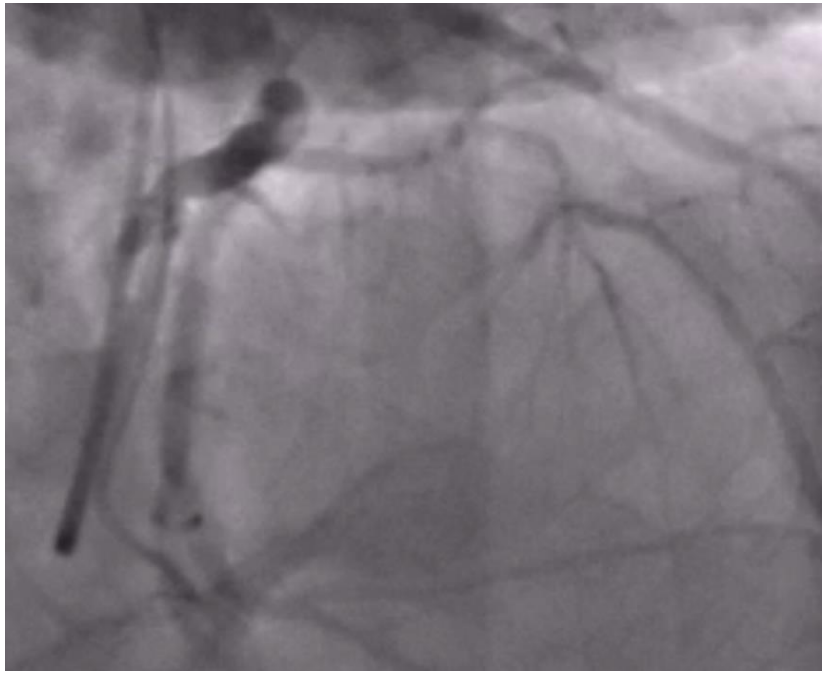
Left anterior descending CTO with ambiguous cap: how can I approach?

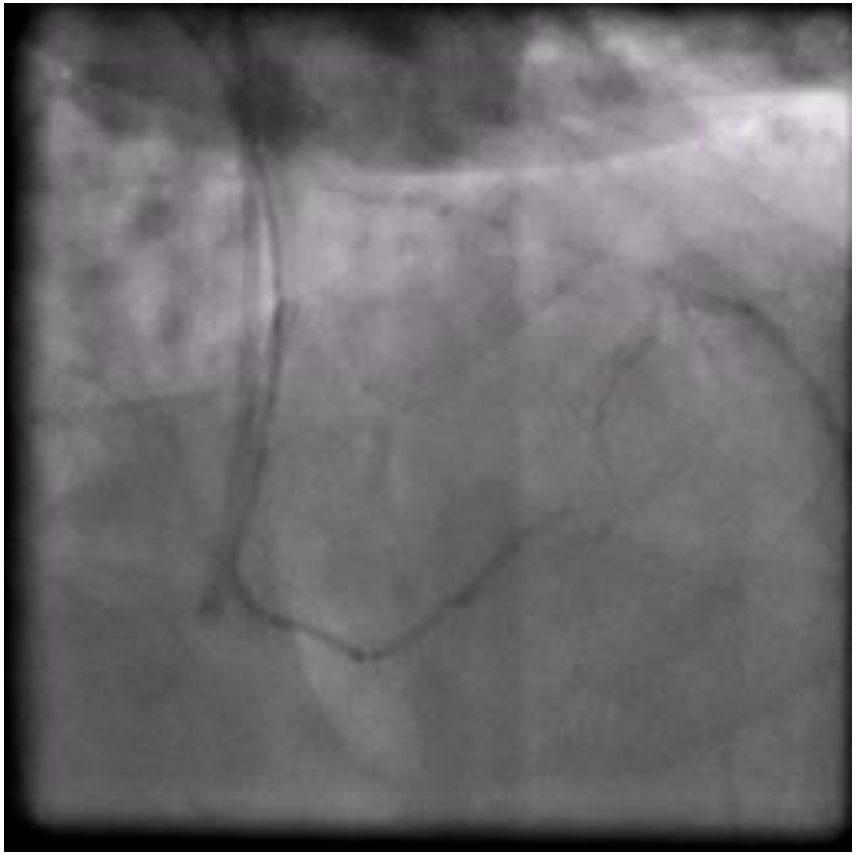
History

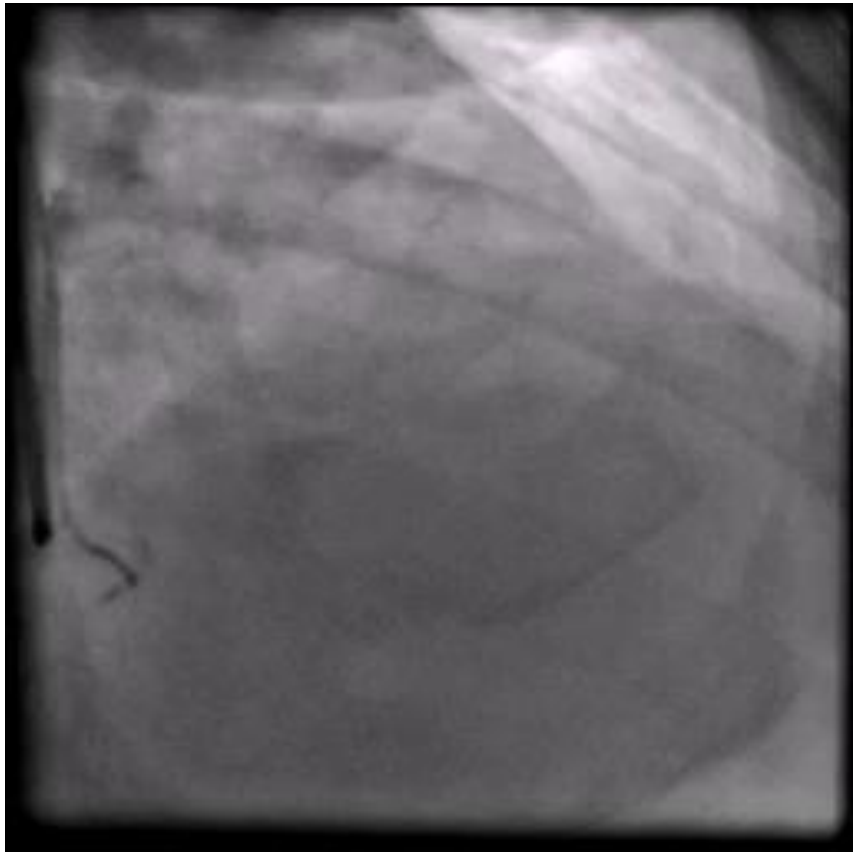
- 75 male
- Non insulin dependent diabetic
- **1994 :** anterior myocardial infarction
- Never treated invasively
- **2018:** progressively worse breathlessness
- **Echocardiogram:** good LVEF, trivial anterior hypokinesis
- **Coronary angiography**: CTO left anterior descending proximally – dominant circumflex without disease
- **Thallium scan:** extensive anterior reversible ischemia

Left anterior descending CTO at diagonal origin – ambiguous proximal cap– severe ostial diagonal disease

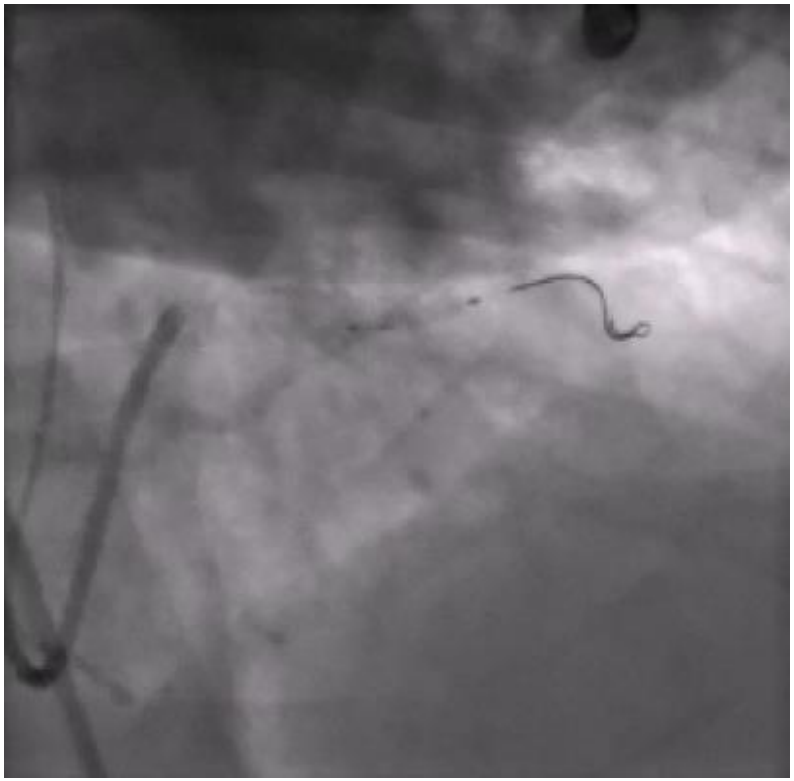


PRE ANGIO – no stamp

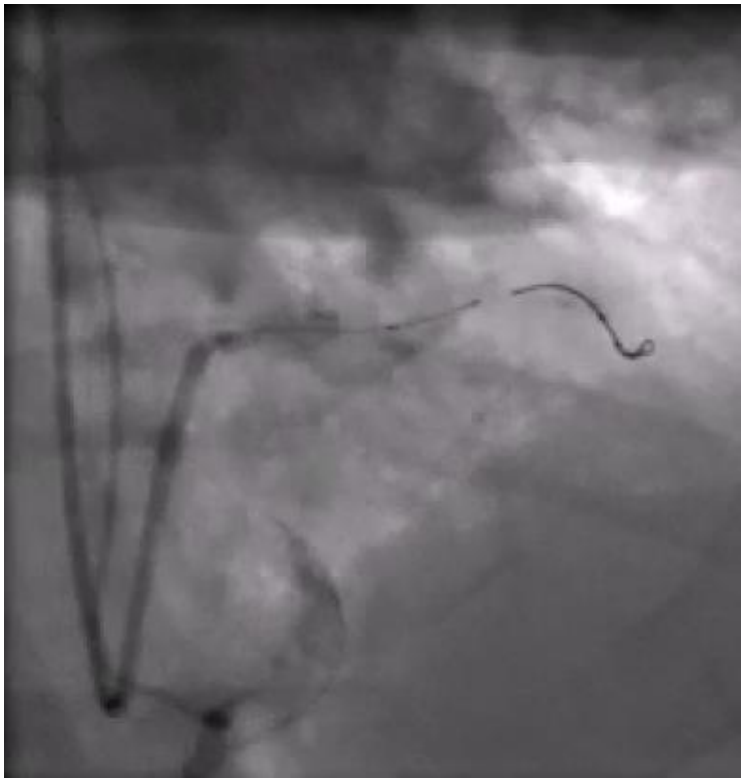




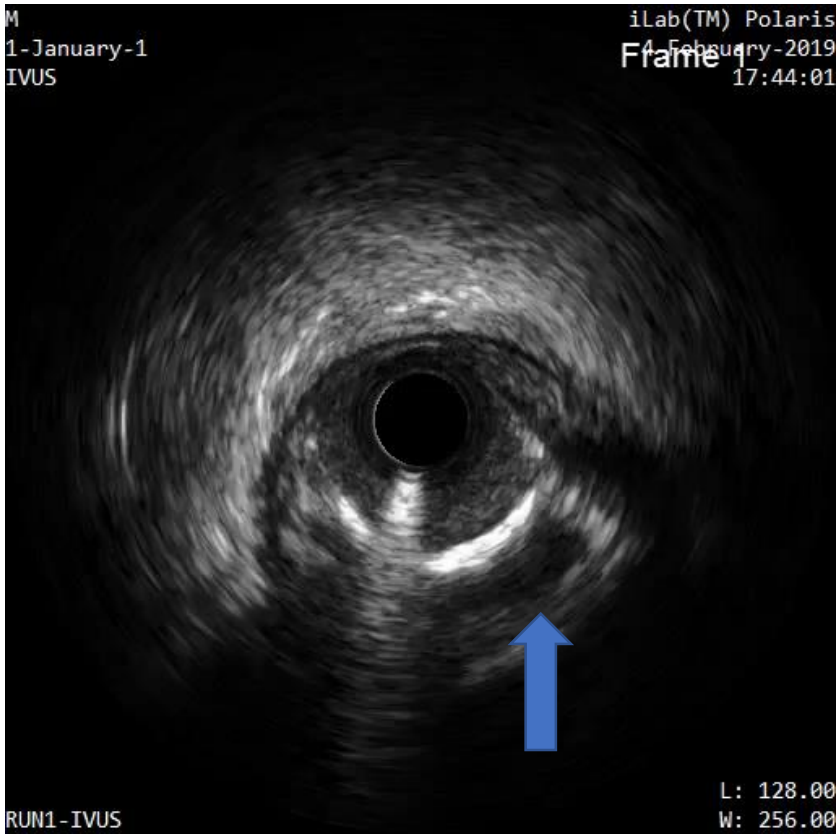
Balloon ostial diagonal



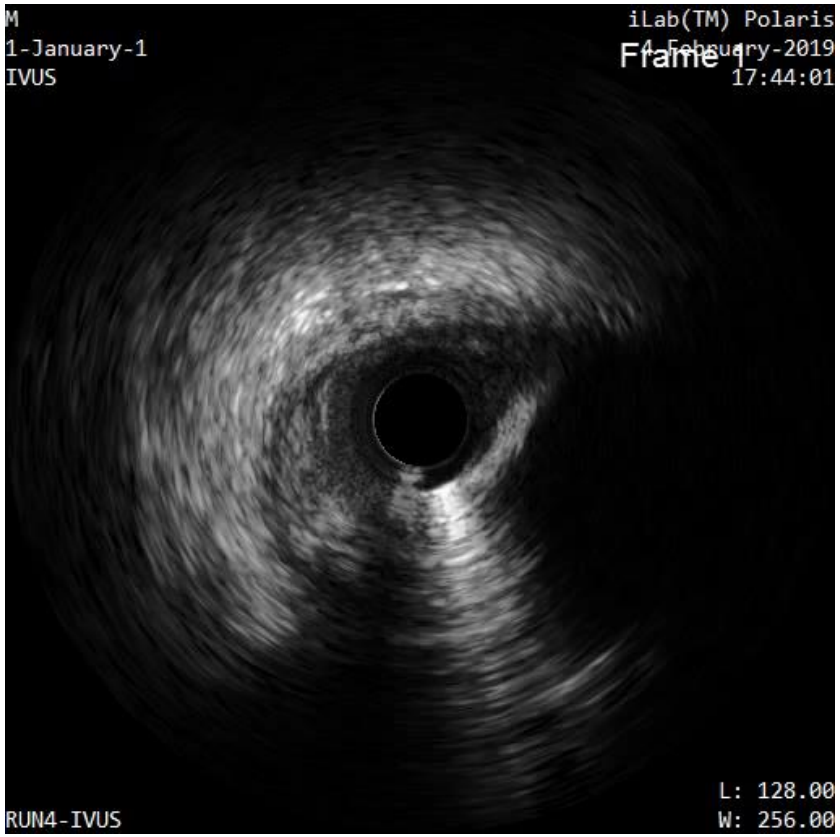
IVUS at the diagonal ostium



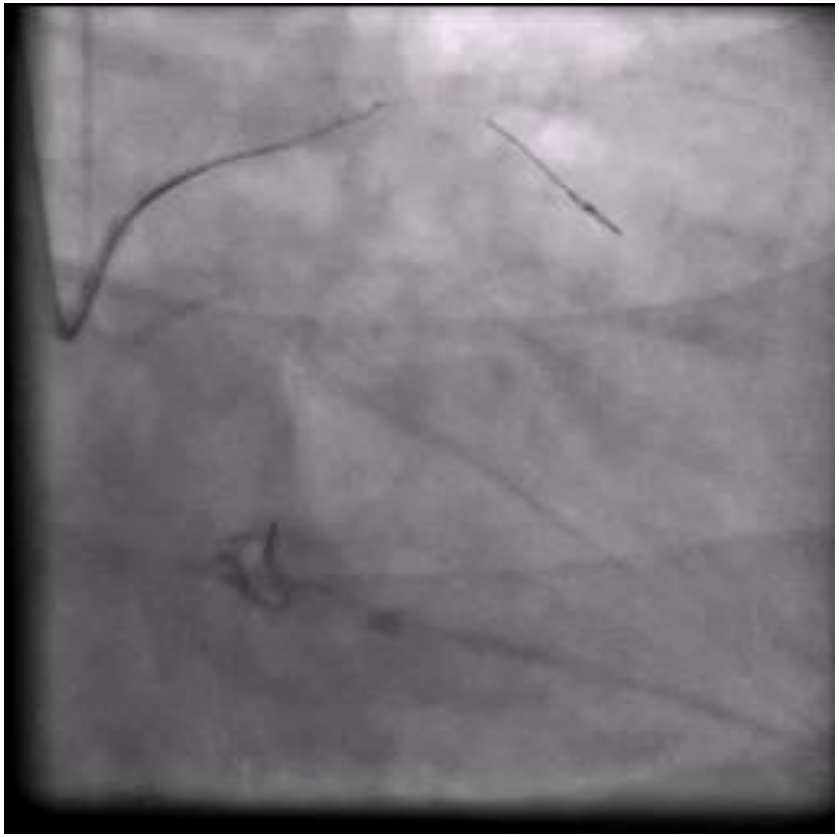
IVUS guided CTO PCI in ambiguous cap – occluded vessel appearance



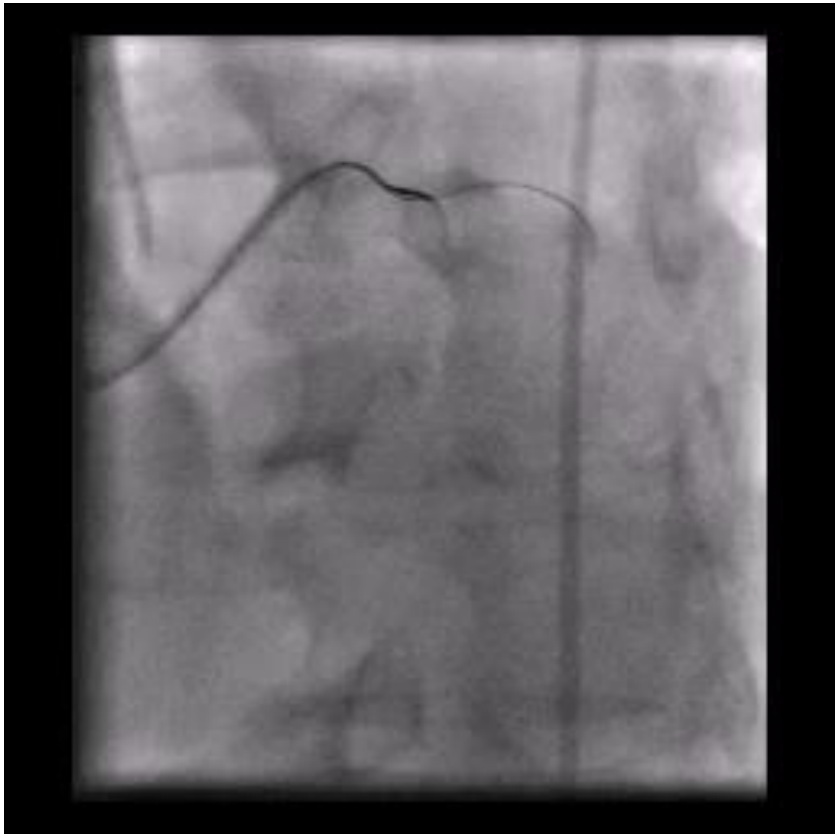
Confianza pro stiff wire to penetrate calcified proximal cap



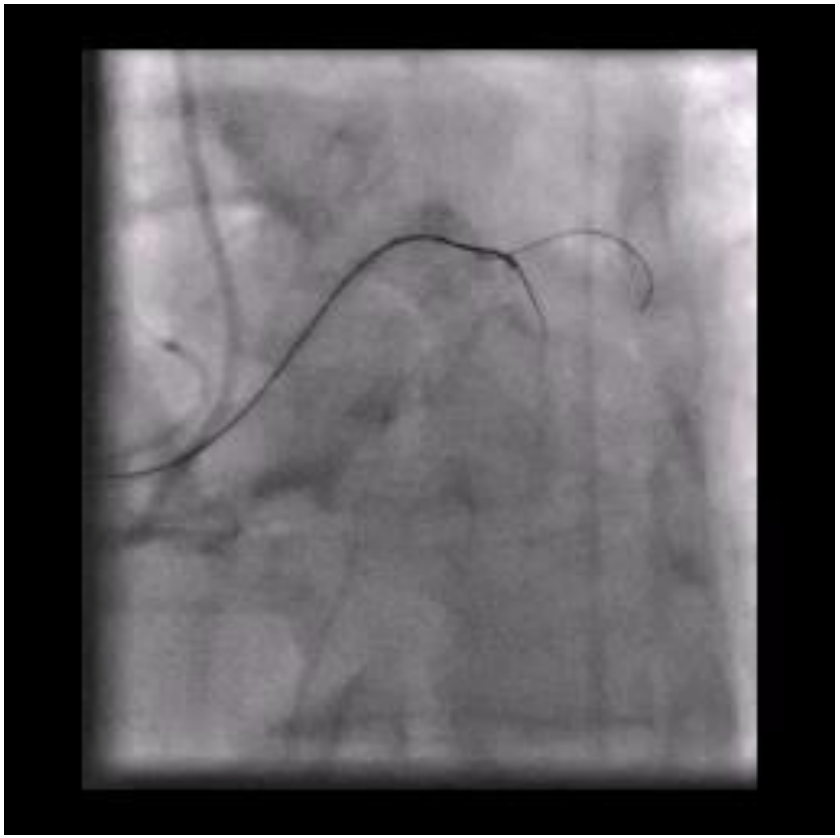
Confianza pricking proximal cap guided by IVUS



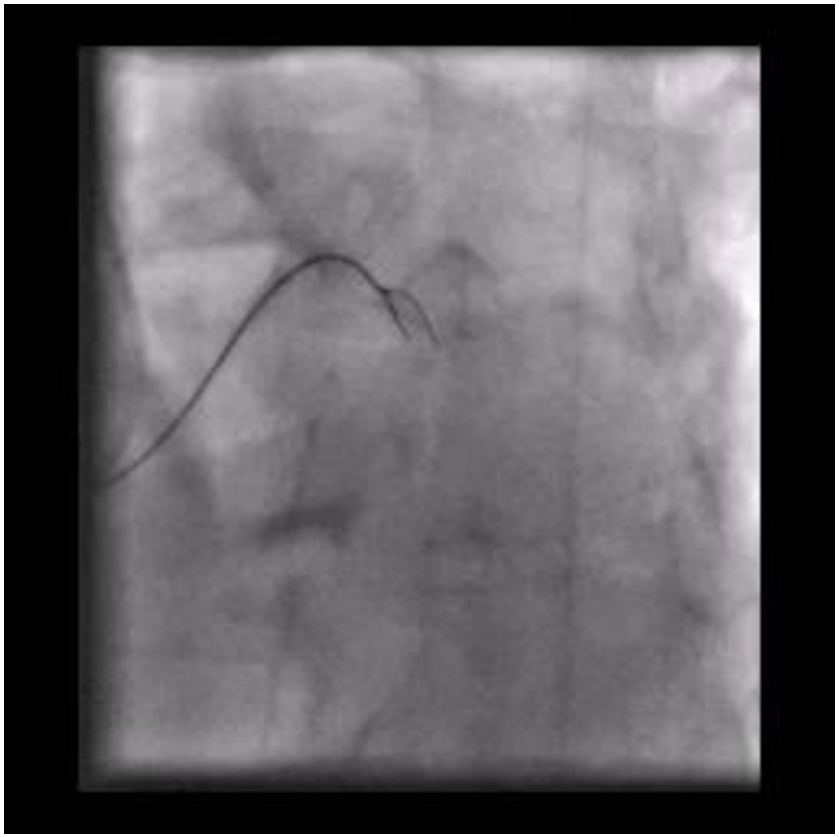
Confianza remains in vessel architecture despite being in false lumen



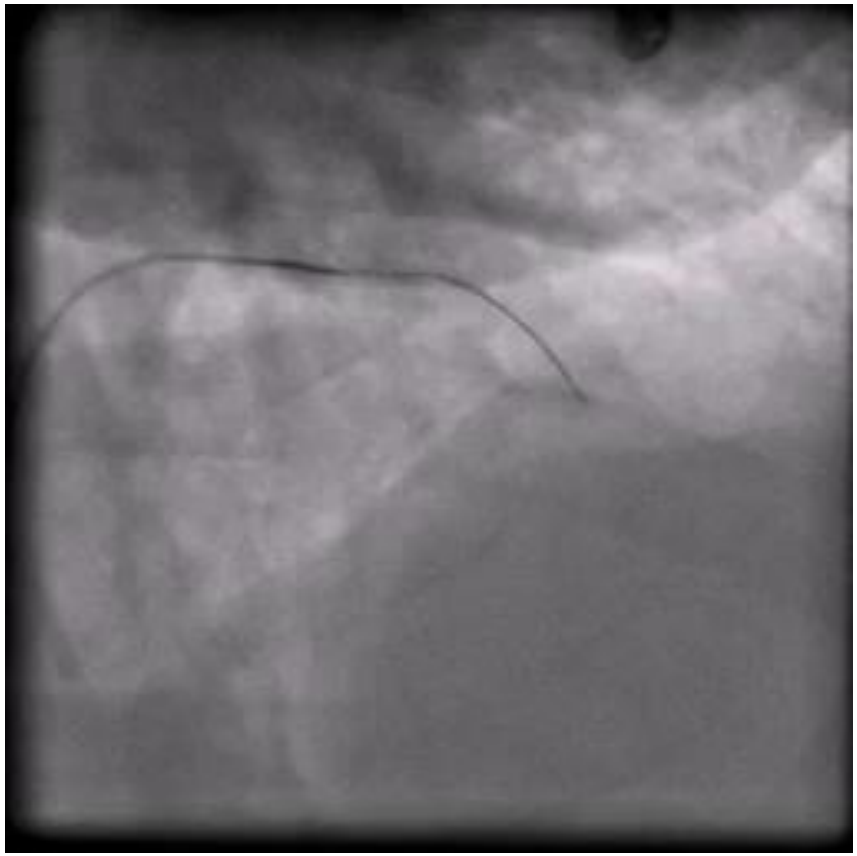
Deescalation with gaia II wire in false lumen



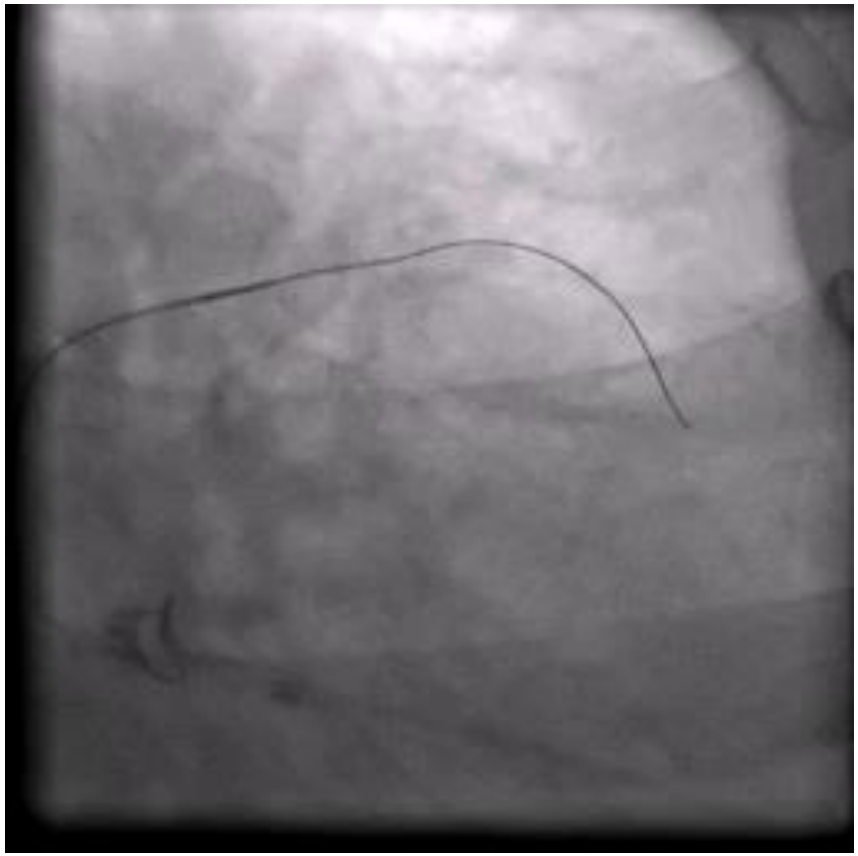
Parallel wire gaia II - gaia III



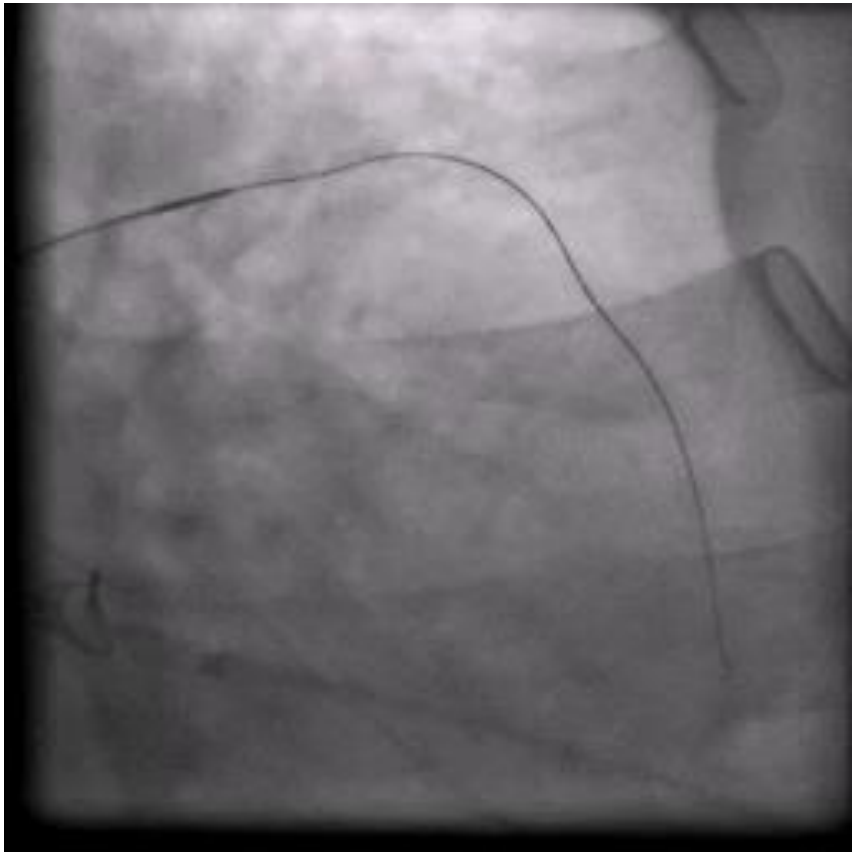
Gaia III in false lumen

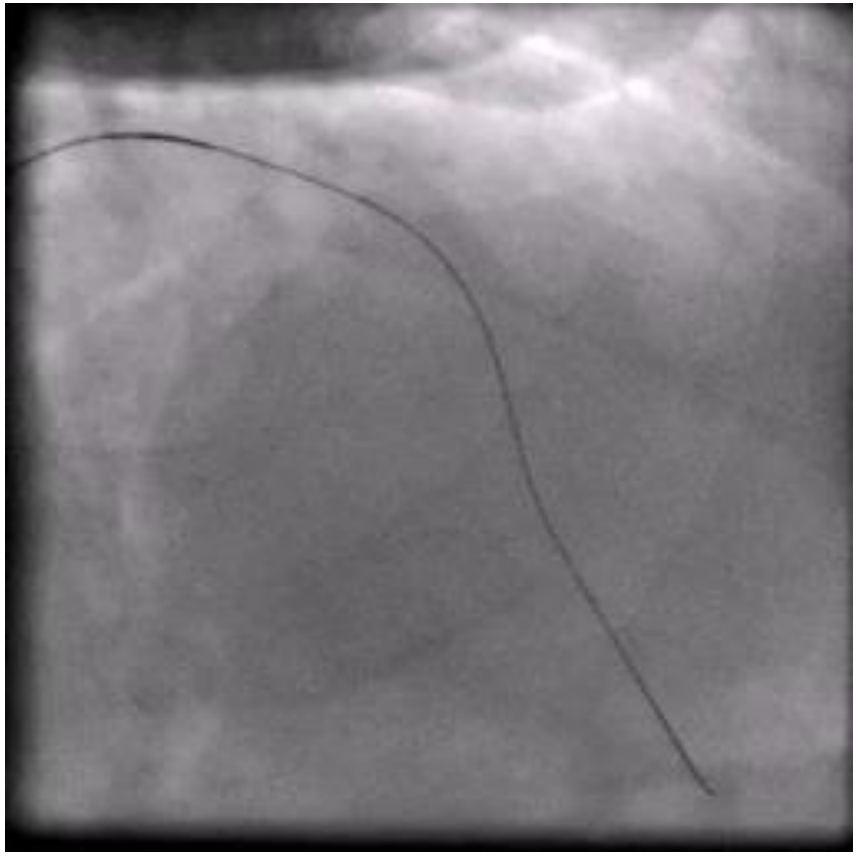


Gaia III reenter in true lumen

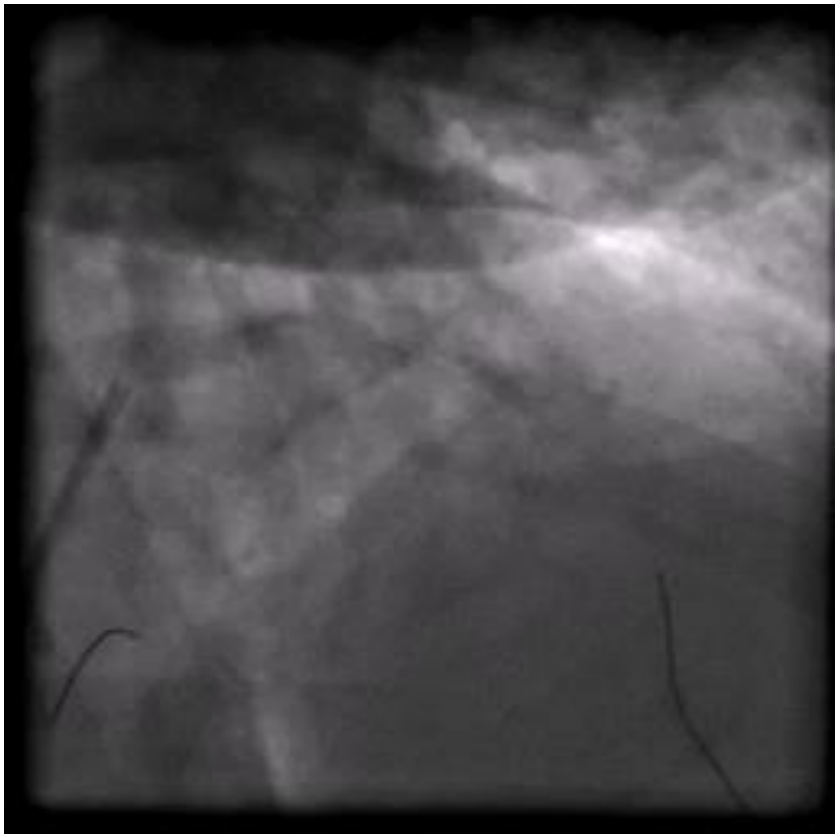


Gaia III through

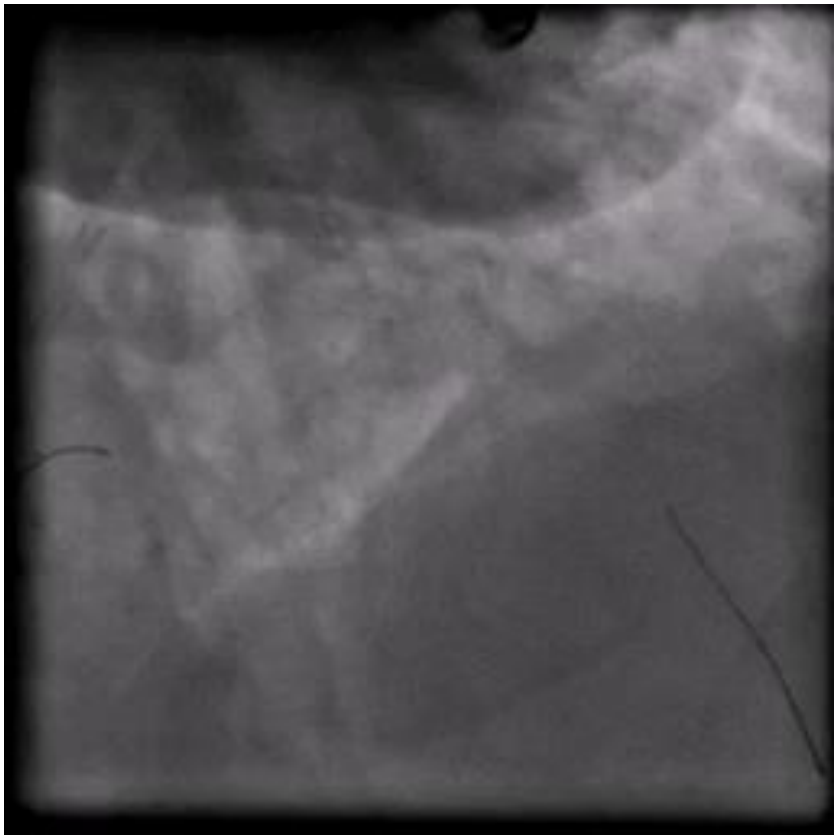




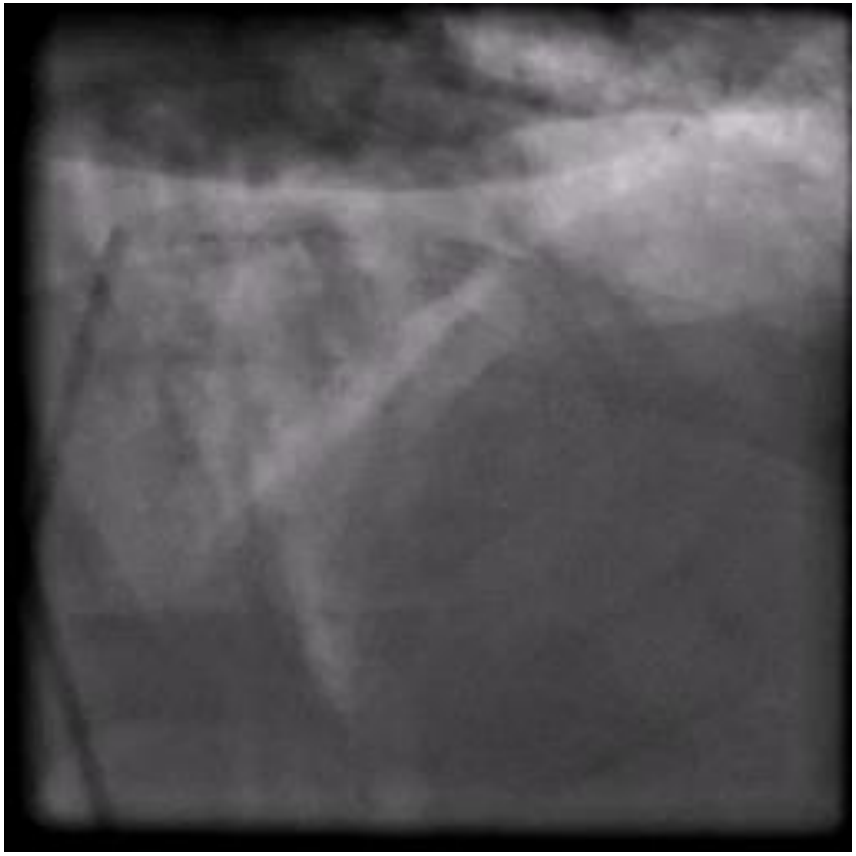
BHU

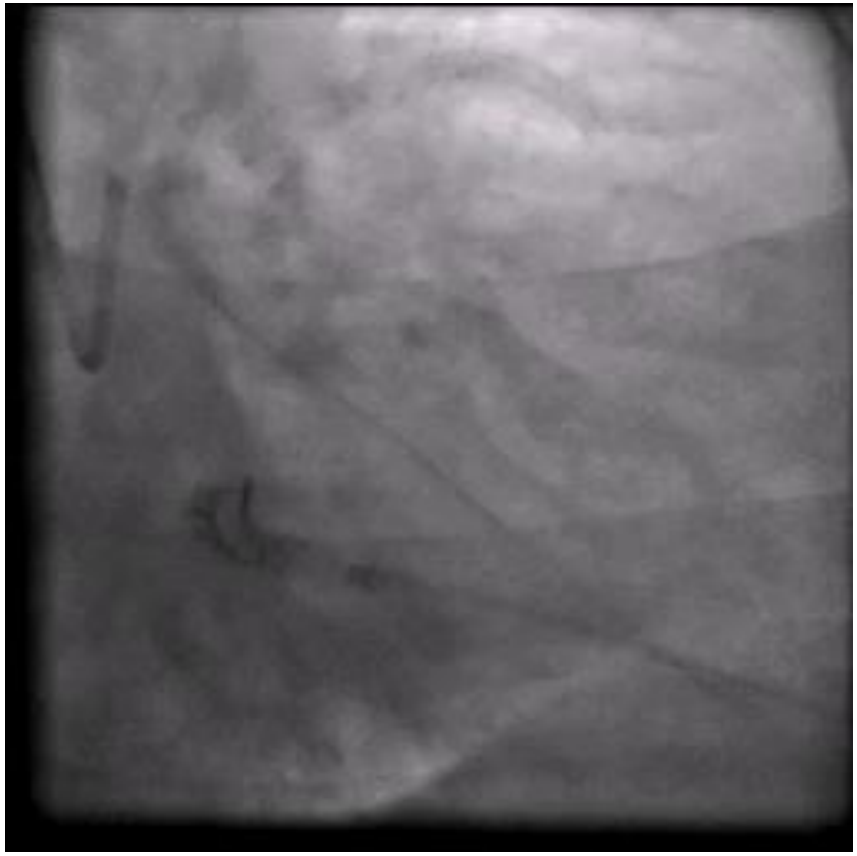


Post balloon dissection



Final result after 2 DES





In conclusion

- **IVUS in CTO PCI**
  - **Wire engagement in true lumen when proximal cap is angiographically ambiguous**
  - **Maintaining wire in vessel architecture even if in false lumen**
  - **Assessment of wire position distally**
  - **Assessment of true lumen dimensions**