angulation



Stenting LAD/LM lesion first



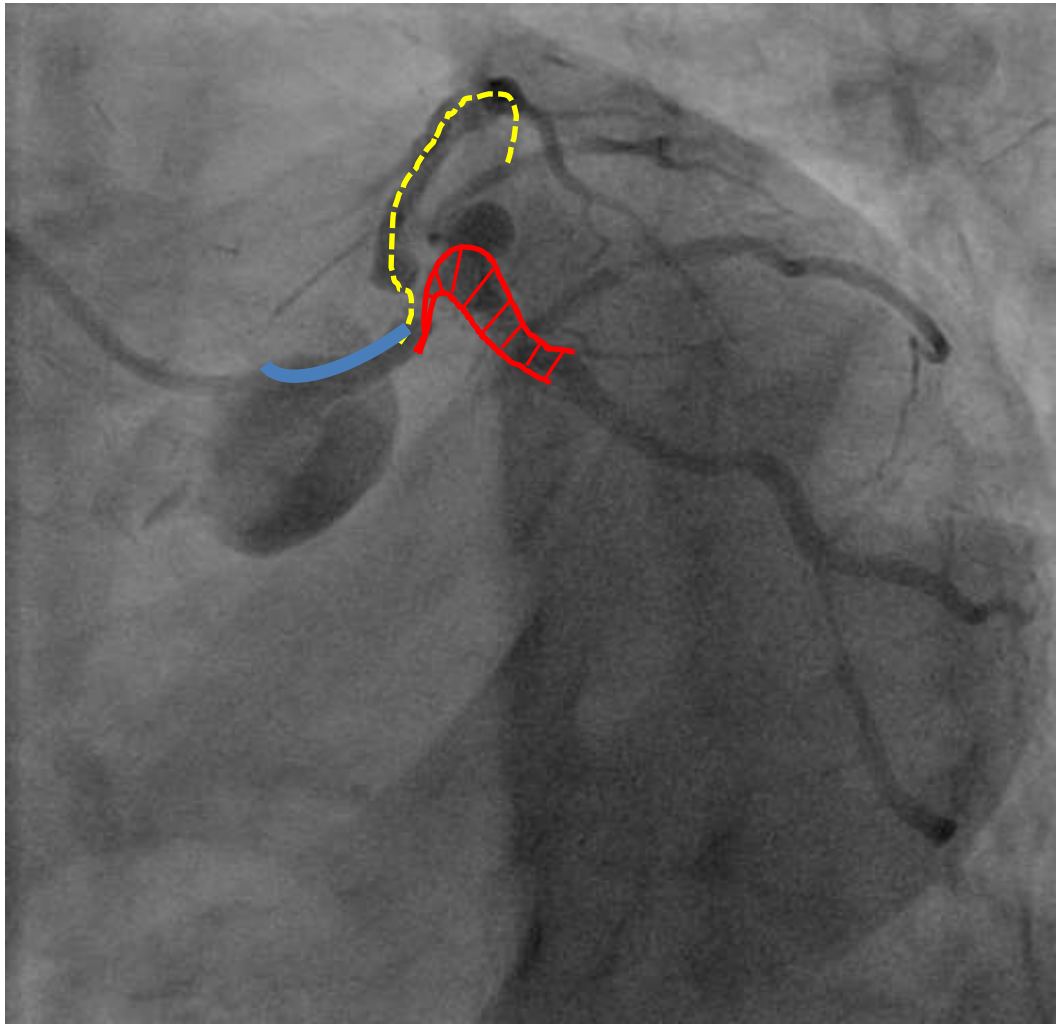
Advantages:

- LM is secured, which allows deep engagement of GC to provide enough support without the concern of the LM lesion.

Disadvantage

- Strong resistance may be encountered at p-LAD, which is tortuous and has been covered by stent struts.

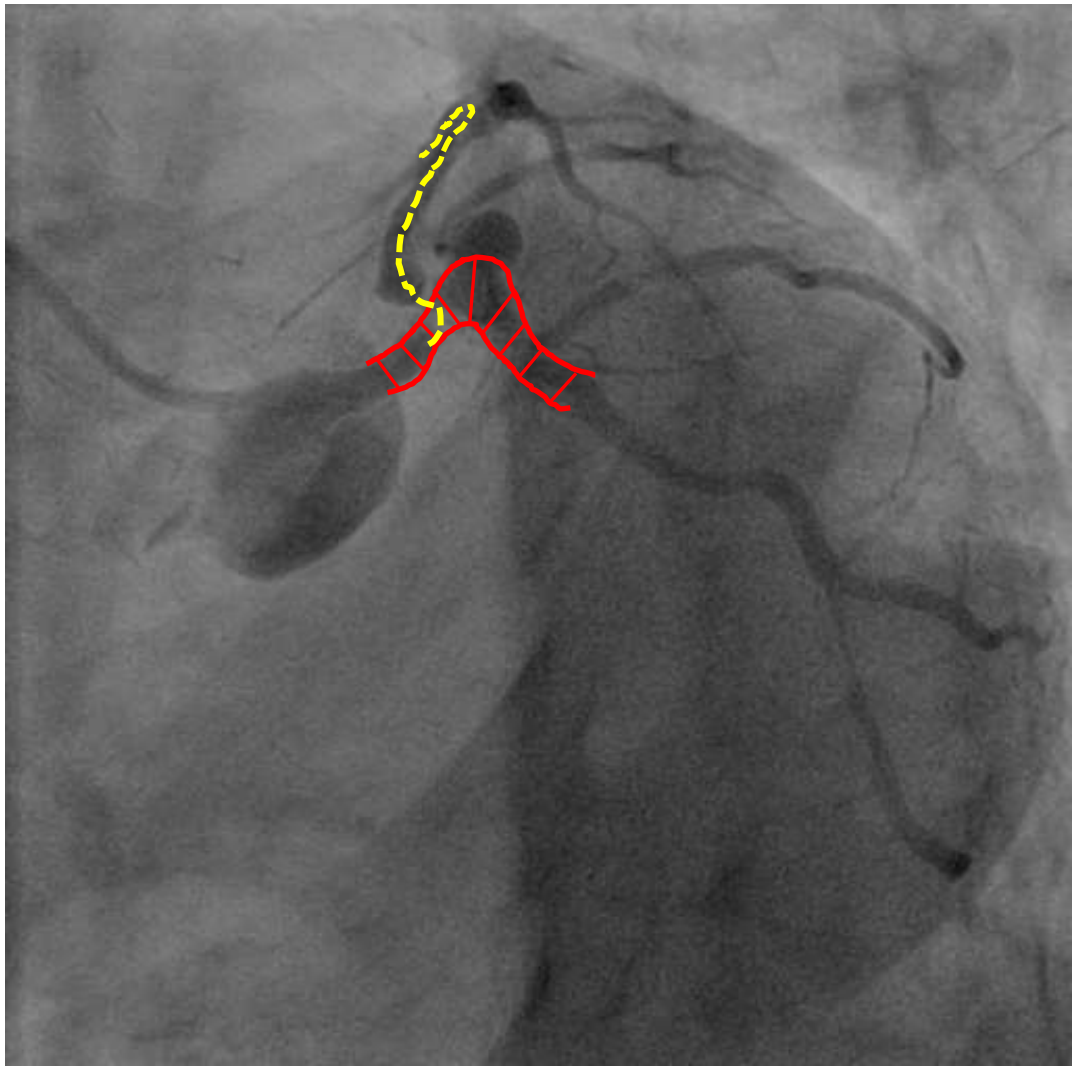
Tx the m-LAD lesion first



Disadvantages:

- With the d-LM lesion left untreated, it could be risky when GC is deeply engaged to have a strong support.

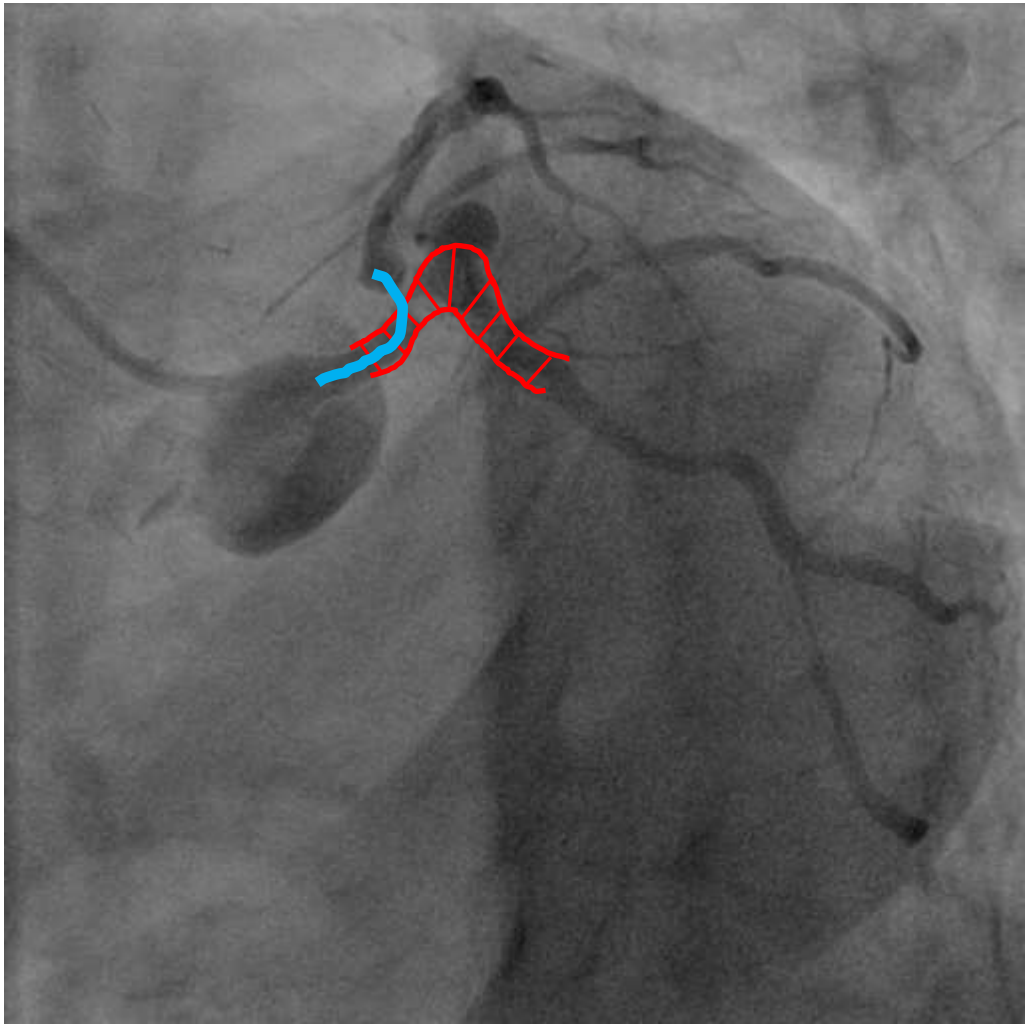
I changed my mind



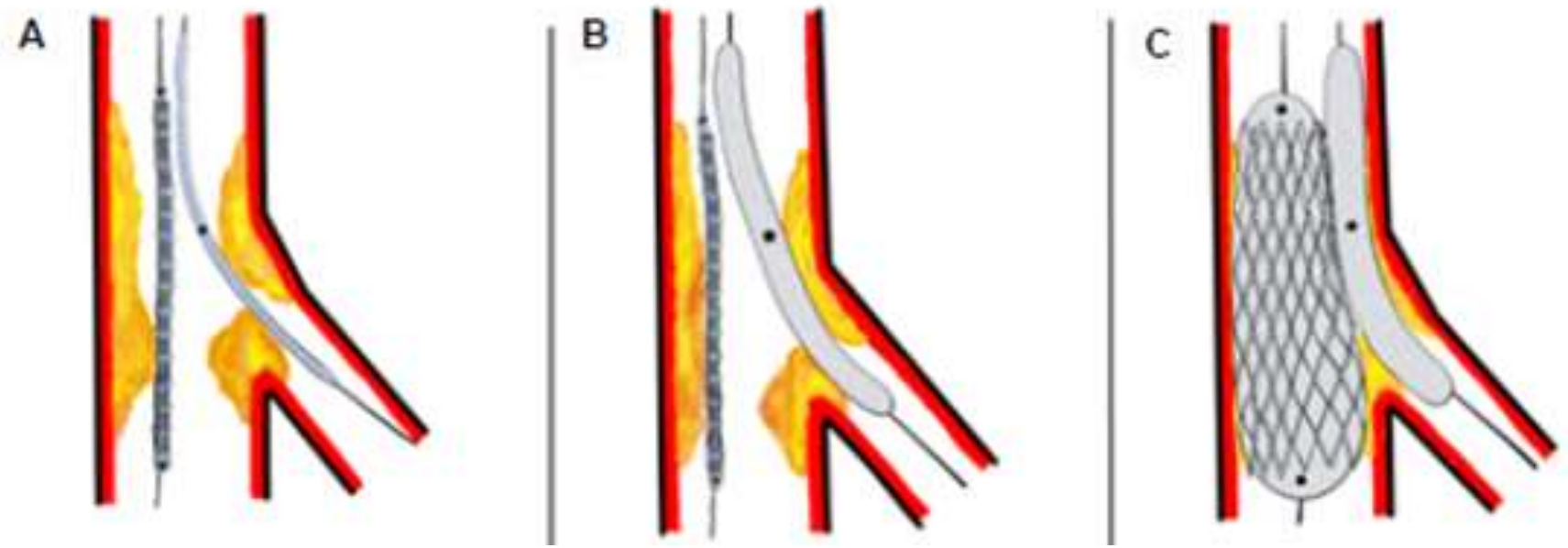
- Do culotte technique and stent the LCX/LM first, then mid-LAD and finally the LAD/LM.

- **However, I may take the risk to loose LAD when stenting for the LCX/LM.**

Jailed balloon technique to secure the access to LAD when stenting for LCX

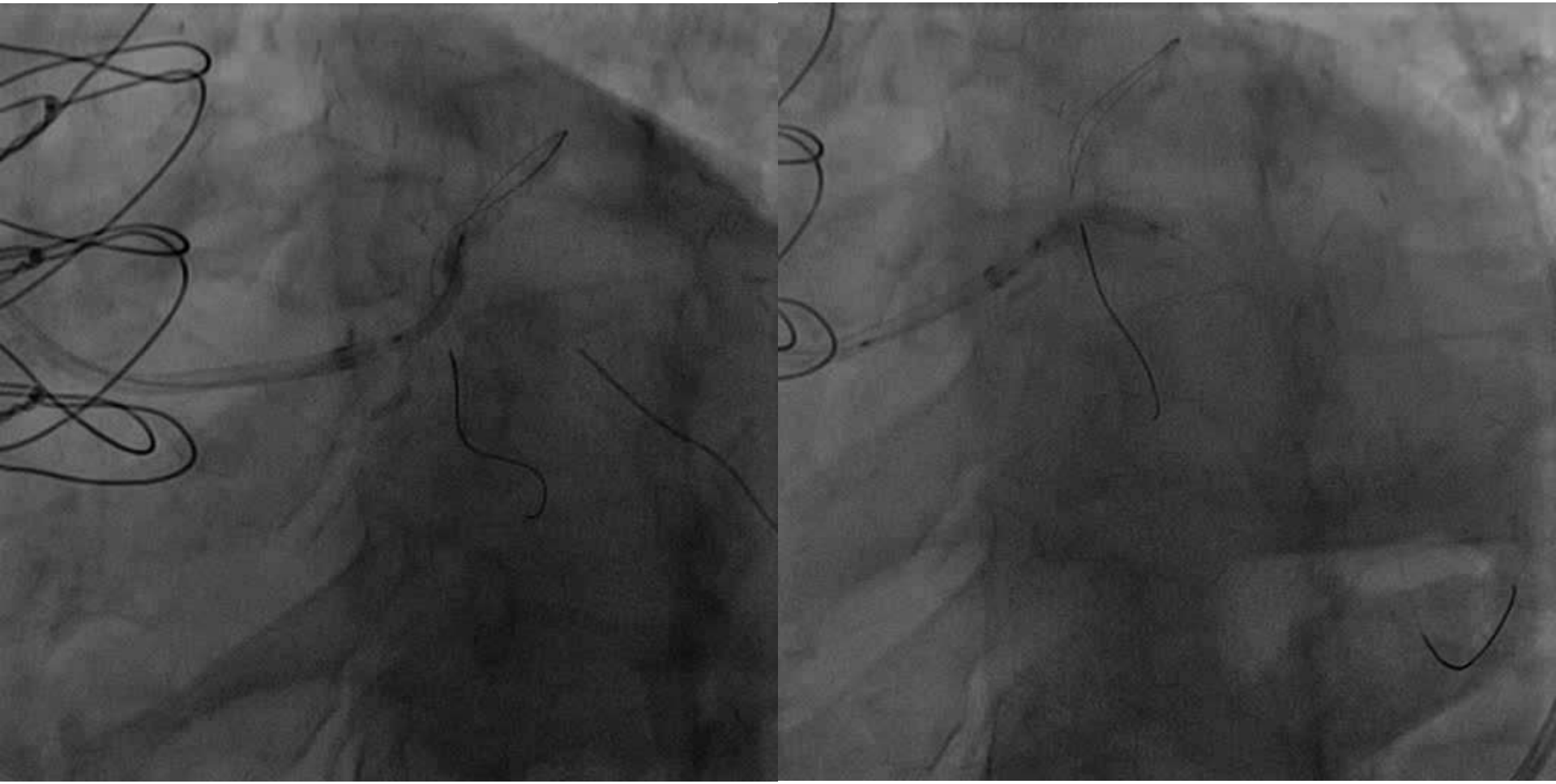


Jailed balloon technique



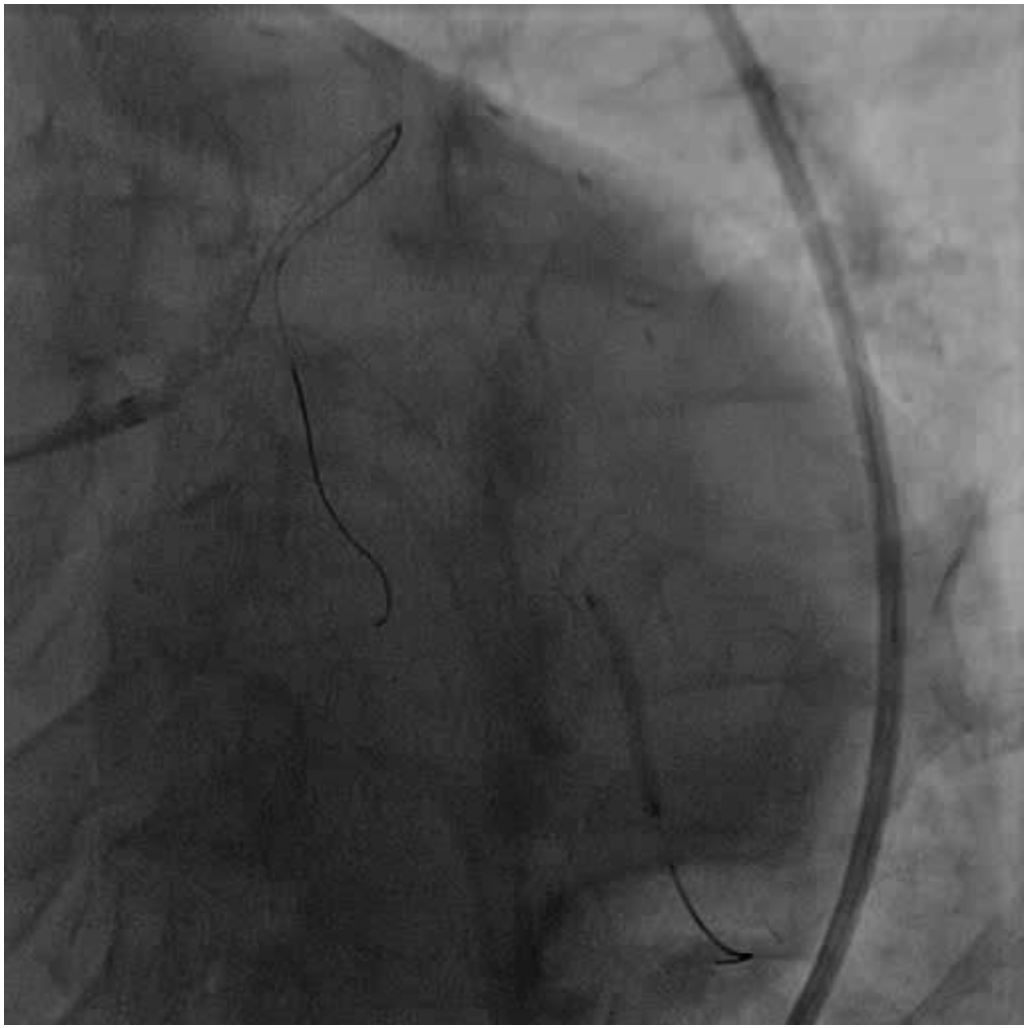
Leave a balloon catheter jailed at the disease side branch when stent is deployed at main branch.

Predilation

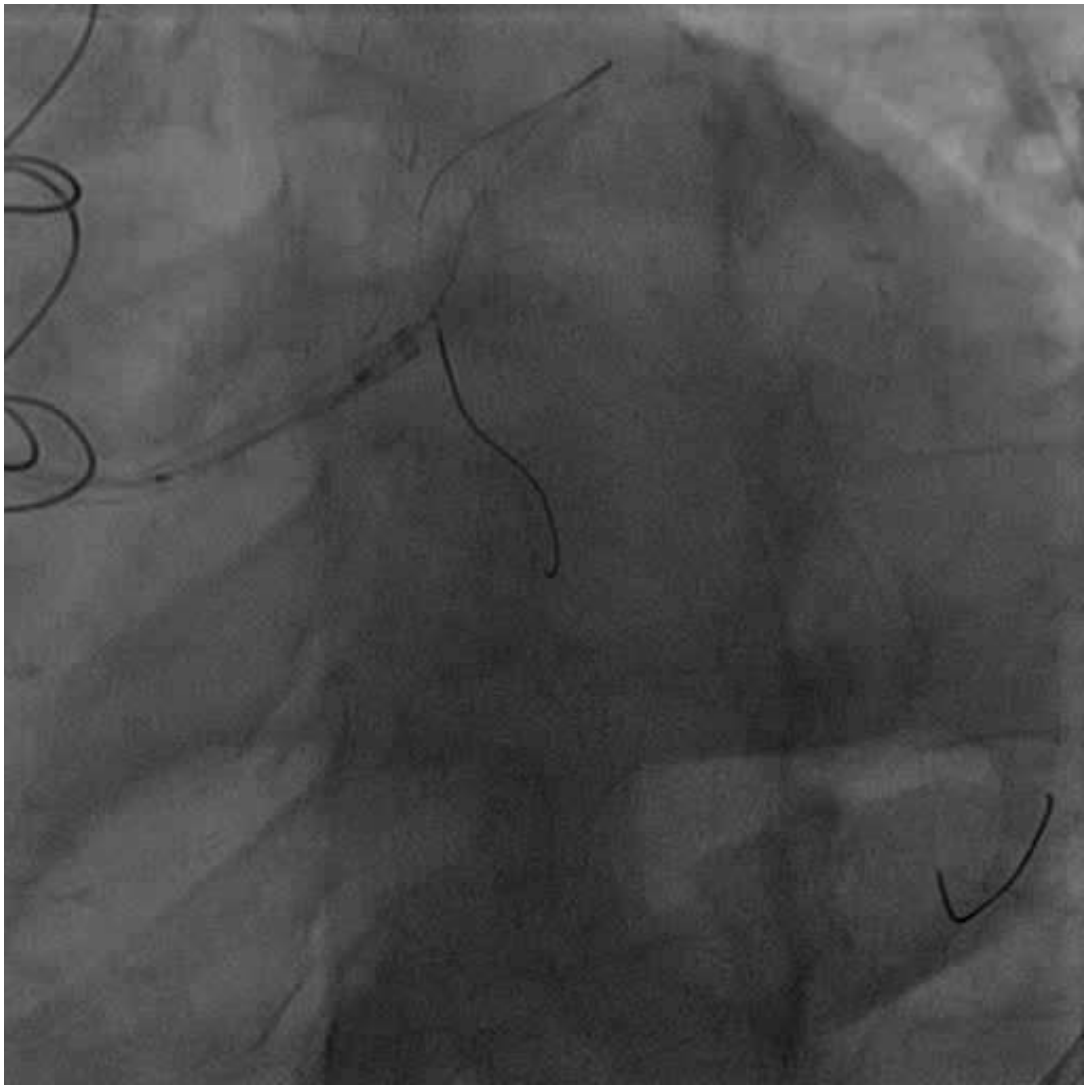


2.0 mm and 2.5 mm balloon for LAD and LCX respectively.
GC: 7 Fr EBU4

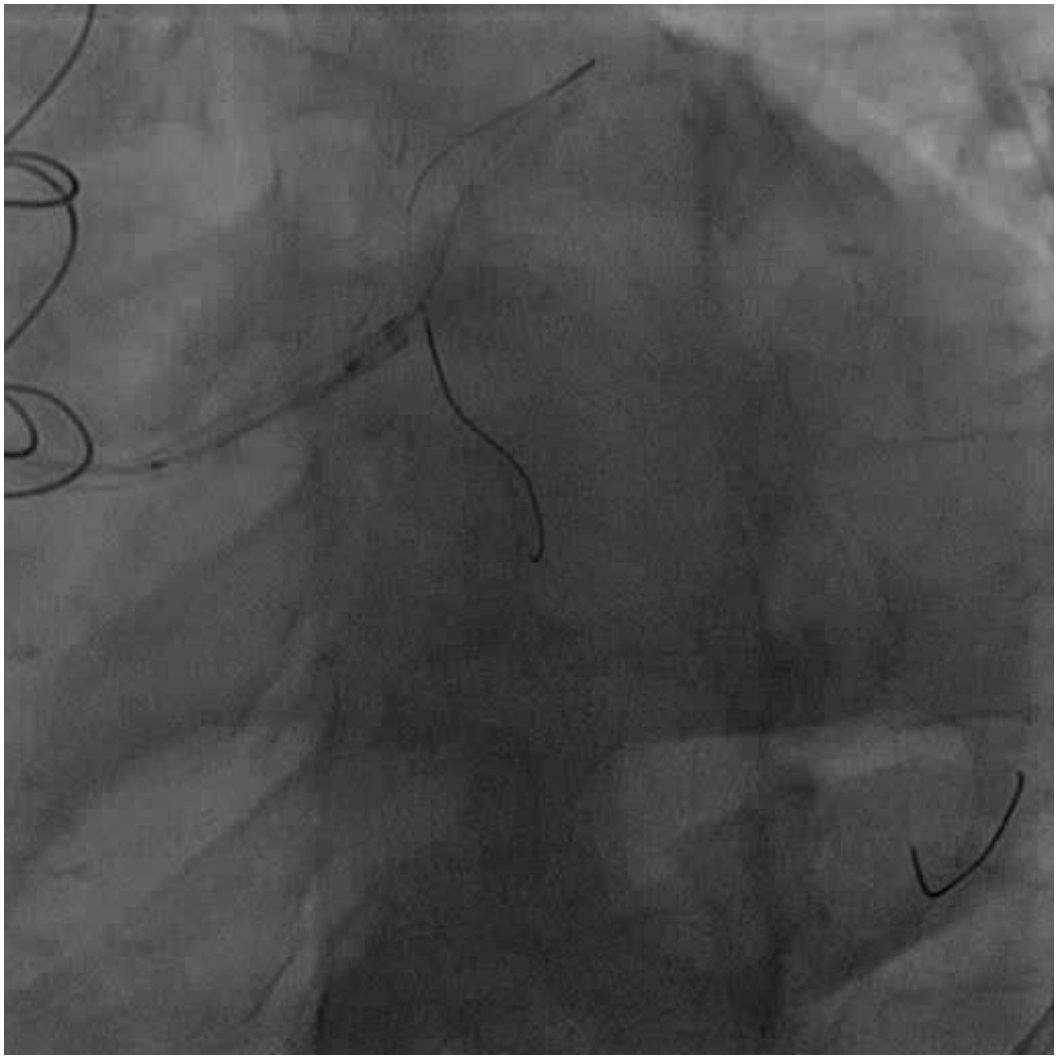
POBA for d-LCX



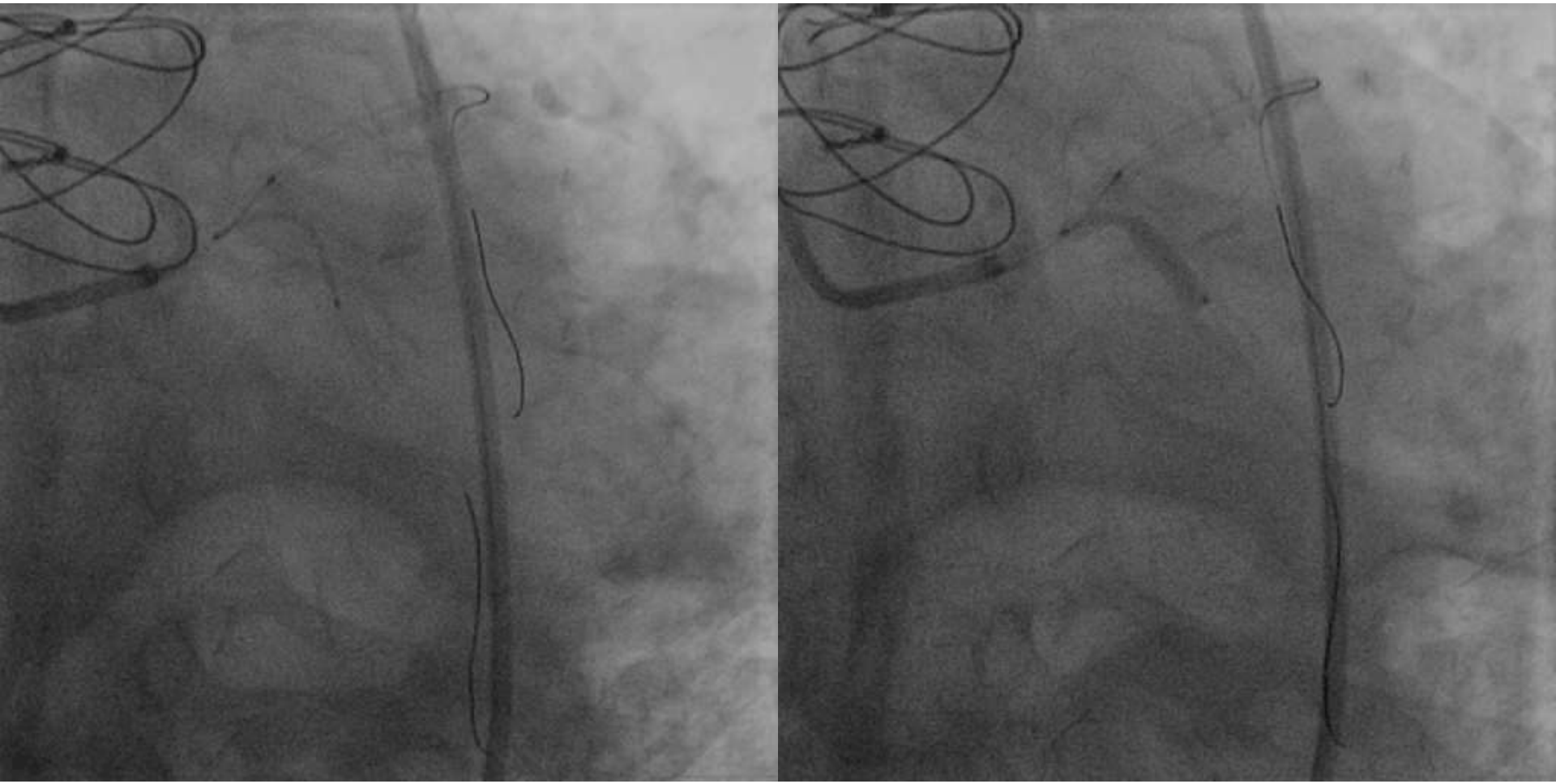
CAG: after predilation



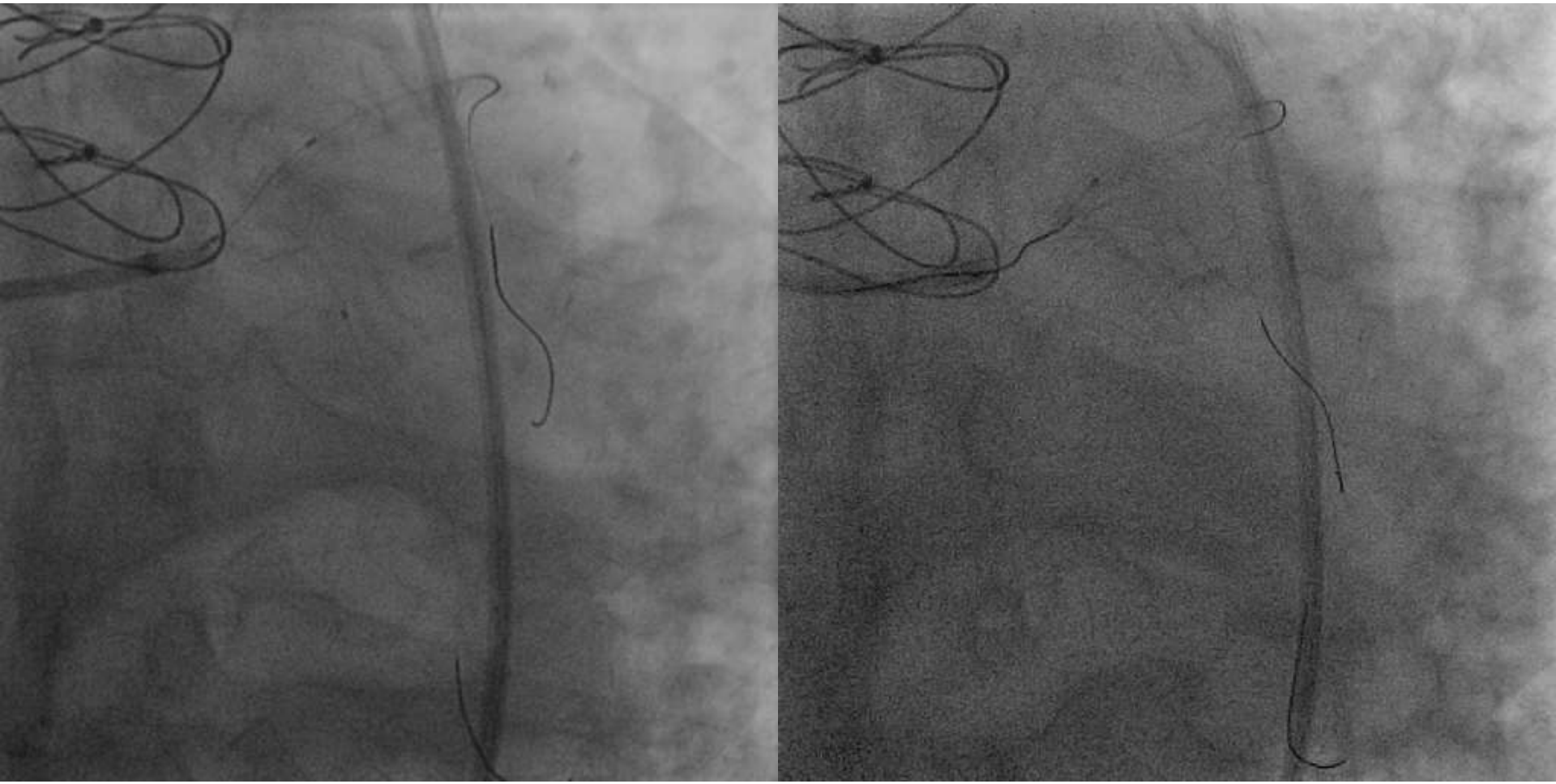
CAG after predilation



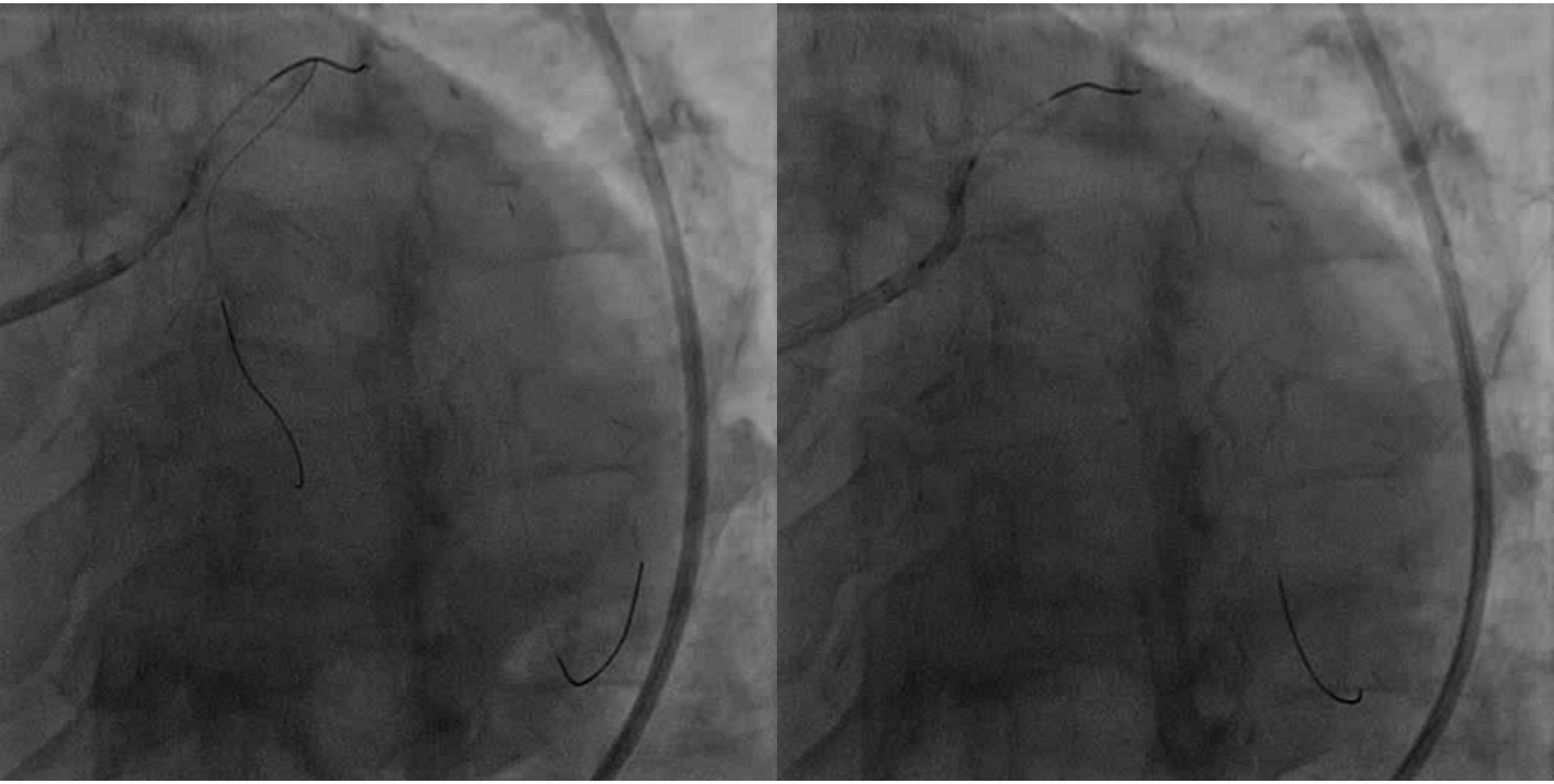
Jailed balloon technique to secure the access to LAD when stentng for LCX/LM



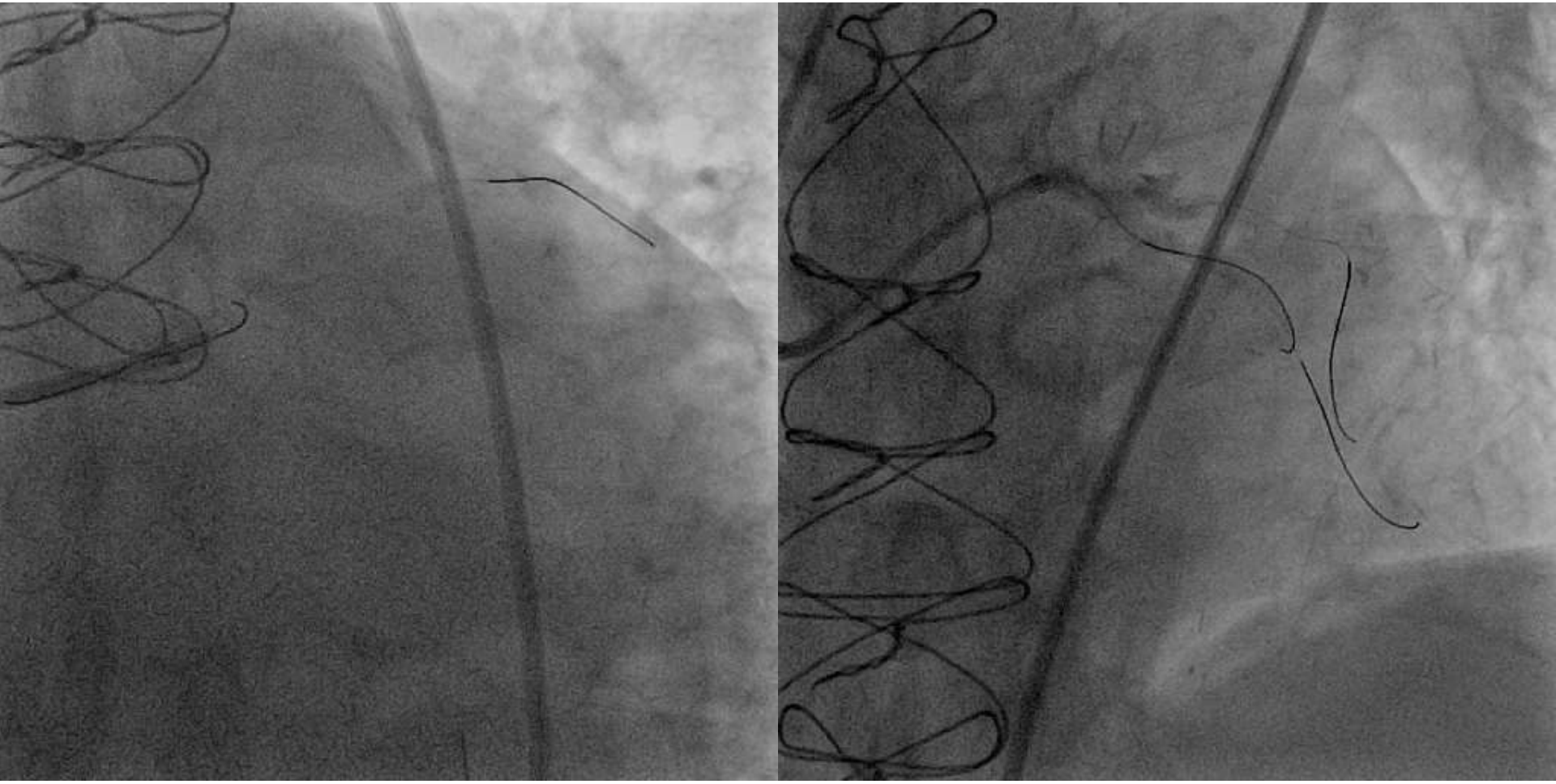
Rewiring through stent struts with the jailed balloon remained at LAD



Ballooning to open the cell of the stent

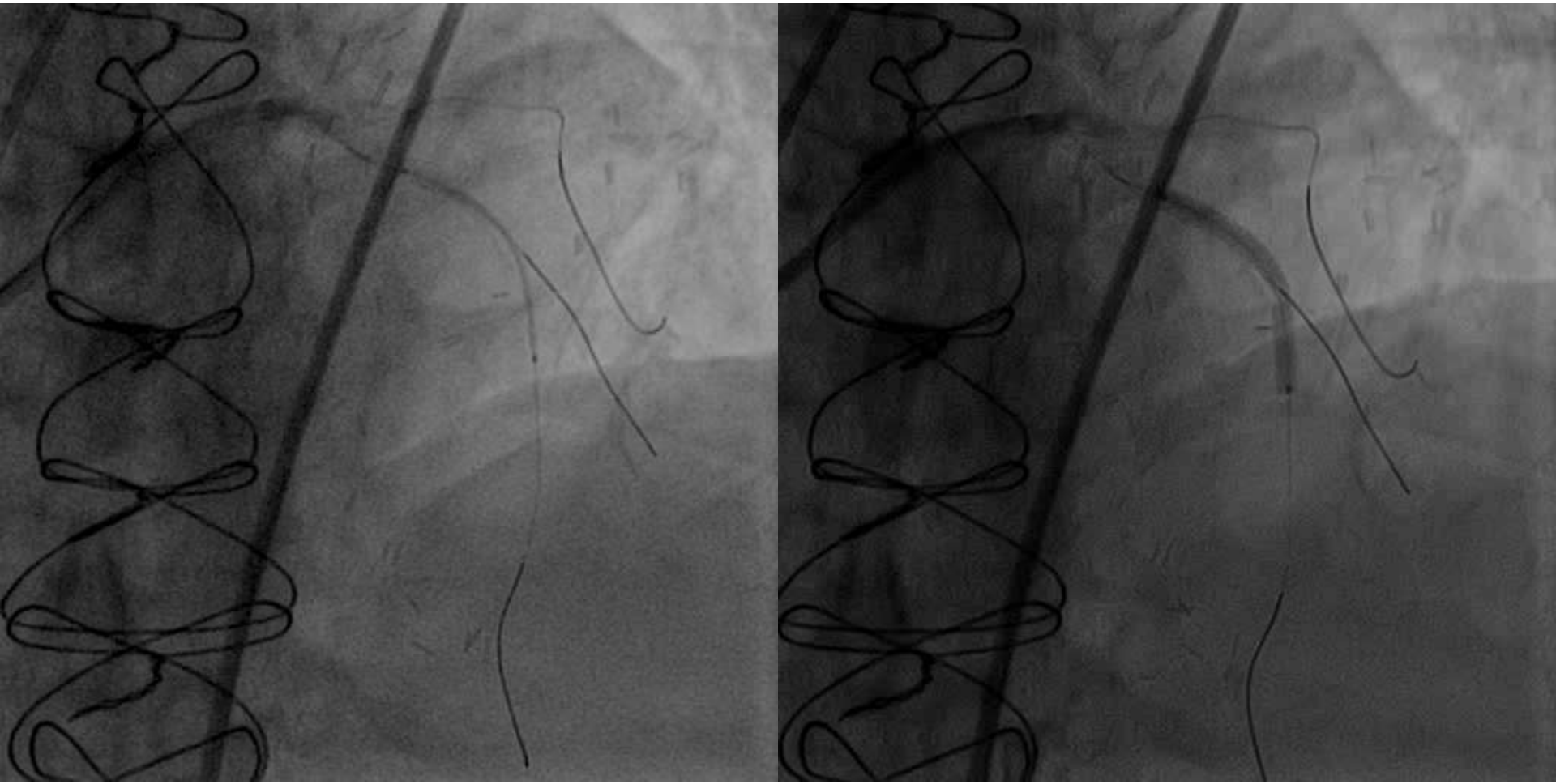


Wiring for the angulated mid-LAD



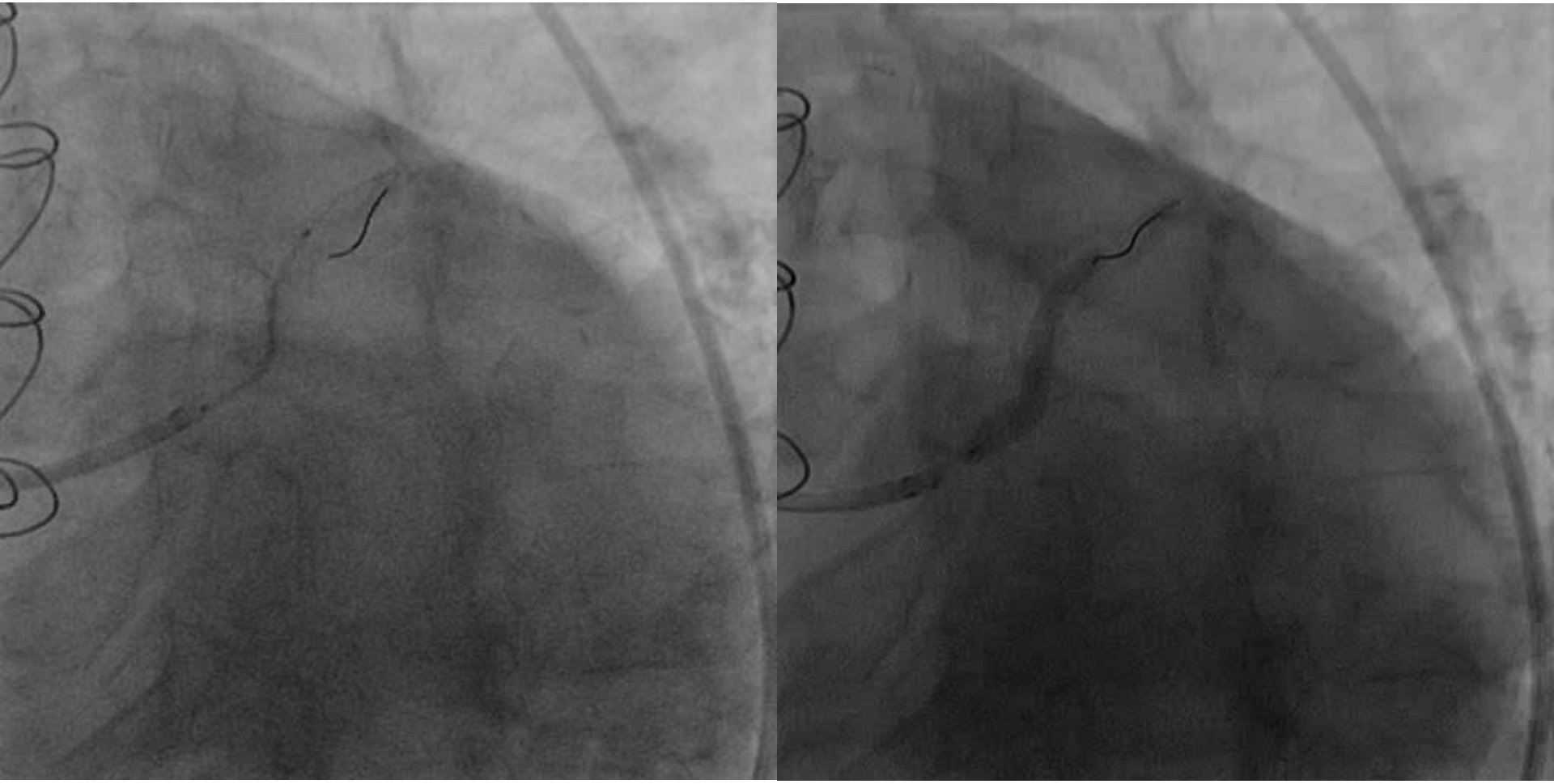
Fielder FC with very acute bent at the tip without support

Send the stent down to m-LAD with the GC deeply engaged



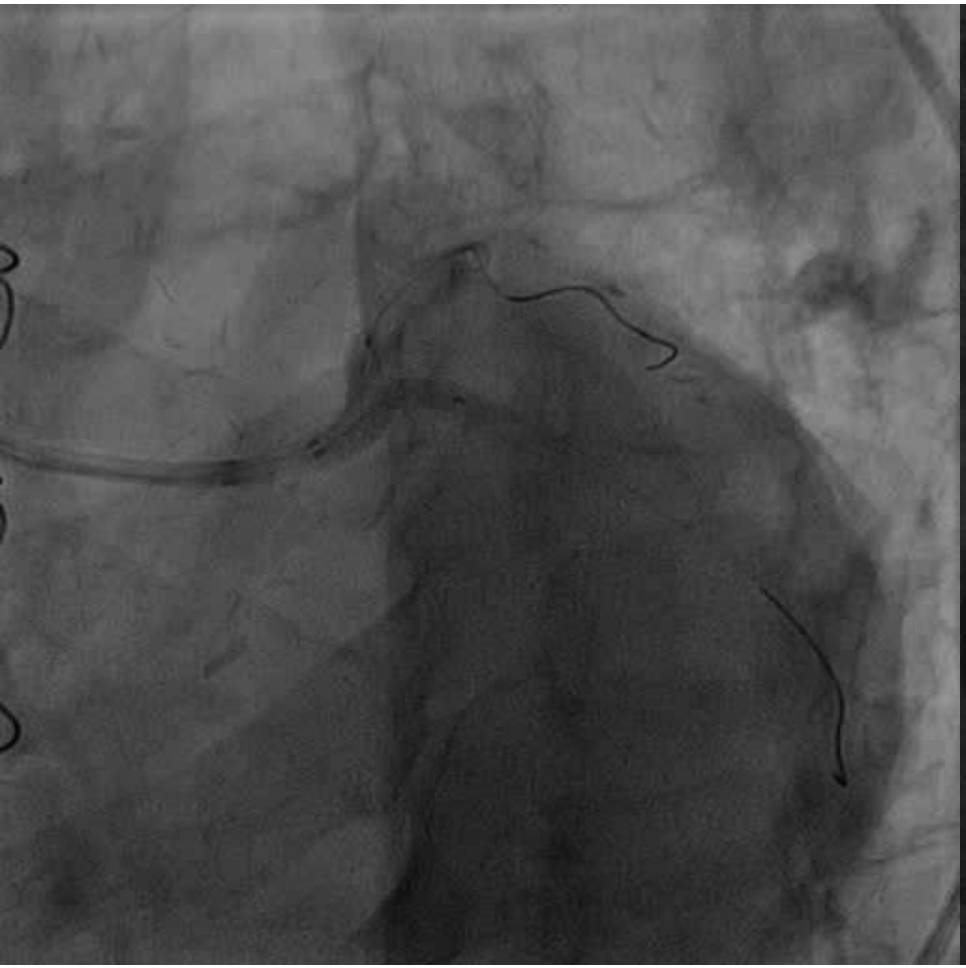
Resolute integrity 2.75x 30

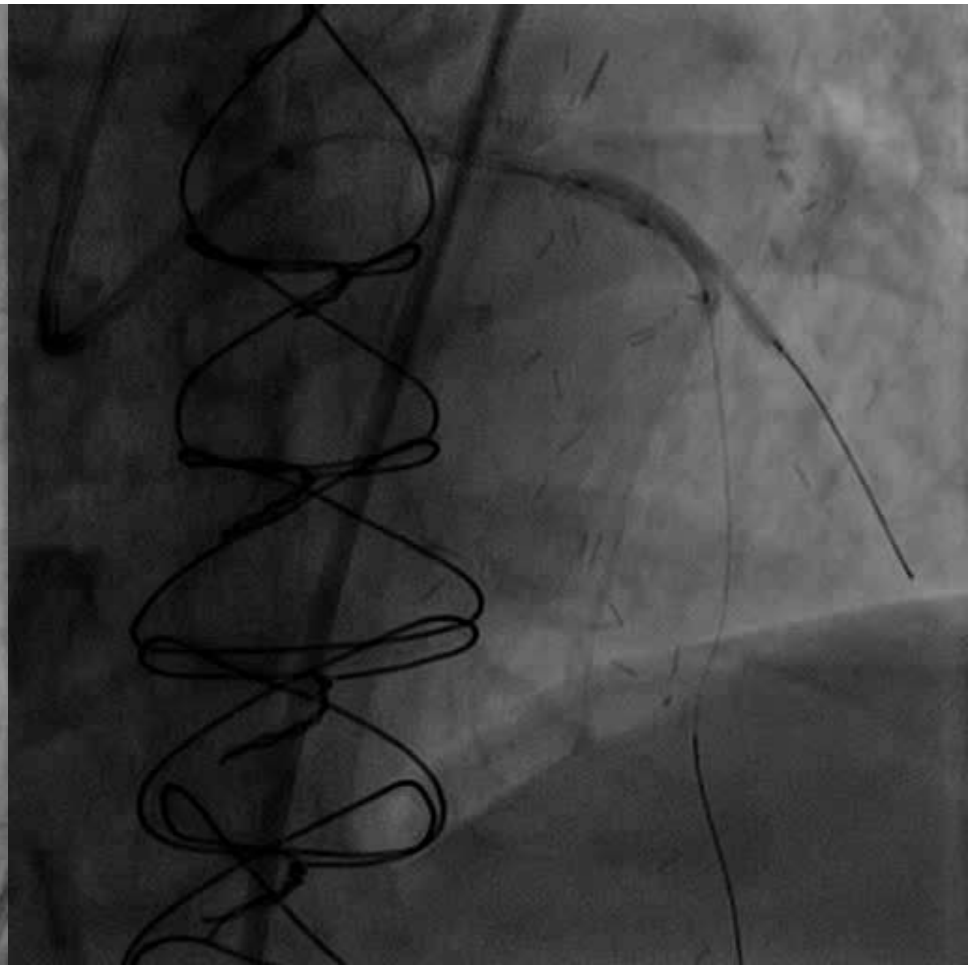
Stenting for p-LAD/LM



Resolute integrity 3.0 x 30

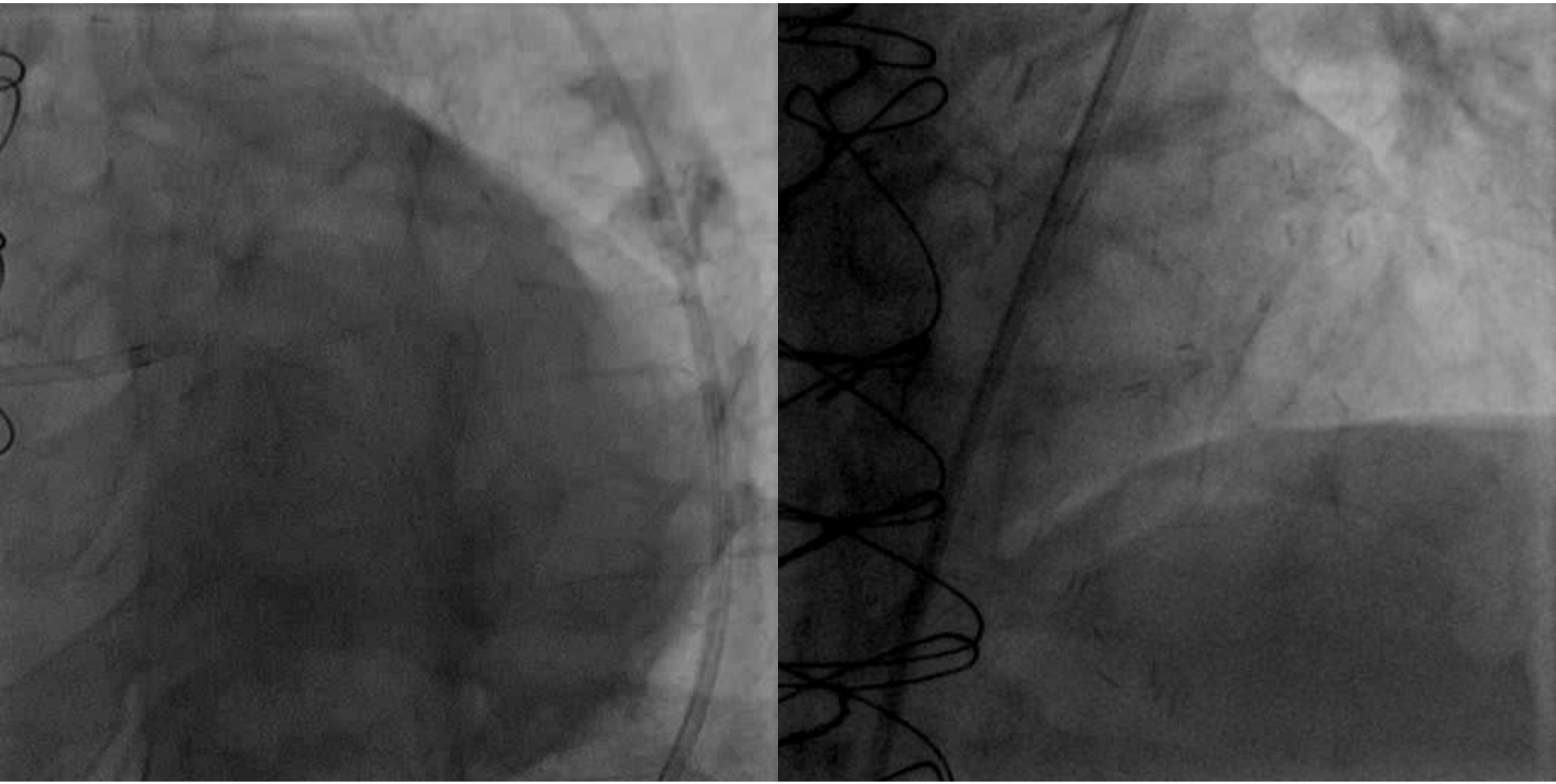
Final kissing





LAD/LCX 3.0/3.0 mm **LAD/D1 2.75/2.0mm**

Final CAG



Conclusion

- Well planning before treating critical LM lesion, with down stream disease make the procedure safer and easier.
- When dealing with LM bifurcation with critical stenosis at ostium of both LAD and LCX, crush technique is the technique of choice to secure the access of both branches. However, when culotte or TAP technique is applied of whatever reasons, jailed balloon technique could be useful to secure one branch when stenting for the other.